Knowledge, Education, Media
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FOREWORD

The Second Round Table initiated by the project

"Digital media technologies and socio-educational changes"

The Second Roundtable Knowledge, Education, Media organized in September, 29th 2012 on the Faculty of Management in Sremski Karlovci within the second year of the project "Digital media technologies and socio-educational changes", but in a time when everything we adopted throughout decades is knowledge. It seems that, like the tradition in education - surpassed itself and rushes to embrace the new, different, fast - which is primarily dictated by the digital challenge in which we move from the end of the twentieth century.

The beginning of the XXI century has brought new dilemmas and made them more open, many questions even more complex. The discussion of the media and education was focused entirely on the digital agenda, issues of security, ethics, objectivity and traditional principles which professionals in the media relied on for more than a century. It made it more important than ever. No less important are the following issues: how to overcome the resistance to changes in the traditional media in the process of digitization, how to open or at least direct the traditional school and learning. How to open or at least direct the traditional school and learning and how to change that for the young? How to adjust traditional educational principles to the contemporary moment, especially when we consider that even when one believes in critical pedagogy as a safe place for the postmodern school, one quickly discovers that it lies on the traditional principles?

Academic Union, partly gathered around the republican project of digital media technologies and social changes in education, responded to our call for this Roundtable with more than 30 theoretical and empirical researches. The aspects discussed in the works are heterogeneous, sometimes ambivalent, always interesting and very challenging for discussion. Considerations included the questions of authorship, new user habits of digital senders and recipients of messages, the importance of media education in various aspects of daily life, key aspects relevant to distance learning, the role of the Internet and computers in the teaching process, the abilities of teachers to work in the online environment, challenges which are placed in front of project management in the digital economy, media education in order to improve the intellectual capital, new forms of business and information flow, critical aspects of media pedagogy. Asked questions were: "What is the new paradigm of success, what is the role of social networks in the real world, where do we study the media in relation to the key principles of media literacy, what challenges are in front of the Public Service of Vojvodina in the digitalization process?" The issue which was also considered is about the role of the new media in the election campaign as well as problems about legal issues of copyright in the digital community.

The discussion of high quality and competence among the participants of Roundtable showed how the themes and the titled project of researchers, experts and scientists are important for them and the public in general. Topics were interesting, intriguing, complex, there were many demanding questions and much more is expected from the research itself. The importance of research was highlighted as well as the fact of how much people expected from it and all within the project of digital media technologies and socio-educational changes.

All participants in the discussion, both local and the most competent in this field from all over the world are contemplating on authorship, new consumer habits, digital senders and recipients of
messages, the importance of media education in various aspects of daily life, key aspects of distance learning, the role of the internet and computers in teaching process, the competence of teachers to work in the online environment, media education and media literacy.

The Project Manager of Digital media technologies and socio-educational changes Professor Milica Andevski informed the participants of the round table with the results of previous research on this project, directing the attention of the specific environment in which the project is located, and the remarkable results that in two years the researchers demonstrated through theoretical and empirical research.

Away from Taganrog in Russia, Vice-Chancellor of the University "Anton Čehov", the director of the state pedagogical institute, the president of the Russian Association for Film and Media Education, an expert in the field of media literacy and media education, Professor Alexander Fedorov conveyed the experiences of the Russian Federation, which is a leader in the promotion and implementation of media literacy in the education system in Russia. He talked about the media habits from the aspect of pedagogy and as the author of dozens of scientific papers and books for media education. He turned his attention to the development of critical attitudes toward media content.

Away from Greece, Arapoglou Janis, Moodle partner, CTO ITisART, a leader in the development of digital, interactive and innovative technologies used in distance learning, of art and digital e-commerce, presented the Moodle platform for distance learning and talking about all its benefits and importance of modern technologies in teaching and daily practice.

The first example of good practice was presented by one of the leaders in the implementation of Moodle in higher education teaching practices with us Professor Miloš Bajčetić from The School of Medicine in Belgrade. He talked about his experiences in the use of Moodle, but also the pitfalls that this software brings with it. He also talked about how to avoid them, what are the advantages of this way of working in the education process, pointing out that a good preparation for this kind of work, the understanding of the immediate environment and proper access to the participants in the educational process are essential. Only when the above conditions are met can we talk about the really good practice.

Another example of the application of Moodle is the experience of the Metropolitan University of Belgrade. Talking about different experiences with the University Professor Đuro Kutlača it may be concluded that he wanted to point out the fact that the new teaching should not be understood as ignoring the traditional approach, emphasizing that the role of a teacher is indispensable.

The discussion was opened by a multitude of important issues to the participants in order to reflect new events and try to answer them:

- What are the obstacles to the successful implementation of knowledge management initiatives in our circumstances?
- Can we use the successful experience and knowledge in managing our companies; how can we improve business performance and achieve success?
- Are we ready for such use, multi-disciplinary approach in our business practices?
- Should we accept a measure of intellectual capital, and do we understand its significance?
- How do we protect copyrights online?
- How to respond to new customer habits: recipients of digital messages, how to train artists for the preparation of new digital messages?
- What is the importance of media education?
- How to implement media literacy in the educational process?
The above are just some of the questions that are open during the discussion on the topic of digital media technologies and socio-educational changes. Yet the fact that both Public Services were not present at the Round Table, a lack of interest for this issue says how much our society needs educated, media-literate and critically thinking people. Is this another sign that we are not aware as a society or we are satisfied with ourselves with low standards of performance in relation to the rest of the world; actually we do not have a developed awareness of the necessity of change?

It is encouraging that the Roundtable had strong repercussions in the scientific and professional community, that even a month after its completion the first applications and suggestions for the Third Round Table came. The Third Round Table is planning for May or September 2013th year, where we will discuss the main results obtained by the research project of digital media technologies and social change in education in the past two years. Our intention is to show the trends in our country, and that knowledge of it we compare with the achievements in the developed world.

December, 2012. Sremski Karlovci, Vojvodina

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DIGITAL MEDIA TECHNOLOGIES AND SOCIAL AND EDUCATIONAL CHANGES - FROM ASPECT OF TELEVISION JOURNALISTS

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Abstract: Out of all mass media, television is the one most dependable on changes and introduction of new technologies. Simply, the establishment and functioning of the media is conditioned by inventions of science (physics, electrical engineering, electronics) while the content concept follows the development path of social sciences (filmology, mediology, communicology). Television journalists are familiar with the basic principles of the new technology, because as creators of media content they daily go through process of recording and editing. This means that they know the theory and methods for transposing thought process in order to visualize their messages. In such circumstances, ten years ago, emerged the process of digitization of electronic media, as a new way of thinking and a new approach to audio-visual communication. That was a breaking point for analog world and all previous memory concepts and was followed by significant social and educational changes. In the context of such a transformation, the special emphasis is on the issues of the necessary level of awareness of television journalists in the public service, who are expected to educate the mass population. WHAT, HOW MUCH and WHY journalists need to know? This paper presents a fundamental conceptual clarification related to the associated media technologies found in work of television journalists. The aim is to highlight the significant changes that technical progress in the field of TV media initiate in terms of awareness, change of attitudes and as an incentive of social progress.

Keywords: television, electronics, recording, editing, analogue, digital, digitalization, change in mindset.

1. INTRODUCTION

For the messages mankind sent through electronic media it can be said that they were the most influential provocation of XX century. The phenomena of broadcasting image and sound to intercontinental distances through satellite, has rapidly condensed all experience, all achievements of this civilization. Methods of communication, of communicating messages and events, have become a part of universal media language. Addressing a human, the intention to say something about the human being especially through media methods, has lead to a more styled and technically more and more perfect media language. However, the creation of media signs systems is not completed! It is still an open process! Rapidly developing technologies dictate the adaptation, require thorough transformations of the manner of saying and even of thinking accordingly.

2. JOURNALISTS AS THE CHANGES’ HOLDERS

Radio and television journalists are creators and transferors of media messages. More than the other colleagues doing the same job they are in a situation of rapidly passing through new technological temptations, through virtual forms of communication and media consummation. Due to the nature of their media environment has been based from the beginning on electrical engineering (especially on electronics as the constituent part) they are constantly forced to subject the contents to technics’ form and dictate. There it is referred to: the manner of recording, transformation of the image and sound repository (tape, disquette, memory card), post-production intervention, archiving methods and broadcasting modalities (from tapes or server). Under the circumstances when new technologies are offering inexhaustible but not always clear possibilities to everyone, journalists are again being taught about the new way of presenting the world. They are getting to know cyber space and are (de)orienting by it, implying the knowledge on the interactive multimedia process. The

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1 Electronics – as a technical discipline it is a part of electrical engineering; it studies the movement of electrons in an empty space; it is also dealing with development and production of electronic components, devices and systems; it was named in 20-ties of XX century, after the American Magazine, Electronics.

2 Cyber space, as defined by David Haken, is a set of different social and cultural relations originating at the moment when people start using the computers and think about them, as well as when computers start functioning as a kind of technological “bridge” of human activities, as it is often spoken about in the so called cyber theory. A significant question regarding the cyber space is the issue of identity, with the following issues of body, sexuality, gender, race, class. Source: Panović, About cyber space and identity, the Internet portal “e-volution”, no. 1, 2003, The Center for studying information technologies, Belgrade. http://www.bos.rs/cepit/evolucija/html/3/TEMA1/ipanovic.htm; site visited: 05.08.2012
whole recently speculatively memorized world has turned into a digital one, in two figures, the way it is being abstracted by artificial intelligence.

Implementation of digital media technologies is not merely a process of adapting any kind of contents to its further processing, by using computer technologies, but it is shown as a civilization step out into virtual world. The world of abstraction, intangible, untouchable (unlike celuloid film tape), but so susceptible to human eye and ear. Imaginative and manipulative. And as such it would have to contain human principles of ethics, truthfulness and trust in what seems hardly combinable, and that is abstract thinking and a particular tool. In the practice of television journalists it should be the primary aspect of professionalism, against the danger of media manipulations enabled by the technics – the inside-frame interventions, altering the recording from life.

Simultaneously, new correlations are cretead between the those creating and those using new media, all dictated by accelerated development of media technologies. Those are not just formal changes but are essential changes in the image reception, changes in comprehension and interpretation of messages, changes in usage of mass media in everyday life. Their announcement has already been present for about ten years, but the implementation detects all of us in Serbia as insufficiently informed.

In 2009 the Government of Republic of Serbia adopted The Strategy for transition from analogue to digital broadcasting of radio and television program in the Republic of Serbia. The complete transition to digital terrestrial broadcasting should have be made till 04th April 2012 but it has been performed only partially (August 2010); whereas the digitalization of radio broadcasting has originally been planned for 2017. Some of the deadlines have already been exceeded or merely partially fulfilled. The reasons are very complex.

In the previous decade the strategies proposals have been made, all necessary regulations and laws have been adopted, but their implementation is still absent. For the television journalists as the contents’ producers it is necessary that they are conversant with the digitalization process in order to utilize all the potentials in creating their own program goals. This text is trying to provide all the answers to the following questions:

- WHAT, HOW MUCH AND WHY do journalists need to know about digital technologies in order to contribute to the change of social awareness?
- Have the journalists in the public service of RTV Vojvodina already met with the process of digital compression?
- In which is the analogue signal differentiated from digital- from teh aspect of TV journalist? In what way is it shown in their work?
- To what kind of changes in general do new media technologies lead according to the comprehension of time and space, and also according to an individual positioning, to the journalists in television? (eg. abstracting in cyber universe, transposition to virtual dimension for writing a blog and similar)?

3. THE MODES OF CREATION OF TV CONTENTS HAVE ALWAYS BEEN CONDITIONED BY TECHNOLOGY

At the beginning of the twentieth century Rudolph Arnheim noticed that perception and thinking in man are inseparably intertwined. At the time of his writing the first more significant theoretical text about television (The Prophecy on television), the media has just been born: “The man who is photographing, writing or making movies – is the mean thinking with his senses.” That is how Arnheim concluded naming the phenomena perceptive thinking. He thought that such thinking did not need knowledge on multitude of techniques, estetics and manuals on artistic considerations, but rather just one persuasively explained theory that will confirm the necessity of visual thinking in general. Today, after “the consummation experience” of nearly a hundred years, we are aware that perceptive thinking is necessary to be applied every time the television broadcasting receiver is turned on. It means that the technical correctness is critically viewed as well as the plausibility of whether the recording is authentic (the camera position, the relation of the actors towards the camera – whether he/she is aware of the presence, the frame length, inserted frames). Further, based on the viewers’ experience, it is good to perceive the reasons, idea and intention of the author/broadcaster.

All theoretical conclusions follow the practical ones, the theory on media is still in its early phase and in a highly dynamic process, which is from the start closely related to technical achievements. Withal even the invention of television as a phenomenon is the result of a series of pragmatic discoveries of numerous innovators. The history of the television occurrence is view, electronics, optics. It is difficult to precisely point out to a single

3 Time and space - Basic parameters and forms of existence of the world are the space, considered abstractly, but divisible into fathomable segments, and the time in the most general sense of the flow of events and the "constant duration" depending on the existence of the physical world. According to the conventional understanding the time is a "split" - the present, past and future. Thus, all exists at certain times and in certain spaces, such undoubted categories that define the overall perception of appearances. Quoted from: Gordana Đerić, Categories of time and space in optics of "mental mapping", Institute for Philosophy and Social Theory, Belgrade; http://www.doiserbia.nb.rs/img/doi/ site visited: 05.08.2012.

4 Positioning an individual in cyber dimension - stays, doings (writing, setting up audio-visual records to the Internet) in the virtual time and temporalized space digitized.

5 Rudolf Arnheim, Art and visual perception - psychology of creative watching, University of the Arts, Belgrade, 1987.

6 Consumerist experience - uncontrolled “swallowing” of media messages; passively, by inertia and indiscriminately monitoring, the adoption of what appears on the screen without the constructed value criteria.
Progress of technology has enabled the record-keeping and time shift from the moment of recording. Nevertheless live program remained for quite understandable reasons - when it comes to a unique and unrepeatable event in time and space. "Live Broadcast has attributes of: simultaneity, immediacy, spontaneity, authenticity and of massiveness". This type of television program is a very understandable example of why is standardization of digital signal necessary.

"One should bear in mind that all around us there are various digital signals, for example, of mobile phones and the Internet... Therefore, it is necessary to agree on the manner in which it will be possible to identify and isolate digital television signal from the sea of other digital signals that certainly come to the receiver. Also, it is necessary that the content recorded in another country is easily broadcasted on national television as well. Thus, for example, a broadcast of the match, which is currently played abroad and which is recorded by some foreign TV, should be transferred live to our television by using studio, transmitting and receiving equipment at our disposal. That is precisely why standardization of digital signal is necessary. In this sense, the agreement has been reached at the level of Europe, Russia, Australia, Greenland, the largest number of African, Asian and some other countries on the basic characteristics of digital TV signal. These agreements are binding and all must respect them so that the signal could freely be distributed between the countries and so that TV receivers and other equipment could be set up and agreed. Unified, all of these standards are marked with the DVB-T. A new generation of standards, adopted as the standard for broadcasting in our country, is the DVB-T2. It is important to note that all of this relates to the distribution of signals using a network of transmitters on the ground - DVB-T (terrestrial)."10

The above quote is very illustrative of the basic premises approaching the digitization process and the reasons for the introduction. The simplified assumption starts from the knowledge that sky is not infinite. The frequency spectrum of the Earth's layer is a limited natural resource, thus it is necessary to harmonize its use internally and internationally.

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10. Taken from the website of Public Company Emisiona tehnika i veze (ETV), Belgrade. The company was founded on 16.02.2010 based on the Decision of the Government on establishment of the companies for managing the broadcasting infrastructure ("Official Gazette of RS" no. 84 from 09.10.2009) in accordance with the Law on public companies, Law on Telecommunications and Law on radio-diffusion, http://www.etv.rs/digitalizacija; 21.08.2012.

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Historical moment that would mark the birth of television, radanje televizije. It is even more difficult to single out one achievement and one person as the inventor. Hundreds of minor technical discoveries, on which the same number of inventors worked, generated the prerequisites for the new invention. When a small screen started to function, a man finally met his brothers all over the world.

In the meantime, the television has become a mentor of new media contents; forming the opinions and behavior of the majority of population; forcing a particular life-style; forming the standpoints and views. Not all of it is a lie but is is neither a complete truth. Due to such stereotypes, the paper is taking a distance stand, basing itself primarily on practical deliberations of television journalists in educational program serving primarily for educational purposes and positively influencing the viewers. Simultaneously it implies that the creative employees (journalists, editors, producers) and secondary employees (organizers, assistants, secretaries) are permanently self-educating, following the evolutions in the television techniques and new technologies.

When there were no technical capabilities of recording on some image and sound repository and subsequently broadcast the recording, all television programs during the first years of television diffusion, have been performed live. It was so; until the appearance of magnetoscopy7 in 1956. Even the television dramas have been performed in a studio, at the same time when they were "aired".

**Example 1:** Informative program of Television Belgrade broadcasted live the show **The opened door.** The actor Slavko Simić was reciting a poem of Bogdana Ćiplića **Watermelon**, dressed in national costume of Banat. His reminiscence on the event is highly vivid:

My stage-fright was greater than the fear of an entire army before the battle. I felt professional responsibility, it was necessary to adjust the movement and the expression to the new media. We worked in a new, unknown ambience with cameras, fishing rod-microphones, lights, and new people. 8

Adaptation of this participant was highly visible, discernible. But adaptation of TV journalists, most often coming from the radio, even today, is highly complicated. Often present is the pleonasm of the uttered and seen, the obvious situations are being retold and described, the film language grammar is difficultly mastered (framing and layout), the editing process is reduced to mere stenograms’ reduction. Taking into account all of these constants, the question is in what direction should the expectations from TV journalists be moving in the process of digitalization?

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7. Magnetoscopy - a device that enables capturing scenes on magnetic tape and later reproduction in the form of television images and sound.  
4. TELEVISION IS HOMO VIDENS

Television is *homo videns* - primarily audiovisual media. The image and sound are the subject of complex multimedia aesthetics of dramatic art of our time. If we appreciate it as a medium of art, television confronts us with the reality of electronic image, made up of millions of electronic dots and as such, should be an objective transferor of the world’s image.

At this point, now, it is necessary to demystify the visual illusion of television, the so obvious illusion of reality. It should be at least indicated how the image is displayed on the television screen:
- Series of horizontal lines appear (*scan lines*), which the electron beam prints out at high speed
- The whole image is divided into two half-images, into the odd and even lines
- And field by field is printed (the first TV’s are made in such way)\(^{13}\).

The number of those elements (pixels\(^{14}\)) in the vertical and horizontal row, which the device can display, is called the screen resolution\(^{15}\). The greater the number the better is the image quality and sharpness.

We could perhaps ignore these explanations as viewers, even as creators. However, as curious observers we can not continue to be uninformed, because we are in the position of meeting daily various types of TV sets with different types of transmission techniques. These are discernable to all objects and phenomena, visible from this side of the screen (the viewers’ side). One need not be a great expert, it is just enough to walk through the store of video technology, and make sure that the dynamic evolution of high-definition television shows that it is the most powerful invention of our time.

At the same time on the other side of the screen (the creative one), where the program is made, complex processes of changing-replacing-overlapping of old and new are taking place. Those employed in TV media are obliged to attend and get involved in these processes, both at the technical and at the level of content. There should certainly be taken into account the bipolarity (and sometimes antagonism) of program and the technical part of a unique television center or television station. Each of these sectors, in its domain, develops its own formats (TV image formats, CD or DVD format, PDF format, genre-format of TV show), their standards of broadcastability, and also their definitions of sustainability\(^{16}\). Tin order that

\(^{11}\) http://www.cybercollege.com/frtv/frtv017.htm; 21.08.2012.
\(^{12}\) http://www.etv.rs/digitalizacija; the website visited on: 21.08.2012
\(^{13}\) http://www.vesic.org/blog/video-i-pc/rezolucija-pravila-i-digitalna;
\(^{14}\) *Pixel* (Engl. picture elements) – the smallest element of the image in electronic media; the dots forming a horizontal line, and then build a TV image, the less distance between the pixels the higher the resolution of the image.
\(^{15}\) Screen resolution – in abridged form, the resolution of a TV screen is mostly expressed by the number of lines, not the number of pixels, so the resolution of the display that has 1920 x 1080 pixels is marked with 1080. Standard TV screens offer a resolution of 1576 x 720, HD Ready TV have the resolution of 1024 (to 1366) x 1768; Full HDTV offer 1920×1080. http://www.etv.rs/recnik-pojmova/56-rezolucija
\(^{16}\) The issue of sustainability of television – in the context of exclusive and opposing views, such as the demagogic
the whole organized microcosm would not disintegrate like puzzles (puzzle games), the network base that will hold everything together is necessary. This means that a synergy of program people is necessary (the editors, reporters, producers) with the so-called, technical intelligence (the electrical engineers, technicians, editors) for the purpose of proper understanding and use of the same technique, capacities, media.

4.1. Television image formats

Diverse television image formats would be totally irrelevant to a careless reporter. Nevertheless: image composition, the arrangement of objects or characters in the frame, their size, placement in the foreground, the choice of film plan (close or total) - all this is saying something. Thereby the television journalist, with the collaboration of filmmakers and directors, should convey his message to the viewer, his attitude towards the character (whether he/she glorifies or diminishes the significance). Therefore, television journalists are trained to speak using the image. Most of these training falls into the domain of scientific field in film studies, with the history and theory of film reviews and principles of photography. Implied there is that the summary of the most important technological inventions that have influenced the development of audio-visual expression is useful.

Example 2: TV picture format includes screen size, the ratio between the length and width of the image on the TV set. At first it was 4:3 standard format, and it was imposed by the industry of TV receivers as a cathode tube should be placed in the possible space of the television set.

Hollywood’s film academy has already since the 1950’s established a standard format for feature films widescreen or cinemascope,17 and the problem emerged: how can the films thus formatted be shown on the small screen? The proportions were not compatible. The viewers were watching the unnaturally elongated characters, not knowing that the whole scene was also cut off from the left and right side of the screen. The second variant was with a black field above and below the displayed image. Teams of experts have been solving this problem for decades, so that the electronic industry could produce TVs capable of rendering full screen movies.

![Different formats of film tape, adapted to broadcast on television](image)

Only at the end of the twentieth century, with the advent of digital technology, opportunities were created to start the production of TV sets with the ability to display images in 16:9 proportion. Since then, the format was established as the new television standard that is able to show all that was on film tape, without compromising the scenes.

The technique thus dictated the aesthetics of the small screen. Film editors in editorial offices of television, had to know that. Recognizing that logic - that “knowledge of new technologies is necessary to the journalists, that are already widely available to us in order to achieve educational, not just news and entertainment function of the media”18 - we wonder to what extent, to what scope do the journalists need to know the computer scientists’ language? Or, to simplify the dilemma with a few symbolic issues/comparisons:

- Does anyone who sits behind the wheel of a car have to know how internal combustion engines function, or is it just enough to know when you need to pour in water, oil, fuel (with proper handling)?
- Whether the cooks should bother with the operating principles of microwave ovens, or just use its heat?

To avoid useless controversy indications, we are pointing out again, that professional consciousness and conscience of journalists in the public service is the deciding factor in everything. At a somewhat higher cognitive level are the questions of degree and quality of being informed: whether they will deal with the form or the essence? Whether they will satisfy only by the knowledge from the

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17 Widescreen (Engl. widescreen – wide screen) also the Cinemascope (Fr. Cinéma + Greek skopos = film + watch) – in cinematography wide screen system that is commensurate with the size of the icon on film tape (1:1.33 or 1:1.66); using the complex process of distorting lenses, images from the film tape are, by special leaflets (lenses) narrowed (compressed) and using optical means they are dispersed and reproduced, in order to display the movies at the cinema; for television

18 Dubravka Valič Nedeljković i Karlo Bala, How much do those who should promote the digitalization of TV broadcasting know about it, University of Novi Sad, Faculty of Philosophy - Department of Media Studies, Novi Sad. https://docs.google.com/scidocs-clanci.ceoon.rs/data/pdf/2012/
digital glossary of terms (zone distribution, network operator, conditional access, on demand media service), or they will try to essentially discern the analog and digital system, and consequently create program contents, to share their knowledge with the viewers and listeners?

4.2. Analogue versus digital

An **analogue** signal is a term from electronics, which means "continuously varying electrical voltage or current (directed movement of charged particles under the influence of an electric field). The examples of such signal are: light, sound, temperature, air pressure, wave forms and the vast majority of other natural signals.

![Figure no. 7: Graphical display of analogue signal](image)

The digital signal, also in electronics, is the level of voltage or current whose value can be changed - in just a certain number of states or steps. Which means that, unlike analogue signals, digital signal amplitude can have only a limited number of values? For example: the state of the switch (on/off), the binary code in computers (0 or 1), Morse code, etc.

![Figure no. 8: Graphical display of digital signal](image)

1) low level 2) high level 3) rising edge 4) falling edge

The figure above gives an example of a binary digital signal, with two stable states - high and low. Transitional states (edges) are not defined as a part of the signal, and thus digital devices are set to ignore them.

The main advantage of a digital signal is in its greater resistance to noises and signal attenuation. When applied in television, this means that itghosting, interference in tone, noises will be removed. "In addition, lower frequency response of digital channels shows that frequent ranges of television and radio services are separated by bands (firefighters, the police, airline flight controls) which with the break of the cables prevent television signal leakage within the range of those services."19

Signatory of these lines, as a television journalist in Public Service Broadcasting RTV (formerly TVNS), since 1984 to date (2012), graduated few changes of complete technology, in the form of tools and operation processes. In the first years upon arrival, in the television the work was parallel with:

- **film technology** for all creative programs except informative (16mm celluloid tape + tone tapes, film camera, sequential-linear editing with the help of scissors and pastes)

- **U-matic** technology primarily for the informative program (the first electronics, ENG cameras, the first image and sound recordings on magnetic tape, analogue system; present on the market since 1971)

- periodically also with **S-VHS** technology (an alternative technique at the transition between the professional and home video, because of the smaller footprint is more affordable in some locations and in specific, tense situations, more mobile, on the market since 1987)

The analogue systems of work, in addition to the aforementioned techniques, have been practiced also by subsequent introduction of **Beta technique**:

- **Betacam SP** (fully professional technology, highly reliable, with a variant of Beta Ordinary, on the market since 1982)

The first numerical or digital camera arrived with DVCPro tapes, but in practice they did not lasted long, but soon switched to DVCAM (on the market since 1996) That are still being used. In addition to those the cameras with a memory card (on the market since 2005) are used. Simultaneously during the last ten years, the technique also used is IMX, mainly for archiving or postponing broadcasting of television shows. All in all, some **nine different sound and picture carriers**, supposed to be met, viewed the features during the operation and to adapt to the optimum possibilities.

Example: The photo above dates back to 2005. It represents the working atmosphere in the television studio of RTV Vojvodina, on the set of an episode of a five-year film series The Odyssey of Film. The illustration of "transition period" in technical and technological terms: The studio camera in the foreground (left part of the photo) is a digital camera, the camera on the set is an old film camera (behind the editor’s head), cables and microphones are not seen (except black "bugs" on the second button of shirt of the man in the middle), which means that the sound recording is digitalized. The complete set design in the studio is of ancient times (but is still used today, 2012): three vertical pieces of hard cardboard, with cut out black frames, with 5 squares in a row symbolizing the filmstrip; drapery in the background are unironed linen, stage design is complemented by worn props (reel of film tape with its case, down below in the front of the table), and most importantly - lighting equipment which "does not dispel the darkness."

If this photo were accompanied by photos from the studio of 28 June 2012, when an educational program about the currently very actual issue was filmed: Shortage of medications for transplant patients, illustration of "transition state" would be identical! Studio that would be fully equipped with digital devices, would have completely virtual display and would provide much more illustrative mise en scene. It would include an empty space around journalists and interviewees, no scenery, but for the audience it would be filled with scenes/objects that are visible only to them, using chroma key technique (chroma-key). As it is currently done in our reports on the weather forecast. In such circumstances, preparation of journalists for the show, as well as the process of running the show in front of the cameras, would be quite different.

4.3. Good enough tools

Ten years ago (2002), Siniša Isakov wrote about the technological potential of television as follows:

"When we finally got good enough tools to parse the analogue image to a sufficient number of pixels and to have them available for some time in electronic memory, the conditions have been created that we seriously
consider what do we really need out of all of these bits and bytes. At the beginning of the 90’s, countless schemes and algorithms for the compression of video signals were developed for various purposes and the desired quality of the recording, transmission, assembly, storage and broadcasting. No segment of the television production was spared …

In time satisfactory answers for many production and transmission ranges and for all known TV genres were found. These answers are known today as the Standards for video compression. “

From the above quotations we learn that the technological environment in television has "drastically" changed in just a decade. This period is characterized by a multitude of theoretical and technical solutions, so that it became necessary to establish new system standards. Also, new operating methods/procedures (who and how is to enter raw materials in computers, etc.).

As the tools have changed, bringing a variety of options in terms of better expression of image and more quality sound reproduction, so the user awareness had to change in the media: the journalists, photographers, editors, producers, sound masters.

The biggest turnaround happened in the editing room. The transition from linear to nonlinear editing demanded a completely different work already at shooting in the field. Following the usual sequence of steps in production, it meant that, above all, a strategy of visualization by writer/director and journalist must be precisely designed. For a journalist this means opting already at the level of first ideas that he/she places into the synopsis, and for the writer (if not the same person) when is he/she to determine for the selection of reality. The director however, should be well familiar with assembly capabilities, softwares for video editing applications, various effects and transformations in the computer images (up to solarization to fragmentary decomposition).

In addition, this medium has a large amount of additional multimedia information: images, audio and video recordings. For investigative journalism searching the databases, is the first step towards argumentation, but it is necessary to establish new system standards. Also, new operating methods/procedures (who and how is to enter raw materials in computers, etc.).

Speaking in favor of the fact that the journalists need to be trained by someone in implementation of new benefits offered by the software is also the mentioned, expert explanation. They cannot do it on their own. Using digital technology and responsible attitude towards the social environment requires applicable expertise, that will be transferred to the journalists and ordinary users by the digerati - the brokers of network world. They should be the educators of the journalists, but also take part in shows where in an accessible manner they will clarify the concepts of digital media technology.

Since the media digitalization is the process that will touch every household, a media guide on the transition from analogue to digital broadcasting, would certainly be welcome. Unfortunately, there are no such indications. For now, journalists are self-educating, usually via the Internet, just as it is done by most computer literate users – they become autodidacts.

In favor of this claim are the results of a survey conducted by Dubravka Valic Nedeljnikovic, by surveying 60 journalists of Television of Vojvodina (June, 2011):

"Journalists have proven to be aware of the extent of how they are not well informed about the coming changes. More precisely, they were realistic in their assessments of how much they were (not)ready for the transition to digital terrestrial broadcasting. Even 40% believe that they are not prepared for the new situation in which they are to produce the program, while nearly a third believe that everyone can do something.

These tools also help in the integration of multimedia contents into work processes, which have so far been prevailed by the textual information.

Modern image analysis systems operate with the syntax keywords, based on some characteristics of the image, such as color, shapes, textures and so on. Examples of these keywords are horizontal edges, large red areas, etc. Keywords also help in shortening the list of images obtained by searching, which contributes to faster response times for the user and, in the case of database servers, reducing the amount of traffic on the network.

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"Journalists have proven to be aware of the extent of how they are not well informed about the coming changes. More precisely, they were realistic in their assessments of how much they were (not)ready for the transition to digital terrestrial broadcasting. Even 40% believe that they are not prepared for the new situation in which they are to produce the program, while nearly a third believe that everyone can do something.

22 Bit (Engl. binary digit) – two numeric digits; the smallest unit of measure for digital information; may have the value 0 or 1, it is abbreviated as b.

23 Byte (Engl.) – eight bits (binary digit) is a single byte, abbreviated form is B; in bytes (B), kilobytes (KB), megabytes (MB) expresses the amount of data, for example, usually on a single CD fits 650MB.


26 Digerati (Engl. digital + literati) – the term that includes people well versed in digital technology (Hardware and software engineers) and who “know how to write” ie. to show their knowledge. The term first appeared in the Times magazine (January 1992), was coined by journalist John Markoff. Source: Iva Nenić, Culture of the cyberspace, e-volucija, no. 5, 2004, the Center for the Study of Information Technology, Belgrade. http://www.bos.rs/cepit/evolucija/html/5/uvodnik.htm
Ignorance of journalists from technical-technological process of production of digital programs, is reflected in the fact that more than half of respondents (53%) to the question: Since when has your media produced the program using digital technology (ENG cameras, computers in the editing process)? Responded that it did not know. Which means that they do not understand the question, as the public service, for the preparation and processing the programs, has been using digital technology for years.

The degree of suspicion and lack of confidence in the technical equipment is shown in the following chart:

46.7 percent of them have expressed total disagreement with the proposed sentence in the questionnaire: We are technically equipped for the transition to digital terrestrial broadcasting, and another 31.7 percent were only partly concurring.27

By referring to the results of this study, we want to argument the view of the need to engage experts that will instruct the auditorium, and members of the media in basic knowledge of what is awaiting for them with digitalization. First they need to know whether they will need to buy new TV sets, or will it be enough to adjust the old ones with additional devices.

Siniša Isakov28 that started working in TVNS (now a public service broadcaster of RTV Vojvodina) wrote for years about what are we to encounter in the world of information technology. In 2009 in the magazine for professionals in the electronic media, he explained how digital television would look like in Serbia:

"By choosing the DVB-T2 ... we will have greater flow, which is perfect for HDTV and better utilization of the spectrum ... The gain from the transition to digital broadcasting and the release of a great part of television spectrum, should be possessed by everyone - through the establishment of new services and providing new services, as well as enabling the work using a number of wireless devices in the future." 29

The expressiveness of television journalists, clearly directly depends on new media tools. Nevertheless, it is precisely why the wider context should be viewed and then "the contribution of new technological capabilities to traditional journalistic values should be examined, such as: knowledge, honesty, truthfulness, reliability, verifiability, association, representativeness, credibility"30.

We are witnessing the incredible possibilities of cloning human appearance using the technique. Such circumstances will increasingly affect the profiling genre of television content, from news to arts and education. However, the following should be noted - techniques and technology do not define the level of creativity, nor the ethics measures, it is rather done by the man who created, programmed, (mis)used them. Manipulativeness is today increasingly present, as well as the possibilities that are thoughtfully created. It is therefore expressed urgent need of having the technical and journalism, media literacy, equal – both for content creators and the audience.

4.4. The credibility of images

Modern technologies extend the capabilities to capture the visible, and even what it used to be in the shadows, what film cameras without additional lighting "weren’t able to see.” Improvements in digital media technology

27 Dubravka Valič Nedeljković, Journalists of TV RTV on Digitalization, Faculty of Philosophy & Faculty of Management Novi Sad, Monography "Knowledge Education Media" 2011. (163-172)

28 Since 2010 Siniša Isakov is a member of the Working Group for the implementation of the process of digitalization of television broadcasting in the Republic of Serbia, the Ministry of Telecommunications and Information stock company.


30 Derived from a description of the research project Digital media technology and social and educational changes, supported by the Ministry of Science and Technological Development, Belgrade, 2011-2014.
significantly improve the expressiveness of the image, and tricks that editing programs offer obtain unimagined dimensions.

The procedure of nonlinear editing, through a certain software package, allows journalists to manipulate with the sections of audio-visual recordings as with the files. To easily and rapidly rotate interlocutors, clips, sequences. To use the effects offered by various software packages such as Adobe Premiere (with Adobe Photoshop and Adobe Illustrator for graphic imaging), Canopus Edius Pro, Avid Xpress Pro, Final Cut Pro that can easily upgrade and decompose images. In addition, one can not ignore the sound. There is a very high quality program for editing processing and sound design: Pro Tools, Nuendo, Sound Forge.

- Why do the journalists/authors, however, need to know the terms in computer science?

For a simple reason - to know how to use the technical characteristics of tools, just as a painter knows the type of brush, to achieve artistic expression. Also, to avoid clichés, stereotypes and exaggerations. Average informed the author (journalist-writer, director, playwright), does not need to know the complete processes in details occurring in the computer. It is enough to master the basics of operating systems functioning (Microsoft Windows, Linux, MacOS) and some word processor (Microsoft Word, Open Office) as a function of basic computer literacy. The most important thing is that he/she accepts the computer as a device that can be of great help in the process of expressing the author's vision. To accept the device as a tool that can revive almost anything human imagination can imagine, encourage creativity, skip barriers of previous limitations in television production (acceleration/deceleration, double exposure, rotation).

In the game of changes and transfers, due to the possibility of intervention within the image, the accuracy of the original material is brought into question. The recorded real world is being subjected to the course of fiction in the manifold variety of meanings, which alarms to cautiousness, raising questions about the boundaries between genres. Will something staged and directed be framed to us as real? But much more than that - this would undermine the foundations of belief in the documentary image, authenticity and reliability of the entire film gender or television truth. Television thus recorded real world is being subjected to the course of fiction in the manifold variety of meanings, which alarms to cautiousness, raising questions about the boundaries between genres. Will something staged and directed be framed to us as real? But much more than that - this would undermine the foundations of belief in the documentary image, authenticity and reliability of the entire film gender or television truth. Television thus recorded real world is being subjected to the course of fiction in the manifold variety of meanings, which alarms to cautiousness, raising questions about the boundaries between genres. Will something staged and directed be framed to us as real? But much more than that - this would undermine the foundations of belief in the documentary image, authenticity and reliability of the entire film gender or television truth. Television thus recorded real world is being subjected to the course of fiction in the manifold variety of meanings, which alarms to cautiousness, raising questions about the boundaries between genres. Will something staged and directed be framed to us as real? But much more than that - this would undermine the foundations of belief in the documentary image, authenticity and reliability of the entire film gender or television truth. Television thus recorded real world is being subjected to the course of fiction in the manifold variety of meanings, which alarms to cautiousness, raising questions about the boundaries between genres. Will something staged and directed be framed to us as real? But much more than that - this would undermine the foundations of belief in the documentary image, authenticity and reliability of the entire film gender or television truth. Television thus recorded real world is being subjected to the course of fiction in the manifold variety of meanings, which alarms to cautiousness, raising questions about the boundaries between genres. Will something staged and directed be framed to us as real? But much more than that - this would undermine the foundations of belief in the documentary image, authenticity and reliability of the entire film gender or television truth. Television thus

Given the state of shifted reality, knowing a second (less humane) side of human nature, this knowledge can also be intimidating. Neither the ingenious invention of Alfred Nobel was aimed at creating weapons of mass destruction - nor yet did it happen.

If the progress of new technology reached the point where it involves cloning copies of the human species, it is logical to fear that the visual clone will become a reality in this new virtual world.

- Is "the fate of consciousness in the twentieth century such - to reconstruct itself from something other than what it is itself and to obey the completely constructed reality as something ostensibly primary."

- Or will the man be able to develop the potentials beyond the technoworld?

Since "it is not a primary reality of the human being, but a reality built by the consciousness," one can only hope that the subjects will not destroy the measure of their own development, and that the role of instruments will be kept reduced to their use in the function of human senses and consciousness.

But still, not even for the distant future, fanciful wits of technological brains have failed to project the soul to the device. The possession of technology that can create and delete entire world, does not mean that it should be broken apart. It just means that we have the resources which the same technology can be used for a higher level of understanding and communication between people.

5. DIGITALIZATION AND SOCIAL EDUCATIONAL CHANGES IN CIRCUMSTANCES OF PROLONGATION

The most serious task and duty of all radio and television stations in Serbia, is the transition from analogue to digital terrestrial broadcasting. The undertaking by which the international community obligates us, through the Ministry of Culture, Informing and Information Technology, with specified date, which has already passed (04th April 2012)!

The Ministry of Telecommunications and Information Society established the interdepartmental working group, currently working on finding a solution for the transitional period of transferal from analogue to digital broadcasting, given the fact that the permits for national broadcasting have been issued till 2014 in Serbia, and for regional and local by 2015. This means that Serbia has to introduce digital broadcasting by 17th June 2015. The transition period (transitional, as specified herein) mentioned earlier in this paper (4.2), was simply not predicted by international laws. The plan is just to start pilot projects in Vojvodina, the most favorable area for the testing of complex technological processes.

31 Non linear editing (Engl.digital non linear editing) - system of stacking (packing) footage in the final media content; all is entersed into a computer: the tape recordings, music from DVD, photos from flash memory, with the help of Adobe Premiere (or some other program), it is styled, transferred, and corrected and finalized by re-launching it on a tape, a DVD or broadcasting server.


Dubravka Valič Nedeljković emphasizes how important it is, except for technical achievements, that journalists themselves are ready to change their viewpoints concerning the production of television programs: "It has been shown that they are not sure that's possible at this point. Even one third of respondents disagreed with the position offered in the questionnaire as follows: My editorial office is preparing for the transition to digital programming.

If the editorial offices are not preparing it means that no one from the vertical hierarchy – required them to. Then why would journalists voluntarily undertake the steps of general interest?

The Law on Broadcasting from 2002 is quite clear in the Directive:

Public services (Radio Television of Serbia and Radio Television of Vojvodina) should be the holders of the switchover from analogue to digital broadcasting (Article 78, Section 9 of the Law on Broadcasting, 2002).

For the purpose of realizing general interest in the field of public radio-diffusive service, ascertained by this law, besides common obligations of the emitters in relation to the program contents from the Article 68 of this law, the bearers of public radio-diffusive service are obliged to: "provide usage and development of modern technical-technological standards in production and broadcasting of the programs and preparations and, in predicted period of time, realize the plans of transition to the new digital technologies. This basically means that the employees of these two media are called up the most to accept the necessary managerial, journalistic and technical-technological knowledge in order that digitalization process is to be fully completed."

"Allow us to remind you that it public service is, by definition, established by citizens, financed by citizens and thus citizens have the right to control the extent to which this type of media can provide the fulfillment of their communication needs for information, education and entertainment, in new conditions of digital terrestrial television broadcasting content."

It is important to note here that, in the process of transition from one system to another, there will be changes in the business model, because the distribution of television programs is divided into two organizations:

1. an operator for production,
2. a distributor for the program broadcasting.

In addition the changes to the technical and technological strategy are implied. It is primarily the possibility that several programs are broadcasted on one frequency (through one TV channel). Then, a unique digital format that allows easy convergence of television, Internet and telephony services with an abundance of new services.

○ As we do not know what to do with it?

As things are now, it seems that journalists and the citizens are not touched by the implied shutting of analogue transmitters and the start of exclusively digital broadcasting, scheduled for the first quarter of 2013.

5.1. The sequence and the reasons for delay

Here is the sequence of procedures by which the Radio Television Serbia has been trying to prepare and in due time implement the plans of transferring to new digital technologies (as required by the letter of the law):

- On Wednesday 26th November 2008 marking fifty years of television operation, a full-day program of digital culture and art began to broadcast; thus RTS began the era of digital television; the concert offer of the editorial office of digital program began with the performance of Handel's oratorio; it was the first concert of symphony orchestra and choir, recorded in digital format while performing at the Sava Center. On this occasion, the editor Tatjana Ćitić reminded to contractual obligation, which Serbia has accepted and signed in Geneva, at the Regional conference on radio communications; the organizer of the event was the ITU - International Telecommunications Organization. According to the same, the deadline for the transition from analogue to digital broadcasting should be 17th June 2015. The plan of our house is to do it by the end of 2011- Ćitić said that time.  

- Goran Karadžić, RBA deputy president, told for the newspaper Danas, on 16th March 2009 that plan of the Agency is that RTS begins some day with permanent broadcasting of digital program, but that he did not know how long the

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34 Dubravka Valič Nedeljković, Journalists of TV RTS on Digitalization, Faculty of Philosophy & Faculty of management Novi Sad, Monography "Knowledge Education Media" 2011. (163-172)

35 Ibidem


experimental broadcasting would last, because of the ongoing work on the development strategy of transition from analogue to digital broadcasting ... The problem was in that now a small number of citizens can afford a digital signal. He added that the RBA has decided to schedule a meeting soon with the Board of RTS, which will discuss this and other issues.

- Radio Television of Serbia has not received approval from the RBA to start broadcasting all day cultural program via a digital signal. It is unclear how the RTS managed to start broadcasting the program, given the fact that in Serbia there is currently no plan for the distribution of digital frequencies, and RBA and RATEL divided the licenses for analogue broadcasting.38

- Aleksandar Tijanic points for Danas: The program: Currently we only have a provisional license. The only way to start the process of digitization is to broadcast an all-day program on the digital signal. Serbia has no legislation on the digitalization of broadcasting, so that RTS can not wait to adopt a strategy of transition from analogue to digital broadcasting, as well as other regulations .... Public Service of Serbia for a year already is broadcasting an experimental program on the route Novi Sad - Belgrade, (UHF channel 27 from Avala and UHF channel 31 from Iriški venac) but only for a few hours, so now we decided to start broadcasting 24 hours a day.39

- It is expected that the Strategy and Action Plan are to be adopted by the end of June 2009. If Serbia does not switch to digital broadcasting be 17th June 2015, and all the neighboring countries do, it will be almost impossible to watch television in our country, because the digital TV signals from the neighboring countries would be a lot stronger than our analogue signals – pointed out by the people from the Ministry of Telecommunications and Information Society.40

- The Government of Republic of Serbia on 2nd July 2009 has brought the Strategy for transition from analogue to digital broadcasting of radio and television program in the Republic of Serbia; which is a basic document by which the process has started.

- The procedure includes preparation for the adoption of two more strategies: a) A strategy for improving the position of the media in the autonomous province of Vojvodina, b) Strategy of development of public information system in Serbia by 2016 (Strategy for 2011:9)

- The Ministry of Telecommunications and Information Society established the interdepartmental working group, currently working on finding a solution for the transitional period of transferal from analogue to digital broadcasting, given the fact that the permits for national broadcasting have been issued till 2014 in Serbia, and for regional and local by 2015.

- 21. March 2012 a trial broadcasting of digital television signals began in Serbia, with 10 TV channels in standard definition (SD) and one program in High Definition (HD). The programs in standard resolution are broadcasted on Radio and Television of Serbia 1 and 2, Pink, B92, First television, Avala, Happy television, Radio and television of Vojvodina 1 and 2, Studio B, and in the high resolution is the program RTS HD. Digital TV transmitter on TV-tower on Avala was turned on by the Minister of Culture, Media and Information Society Predrag Markovic. He reminded that in 2010, from pre-accession funds of the EU 137 million euros were given to Serbia, of which 10.5 million was allocated for the preparation and the transition to digital TV signal. 

The EU has made a standard in this area, provided financial assistance, and the problems are caused by us. There are lots of unresolved issues in this area including building permits, construction works, ownership relations and the state of the transmitter - said Markovic.41

The aim of this paper is to assess the social education changes entailed by digital media technologies, in terms of television journalists. The most striking example is the long-term observation of the whole society to prepare for the digitization of radio and television programs in the Republic of Serbia. This process must be in accordance with international agreements and regulations. From the above-mentioned quotations noticeable are postponements and delays. What Minister Markovic said in the last quoted sentence, is the sum of complex issues that are very slowly resolved in transition societies.

THE CAMPAIGN ABSENCE

Processes related to the wider community, are most successfully implemented through organized campaigns through the mass media. It is paradoxical that public campaign of informing the citizens on the digitalization of radio and television programs - has not even started, and by the end of this calendar year, households having standard TV receivers and antennas will no longer be able to follow the regular program.

"According to Radisa Petrovic, deputy director of a public company Broadcasting equipment and connections of Serbia, who was a guest in the morning television program of the Public Service of Vojvodina at the

38 Ibid.
39 Ibid.
40 Ibid.
beginning of work of the Initial network, Serbian citizens are not informed about this important technical and technological changes in the terrestrial broadcast television program at all, which will allow users to access to the contents adapted to new conditions of broadcasting in a different manner.42

No seminars have been organized for journalists in which they would acquire the necessary pre-knowledge about this issue, crowded with technical and legal terms (glossary). So they do not have "professional support" by which they would educate the public. Both are informed via the Internet 43 on their own initiative on the portal of RTS and other media outlets. Recently, Irina Reljin, Assistant for Telecommunications at the Ministry of Culture and Information, said that by the end of the month (July, 2012) all would have been prepared and that the informing would begin: I can not say the exact deadline, but it will be fast enough to give our viewers time to be informed.44

Although the date of complete transition from analogue to digital television is not yet known, in technical goods retailers televisions have emerged that support digital signals, which will be broadcasted in Serbia. Public Enterprise "Broadcasting Equipment and Communications" is already testing such devices. Cable television users do not have to worry about it, but only those who receive a TV signal via the antenna.

The very fact that a small percentage of people knows what it is, it takes a special effort to explain to them what the DVB-T2 standard is. When the buyer comes to the store, is mostly price-oriented and looking to go as cheap as possible. But when it is explained in detail what the DVB-T2 is and that they will have to pass on it, probably by the end of the year, then they think about it and are willing to accept a small difference in price. - says Nebojša Radojevic a seller in the "Vin Vin".45

Since most of the existing TV sets in Serbia has no built tuner for digital system, it is possible to connect an external device that decodes the digital signal, or special plug-in for admission to the PC. Here is how experts 46 explain Signal reception can be done through:

a) the TV set with built-in digital tuner (LCD, Plasma), should be checked when purchasing for having the DVB-T (for retailers each LCD or Plasma TV with remote control is a "digital" one!); every screen would have to have the labels with information on which signals does the TV set recognize and on whether it will be able to watch a new digital television by it;

b) external converter (set top box) - STB; simply connected between the antenna and the existing TV set (no need to buy a new one);

c) External or internal card for PC (Stick) that plugs into the USB port on the computer (no TV set is needed).

6. INTERACTIVITY AS AN ILLUSION

Digital television system in the world is a relatively new technology as well. Organized and well-ordered societies have quickly made that connection, because the viewers have embraced the opportunity to take a variety of television services available: translations of all TV contents, more information about the shows, skipping commercials, recording shows and watching them subsequently (creating your own program schedule), audio channels; web surfing, shopping from home. Hearing impaired persons have constant interpretation.

With digitalization numerous offers are coming, which are teamed with sophisticated technical capacities of broadcasters and reception at the users, on the other hand. Special attention in our case (referring to television journalists as creators of TV content) attract oft-repeated sentences of the type: digitalization provides the ability to customize content to the needs of different target groups, interactivity, and the ability to provide services as requested. Therat stated as the forms of interactivity and communication: communicating with the service provider (TV provider), choosing the content, services that enables the viewer to communicate, i.e. not only to receive signals, but also to send them (a video on demand, home shopping and home banking, e-mail, search, and even learning via interactive television). "A major leap forward in the process of interactive communication and learning has been brought by the technological possibility of combining television and the Internet. This possibility has radically changed both media. Merging of the Internet and TV points to digital television broadcast and other audio and video services over broadband networks using the same protocols on which the Internet is based."47

42 Dubravka Velić Nedeljković i Karlo Bala How much do those who should promote the digitalization of TV broadcasting know about it, University of Novi Sad, Faculty of Philosophy – Department of Media studies, Novi Sad. https://docs.google.com/scidocs/clanci.ceon.rs/data/pdf/2012/
3 portal RTS-a: www.rts.rs; e-mail address of the editorial office for the viewers’ questions: rtsdigital@rts.rs
45 Ibid.
o Are we thinking about the same thing?

Interactivity, as a concept, in social psychology indicates the mutual behavior of two or more persons for the purpose of communication. The concept of interaction and interactivity is a very broad topic that has been discussed numerous times. "It is generally assumed that the computer can be regarded as a machine which is in itself interactive. Given that this text refers primarily to the specific type of media, such as moving images or time-based media, interactivity in this text refers to the time line of film that is television media." From previous qualifications of digital television, we see that the possibility of the user interacting with the service provider, choosing different contents is emphasized. It's not a two-way communication in the true sense of the word.

It is only about the consummating manipulation by selection and temporary different schedule of packed AV content, according to personal needs of viewers. Interaction of modern man is the de facto structured according to the standards imposed by television. This opens up the question of the kind of psychological process of communication with the small screen. In addition to already existing forms of identification and projection (which we had in the encounter with the film medium), television viewer falls into the trap of mediated intimization, in the process that is constantly, repeatedly renewed. But very rarely viewers really have the interaction with presenters or other TV content creators. This communication is achieved by inclusion in telephone contact program, where there is that almighty button to end the call as soon as you start making statements that are not very desirable (Impression of the week, B92, the presenter Olja Beckovic).

The nature of the media, the small screen format, the incidence of selected persons, entrance of the public in a big way in the small warm home - creates the illusion of a recognizable friend, the illusion of presence and participation in the mutual and public life. The experts explain that the illusion of superiority over the small heroes, that we come on pilgrimage to us, is realized because we ourselves choose the frames of our awareness, attendance and participation. The moment when the family chooses a different face (another content), television is being driven out of their targeted place and the only hiding out.

With the position of being present in every home, of speaking to the audience in the surroundings, television is experienced as a part of personal and family life. Just as listening to the radio everyone thinks that he/she is the person that the host is addressing to, TV viewers also believe that the program is created just for them (common phrase "because you asked for it"). Consumer awareness is experiencing it that way, but basically television has done nothing special with the individual – it has just changed the focus, placing it at the center of its direct transmission. As the in the circus tent, we constantly observe someone's reality show.

The closest services of interactive television develop within the entertainment television formats, of type Interactive game show or blitz quizzes (again short phone call-in). Viewers socialize via the Internet while watching the program. It will very likely become the reality of television, no matter what we think of it.

"The experts from the media industry gathered to discuss the effects of "dual-screen" watching, as well as the issues of improving the competitiveness of television in the electronic media market run. Interactive television show programs are just seen as a potential means for attracting new audience. For example, The Million Pound Drop, a program hosted by Davina McCall, was one of the first programs to popularize the concept of interactive TV quiz shows.

There remains just a question of program commerciality. In fact, most companies charge the services to a viewer, while some do not. This gap can be overcome only in the way that someone will be forced to change the habits: It will be either the viewers or the companies. Mark Cullen from ETV Media Group believes that the companies should be changing the habits. Whereas Peter Bazalget, the President of the Royal Television Society, points out that growth in demand for the programs on request witnesses the change of viewers’ viewpoints in relation to television and that the pace must be kept with the new challenges.

This confirms that the whole of the outside world, for the man at the beginning of the third millennium, has become an abstraction filtered through television. Television is changing real world by the images of obscenity and illusions, which are difficult to separate from reality, because they seems so real. It wins the world degrading it; deform the truth and manipulating public opinion. It definitely assumed an important role in social life, and thus the benefits of digitalization are accepted in a desired and insufficiently critical manner - both by viewers and the creators of the TV content.

7. CONCLUSION

As a medium of very complex technology, television requires long training of journalists and other members of the team work. In this paper, we relied on two surveys which substantiated the hypotheses about knowledge of television journalists regarding digital media technologies and social-educational changes.

- How much do those who should promote the digitalization of TV broadcasts know about it?


The journalists of RTV Vojvodina on digitalization

The results of these studies showed a worrying lack of knowledge and lack of interest in new technologies, but also a certain lack of understanding of the context (or perhaps of the interviewer) on the knowledge of techniques which has been operated with for years (the question Since when does your media produce by using digital technology?). Trying to find the reasons and offer an explanation for this situation, we presented adequate theoretical and technical explanations, concerning the nature of television (film) opinion, and ways of realization based on new media technologies. Digitalization as a universal process of TV media transformation, lack of education and training of journalists, and therefore the absence of public campaign has provided the opportunity to analyze social (in)opportunities in this field: building permits, construction, ownership relations and the state of the transmitter.

Television journalists possess an especially powerful tool in their hands, and that is "a live image". Television as a "warmth medium" with the mass audience, can contribute quite a lot to the social art of persuasion: to form one’s opinion and taste, to nurture the culture, ethics, moderation. Mass education through the small screen has provided to be necessary and expedient in many cases:

- ss an impetus to social progress,
- to reduce social tensions,
- in explaining the political and economic complexities,
- for the purpose of confronting crime, terror and nuclear cataclysm.

It is therefore unacceptable that timely education of professionals of currently the most influential electronic media is missing.

On the other hand, the EU has provided financial support to Serbia with 14 million Euros - to implement the process of digitalization of radio and television. Out of that amount, eight million have been allocated for the purchase of equipment and training for 2.5 million people in Serbia who will work on the digitalization. All this suggests that it is a process of global proportions, because the world is a "global village," as Marshall McLuhan once wrote.

In the context of general globalization and profiling of society that is developing according to the models of the techno world, two projections of "civilization development" have been created. One which predicts that the new world community based on cyber communications will be more advanced than any real society according to the democracy and freedom of thinking. The other says that everything will be just an illusion and staged communication of individuals representing themselves completely imaginary. In any case, the original innocence, purity/truth of the human race is lost forever.

Writing contemporary history brings to the electronic tools a fantastic power. The power of these communication media that can not be exhausted on conceptual nor ideological grounds, but in all this there is a pressing need for communication between people. To connect, exchange messages, comment, blogs, visual displays, photographs. The need which encourages in the pursuit of the mutual transmitting and receiving, of creation, exchange, by presenting or converting in the manner that "you are somebody else."

After all, the global economic crisis, from the beginning of the third millennium, has brought the degradation of economic power in all branches of human activity, with the exception of communication. Only the media of mass communication are developing in an unabated progression, including the Internet and mobile telephony.

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**Portal “Na dlanu”**


Valić Nedeljković D., Journalist of TV RTV on Digitalization: Knowledge, Education, Media, Proceedings of Scientific-Research Interdisciplinary Project Digital Media Tehnologies and Social-Educational changes, Faculty of Managment, Novi Sad 2011, str.163-172. 06.08.2012.

**Illustracija** za chroma-key, izvor Wikipedija: http://en.wikipedia.org/wiki/File:GreenscreenCompare.png; poseta sajtu 02.08.2012.


Abstract: This appendix does not claim to represent the scientific concept of media pedagogy for what is needed much more detailed analysis. The aim is to develop the starting point in which center are media messages that can be understood as text. It is particularly important concept of "literacy" that on one hand has a positive connotation, but on the other, in its original meaning, is too narrow and refers to the linguistic context. "Cultural Studies" in their analysis can demonstrate the fertility of the expanded notion of text that overcomes the rivalry of language and images and that in the literary culture finds creativity and imagination that are present on the adoption of texts.

Acting in a semiological structured reality, excludes in its consistency, simple pedagogical solutions. It is always difficult to determine, on the basis of said, an initial non-media reality as primary experience. This, at first untouched world of primary experience, is in fact constituted semiological world that can be deciphered in its codes.

We assume that for media education is necessary a determined educational activity so that the media knowledge and skills, which were randomly acquired in everyday life, could systematize and supplement. It is, on one hand, about creating an understanding of how and under what rules data will be generated which includes knowledge of computer science. Whenever it comes to issues where data become information and how the meaning is attributed to them and how they pass to the practical knowledge, we are moving in the direction of "semantics" or "pragmatics" of media education. There also will be made questions about media messages, construction of semantics of media education which specifically continues to the discussion of the "expanded concept of text" as well as to works on the theme "Cultural Studies".

Keywords: media education, media pedagogy, Cultural Studies, semantics and pragmatics of media education

INTRODUCTION
Media competence and media education

Media competence can be acquired by learning, transfer, mediation process (at home, in courses or through academic classes, etc.). Formatting certain standards could demonstrate what students should learn at a certain level of media competence (use and design of media products, exchange and transfer of media information, media criticism and reflection). Many media competences are acquired in extracurricular everyday life, and for that there isn’t direct educational and school intervention of teaching.

However, we assume that for media education is necessary a determined educational activity so that the media knowledge and skills, which were randomly acquired in everyday life, could be systematized and supplemented. While the work of entertainment (chat, games, etc.) does not require an explicit media education, it is necessary, where the media are used as working instruments - such as in using office, with presentations and video clips, etc. in this regard, there are just some of the students who have such experiences.

To describe the task of media education, the process of creating media messages should be presented in three phases:

1. The data arise principally through digital media; they are the basis of different knowledge. With this is associated technical tool - I have to deal with the devices in the programs and I have to know how to use the internet.
2. Data becomes information only when it is associated with meaningful units. Using a code of interpretation is necessary in order to understand the media messages.
3. Information is becoming a part of knowledge when used as intended so when integrated into my repertoire of action (Willke 2005: 28).

It is, on one hand, about creating an understanding of how and under what rules data will be generated. At the same time it is about the knowledge of computer science and...
navigation programs, network usage and use of devices, etc. Whenever it comes to issues where data becomes information, that is, how the meaning is attributed to them and how they pass to the practical knowledge, we are moving in the direction of "semantics" or "pragmatics" of media education. Furthermore we will ask questions for the sake of the constitution of the meaning of media messages, so, in order to build the semantics of media education. This making question is particularly linked with the discussion about the "expanded concept of text" and also with works on the theme "Cultural Studies".

Media education and the concept of Cultural Studies

In the literature there is often a question whether the movies and television shows can be "read" but not like writing and reading in the organized learning process. Merely consuming of media would distinguish in this perspective from the conscious understanding of media messages. In fact, it is about a need for more detailed analysis of the concept of media literacy. It becomes clear that the analogy for the introduction of a written language in one view is based on various conditions: reading texts necessarily requires knowledge of certain linguistic signs and with them, associated linguistic rules, while access to images seems unconditional. Postman (1983) states that "simple" watching of television can oppose to the literary tradition, which must be slowly and laboriously gained. In this regard literacy is not necessary in order to understand television programs, video and cinema films etc.

However, entering a world of images is not as trivial as it seems at first glance. It becomes clear for example when we compare adults and children who watch video clips, and while the elders have trouble following the plot and find the meaning of the whole, young people have a far more autonomously access. This is because the language (words) has a system of meaning. According to Doelkeru (1997: 58) the meaning of words can be viewed in the dictionary, while for the images does not exist any dictionary. The meaning of the image is open, polysemic ambiguous. Deciphering of conventions and codes of the pictures is more complicated than it seems, the space of interpretation is larger than the interpretation of language texts. When it comes to deciphering the elements on which they conceptualize images and movies (decipherment of codes) it can be spoken about "literacy". It is less related to direct reception of audio-visual messages and their further processing.

The worlds of images with which people live are no more understood as a foreign object, but as part of a specific culture to which the individual belongs. It is about, for example, the production of decoding of media events about how the "world" is designed or which are specific cultural features of expression associated with the media. In doing so, it raises important questions: by what means and for what purposes is something stated, which are the specific possibilities and limitations of the media? With the imaging media there can be a problem, because people are unilaterally prepared for the systems of digital characters. There is a danger of naive reception and therefore the possibility for manipulation opens. "We can understand the media pedagogy as an extension of the literacy task towards the media literacy, towards the media competence" (Doelker 1992: 110).

The range of semiological approach to the media pedagogy can be built on the definition of Doelker: "All verbal statements on the radio and television can be viewed as text. When we start from the basic etymological meaning for example of tissue, the network and connection we can transfer them to the image because the television coverage does not consist only of words but of images and sounds which are brought into relation ")(Doelker 1989: 23).

In recent years, this semiological way of looking at texts has especially interested "cultural studies" which has led to the elaborated concepts that has made a huge echo in the science of media (Heppe 2004). This approach, starting from Center for Contemporary Cultural Studies in Birmingham, had won Anglo-American space for the last thirty years and had also let the roots in a European-speaking world. For media pedagogy building on the "cultural studies" is significant for three reasons:

- Access of such studies corresponds to the change of the paradigm of media pedagogy that had surpassed sensation-reaction model in recent decades. Such a different concept of social construction and mastering of texts means that readers and recipients are not just simple objects and victims of the media as it is still claimed in simplified theorems. Apparently the media do not operate as simple as undifferentiated feelings on recipients, but they as "active readers" (Chandler 1995) are creating meanings when trying to understand a text. How it came to such interpretations can be shown and empirically investigated using the semiological concept of cultural studies.

- An extended concept of text allows for complex arrangements of language, images and symbols to be understood as text. Thus, the moving images of film in combination with the statements of actors and actions, which are determined by the director, can be interpreted as a textual whole. Likewise, the social situations, such as, children's room, rock concert, Disneyland, etc., can be interpreted as "media texts", they are not a natural environment, but they are constituted by readers and add to them meanings which depend on their experience and that can be obtained from the media.

Such social situations often help for something to be found out about self-understanding of the person who participates in it. Interpretative activity is the process of self-conviction and self-realization, which is closely connected with everyday constructions of identity. Each interpretation of a sign, according to James Lull, is also the interpretation and transformation of oneself: "The girl who thinks about phenomenon of Canadian rock music Alanis Morisette is projecting it also to herself ... Because of this all semiotic activities consist of the complex associations that flow back and forth between the external and internal worlds" (Lull 2000: 218). People choose and
combine medial representations and other symbolic cultural forms in their everyday interactions; allow for the meanings to circulate and eventually set them by themselves and take them over. A hairstyle, the walk, a specific expression, clothing ... not only are all these "read", but also had been integrated into their own concept as a stylish element.

Generally speaking, a term of text has expanded from the ensemble of verbal and pictorial language that is from audio-visual texts to the social events. The analytical instruments, which are applied to the text, can be used for research that deals with cultural form of expression as a form of text, in terms of symbolical associated metalanguage (metatext) (Bachmair, Kress 1996). Thus, for example, events on television, such as street parade of techno fans or wrestling, can be viewed as a complex form of one media text (Moser 1999). With this understanding of complex “media texts” the study of media can react to the social development. In the background is located estetization of everyday life as an outflow of individualization of modern society, where the sides of cultural object and subject are not connected through the media.

- The social texts that are written about the importance of the media world define media pedagogical task: mere consumption of the media does not mean that the semiological codes or semiotic structure of media events are consciously perceived. Only automatic relationship with media events can be learned, structure, rules of selecting are more difficult to be consciously perceived as a relation toward oneself and thereby activated associations.

The interest for the codes leads media pedagogical view towards the contents or to their presentations. It is important to sharpen the view for the complex texts which connect different, sometimes contradictory and ironic codes, as well as for the moving images. Ability to analyze the formal principle allows a differentiated vision that isn’t left to a stream of files, but increasingly takes into account the reflective starting point.

**Codes of images and texts**

From now on will be concretized a program which is sketched from the semiotic perspective of cultural studies. Will be displayed the basic principles of analysis of complex texts, from text of the manuscript to the media multilateral texts.

With nineties author Doelker tried to include a constitution of meanings of audio-visual communication, which is reflected in the distinction between the three realities.

1) W1: "Primary" reality that surrounds us and which our senses can perceive.
2) W2: Shows on television in the form of images and sound, or in books and newspapers.
3) W3: The reality created by the perception of viewers, listeners and readers.

Doelker comments: "The step from the first to the second reality is called mapping, and the second stage, from the second to the third reality, is the media perception, The line from the first to the third reality describes the path of the current case in the primary reality till his identification in the individual viewer's brain "(Doelker 1989: 66).

This Doelker’s model comes from the problematic meaning of "primary" reality. People face today numerous phenomena of "primarily" through the latter reality which somehow becomes the first. Much of our knowledge is taken from television, books, the Internet and not from our own experience. For example, if the first reality is not available, then people tend to reconstruct it from "secondary" media experience.

In this regard one must take into account that the status of primary reality is no longer intact, but one designed and with semiological meanings filled reality. This "semiloginized" primary reality in its reconstruction with the other elements of reality merges with what we now call "hyper reality" or "social text." However, this is not what the theory of society experience indicates, therefore enriching of the world with aesthetic quality of experience.

In the end, texts do not display a given reality, but represent the social construction of reality, which occurs only when the meanings are added to what is reality for us. Cultural studies here make a decisive step when they say that the reception of text does not consist simply of
taking or seeking a given point, but recipients themselves
determine its reception. Viewers create texts only in the
adoption process. Therefore, the meaning of the text is

Stuart Hall in relation to the "discourse on television" has
developed a model of encoding/decoding:

![Diagram](Image 2: The model of encoding/decoding (Hall 1999: 97)

Editors first prepare a specific event, for example, "a real"
social event for the discourse on television. At this time
of circulation, there are certain forms, how the world is seen
and estimated, "dominants" as an ideologies. In other
words, a media production belongs to the meanings and
ideas (encoding). At the same time, a meaning and a
message get into a full meaning discourse: the message is
open to polysemy. In the scheme is therefore emphasized
the role of recipients that decode the meanings, in this
case in the form of ideology.

- **Social semiotics**: opposed to traditional semiotic
  models which establish a relation from objects to
  reflections representatives of Cultural Studies
  emphasize a social constitution of meaning. Social
  semiotics assumes that meanings are socially
  conditioned; meanings are related to the social world
  that has a material base and thus the resulting
  consequences (Ferguson 2004). For many citizens of
  Switzerland, today, for example, a non-problematic
  symbol of the country is connected to the Swiss flag.
  This is not always like this: while the Second World
  War the Swiss cross was a symbol of independence,
  for the generation born in 68th it was a sign of
  obsolete patriotism. Swiss flag to this day has a
different meaning for the right-wing parties and
members of leftist groups. Sometimes the flag is not
brought into connection with no political statements –
  e.g. when tourists wear a red shirt with the Swiss
  cross or buy one of the famous Swiss pocket knives,
where the cross can be seen more as a symbol for "Swiss quality": Moving of meaning which is in this example described is closely related to a various social and historical contexts and discourses that are related to them. They are not, as Ferguson (2004: 31) states, mere language games, but deal with the harsh reality within a material world.

- Polysemy: it means that the meanings and texts can be interpreted in different ways, therefore providing the ability to read in different ways. The moment of polysemy is the one that essentially provides openness and flexibility to a discourse.

- This was especially set at the core of thinking by Fiske (1987), where he assumes that one medial text contains a potential of heterogeneous meanings: "it can be characterized by the state of tension between forces of closure that suppress the ambiguity in favor of one dominant meaning and the power of opening that enables a large number of viewers to adopt the text which is practically relevant for them "(Winter 1995: 66). This means that the adoption of the text does not consist simply of taking of given meanings, but it is a "dialogue between text and social situated reader" (Fiske 1987: 66).

Texts of popular cultures such as television series, the show plays, rock concerts, etc. which are often inherently contradictory: on the one hand they suit the needs and strategies, codes of industry communication, which for example, bring television series, often with transparent strategies, codes of industry communication, which for the actors up to the staff in charge of the technique. There is no more connected performance, but production time, which stretches for several months thereby some scenes only at the end are brought into a connection. And spectators themselves who watch the film on television get the illusion of a compact whole, which corresponds to the theater visit.

In the meantime, the audience has been developed into a "diffuse" audience: "The essential mark of the spectator experience is that in today's society everyone becomes a spectator all the time. To be a member of the audience is no longer an exception but it is an everyday event. In fact it characterizes everyday life ",(Abercrombie/Longhurst 1998: 68). This new form of audience is diffusive because it begins to delete the established roles of actors and spectators. This development can be seen on the example of television and the mass audience, where a growing number of new actors represent producers and spectators. This refers to the participants of various castings, talk shows, the Big Brother... They belong, on one hand, to the category of audience from which they originate as "non-professionals." But on the other hand they appear as actors in the TV shows and in this way belong to the category of production. In the best sense they are individuals that at the same time are becoming professionals, for example in the show "I have talent," individuals present themselves for example as a musician. In that way they try to find a future in this business.

In our everyday lives, we become more and more actors who represent ourselves for the audience. When we visit e.g. one of the big department stores we can imagine a scenario for our performance which has the climax in shopping experience. It seems as if all this is just for us. In respect to this today's society has become "performative society" in which we present ourselves in front of an audience every day. Life consists of solo performances on the
experiences and Events; we live in a "society of experiences" ("Erlebnisgesellschaft"). In the center is a spectacle: objects, events, people that educate the world, they appear in order to present something for those who observe or watch. But in reality it is ourselves who construct the world as the Event and performance.

For this performative society media can be a model and also its important part. In this way, for example, can’t be demonstrated just like that for 1 May, but it may be that this demonstration is the stage on which the individual may appear as an actor. For the participants of one Street parade there is nothing worse than when you do not speak about them in the newspapers and on local television (media report) and this daily staging, finally, is nothing more than an expression of the performative society (Bachmair 1996).

In the works of Cultural Studies it is often overestimated the openness of texts. In their concepts very quickly disappear intentions of media producers due to (productive) interpretations of readers. Media messages in the society of the spectacle are just another material (material) that recipients can use in order to make a role of actors for themselves. Annie McRobbie studied a magazine for teenagers, "Jackie" as a messaging system, a system of meaning, that is, a system of productive ideology, especially an ideology that constructs behavior (attitude) of teenage girls. The journal follows the girls on their way to their adulthood and describes what is expected from a successful women's behavior. Whoever reads "Jackie" assumes the dominant rules in the female role that has a right to leisure and consumption. McRobbie said, in connection with these, four strategies or subcodes that "Jackie" is using:

- Code of romantic relationship,
- Code of private life,
- Code of fashion and beauty,
- Code of pop music (Moser 2006).

A code of romantic relationships pervades the entire magazine.

"Jackie" functioned then for girls that were growing up like an orientation and she restricted the role of women on certain models. Through the contents of the magazine girls were told how to behave and what is expected of them.

It was only a social development of women, that is, self-recognition has caused that the magazines for girls must be adapted. McRobbie greets worn out popularity of this magazine and similar to it as well as new products such as "Just Seventeen", for female teenagers, which besides emphasizing of a fashion, pop music, deal with some feminist ideas and attitudes. A romantic relationship is in "Just Seventeen" absent category. There is love and sex and of course boys, but a specific pattern of romantic relationships had, according to McRobbie, disappeared with a reason (Moser 2006).

**Semiological model of text comprehension**

So far we have tried to formulate general principles and thinking as a framework of a media and scientific understanding of the text, where we have specifically built on the semiotic work within the "Cultural Studies". In the media and in everyday situations, the symbolic material is being accumulated for complex textual arrangements that can be interpreted with textual-analytical means of social semiotics.

This starting point we shall concretize, with an introduction to the analytical tools required, with substantial reliance on "Tools" for "Cultural Studies", on what Thwaites (1994) described. From the starting point, that culture is encompassed by the ensemble of the social processes through which the meanings are created, exchanged, and circulate, the ways to semiotic analysis of the text will be shown. In addition, this starting point clearly shows that it is about dynamic exchange processes: Culture is not seen as something stable and eternal, but as a place where meanings arise and which are not shared by themselves. In the center, therefore, are "cultural marks of activities" (Moser 2006).

For a description of the social production of meanings, authors refer to a sign model that continues to develop relying on the linguist Roman Jacobson. There are following functions of a mark (Figure 3):

Some elements of this model can be defined as follows:

1. **Symbol**: Under the symbol Thwaites it is included "everything that produces meaning." With this very broad definition it should be shown that the symbols are not just a commentary on the world, but these are the things in this world (especially in the social world). The symbols do not carry only meanings, but they produce them (Thwaites, 1994: 7).

   Generally speaking, signs are emerging like a starting point of our reception of the world, not like things-in-themselves.
2. **Contents**: The symbols are related to things in the world that represent; they represent that, for what they stand as a reality. A referential function refers to the way, that is, to the way how it invokes the content.

<table>
<thead>
<tr>
<th>Functions of symbolic character</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referential (content)</td>
</tr>
<tr>
<td>Metalinguial (code)</td>
</tr>
<tr>
<td>Formal (form)</td>
</tr>
</tbody>
</table>

![Diagram of addressing functions](image)

3. **Codes**: A metalingual function refers to the codes through which the characters can be understood. This means that the symbols indicate the codes, in which they are located, even before you start with reading. An example for that are genre texts as a letter, an advertisement, a song, etc. But, even dressing code and musical styles can affect the social codes, in the way of including or excluding certain symbols: Who, for example, wears jeans will not wear a monkey suit over it in the same time.

4. **Format**: Thwaites (1994: 12) with this indicates the formal framework of the text (in a letter e.g. the place where it is written the date and address, greeting and signature). This is about the formal aspects of the text, videlicet how something is said, not what is said. Thereby a formal function (layout) can also take over metalingual functions whereby clearly indicates the type or genre of a document. This applies not only to a written texts, visual texts can also have determined format, e.g. photo portraits, for which success are assigned special features on the camera.

5. **Addressing**: Addressing is involved in each activity of symbols, in such a way that this symbol refers to somebody; who may not have much in common with the actual sender and recipient. It is similar with Adressierende function. Example:

28.5.2009
Dear Lana,
I am sending you my best regards from my vacation in Italy. I am well and enjoying stress free.
Your dad

This short letter was apparently addressed to the sender's daughter. However, not only to her; because, at the same time, the readers of this paper are the actual recipients of the text (perhaps Lana does not exist at all, and letter is made only in the didactic purpose of this paper). Here should be differentiated:

- Adressierende (sender), whose position is constructed with a text (as a source) versus a sender as a current source.
- Adressat (recipient), of one text as a position for which is determined versus recipient's current regulations.

A sender and recipient are real people while Adressierende and Adressat, are constructed through the text (in terms of expressive and connotative function of a symbol). Adressats are fictional persons (sender): The role of an actor in some series does not need to have similarities with the person who acts. This aspect
is exactly present in everyday aesthetic field: A young man who blatantly prepares himself for a techno party constructs himself in this way as an Adressierender and that by this he does not need to have an appropriate text arrangement.

The complexity of the relationships specified here demonstrates an example of a column like the one in the "Bravo" magazine: Adressierender is Dr. Sommer, but in reality it is the whole team behind it. At the same time the magazine constructs a quite specific image of the youngsters. Can the recipients of this message identify with that picture, it is quite another question (that has to interest publishers, as they come in a risk of losing readers). And the latest example: on the internet, by the anonymous forms (MUDs, chat-rooms, mailing lists) can be very well monitored, the way of constructing Adressierende and Adressaten in the communication process (when e.g. must be stated user profile in chat).

6. **Contact:** It's not about differing of the positions of Adressierende and Adressat; quite often, signs are settling down relations between them.

7. **Context:** Until now, following functions are not independent of each other: they interlace, work together or one against each other while they stand in an overall contextual framework. The social situation in which one character is accommodated, determines the content, type of symbol and encoding, the construction of Adressierende and Adressat as well as clustering that occurs in this way.

Certain symbols, however, can’t be observed separately, they are related to systems, such as on language systems. Thwaites (1994: 25) relies his semiological approach on structuralistic papers such as we can encounter in the linguistic tradition. He explains the difference between "signifiant" and "signifiée" of Saussure. One symbol can’t get its meaning by itself, but it develops with a system of differences and somewhat less with identities. It is generally known that one symbol can take on more meanings. What meaning it will be depends on the code and subsystem in which circles the meaning is used. In Western culture, for example "white" is a color of purity and is worn at weddings, while in China symbolizes mourning and is worn at funerals.

Let’s observe a system of meaning a little bit closer. Language is clearly arranged when connects its elements on defined way within a grammar.

Formally, there are two different characters of the system, a paradigmatic and a syntagmatic. In the first, elements are selected, but in the second elements are combined with each other with certain rules.

- A paradigm is a set of symbols each of which is replaceable in a particular context.
- A syntagm is a regulated sequence of symbols that are linked by certain rules.

Elements of the same paradigm can be changed in a certain syntagmatic context. "Children belong to a family" means the same as a paradigm "Parents belong to a family." But that do not include "Cat belongs to the family" when the evidence is observed genealogically. However, if you change the paradigm ("The family includes all living creatures that live in our house"), then this sentence can still be valid.

From this attempt, to generally describe semiotical systems, follows the following scheme:

<table>
<thead>
<tr>
<th>The elements of paradigm</th>
<th>+ rules</th>
<th>= syntagm</th>
</tr>
</thead>
<tbody>
<tr>
<td>words</td>
<td>grammar</td>
<td>language</td>
</tr>
<tr>
<td>appendix</td>
<td>recipe</td>
<td>meal</td>
</tr>
<tr>
<td>clothes</td>
<td>dressing code</td>
<td>complete appearance</td>
</tr>
<tr>
<td>meals on menu</td>
<td>serving order</td>
<td>sequence of food</td>
</tr>
<tr>
<td>deck of cards</td>
<td>rules of the game</td>
<td>course of the game</td>
</tr>
<tr>
<td>TV programs</td>
<td>program schedule</td>
<td>television evening</td>
</tr>
</tbody>
</table>

The symbols do not stand for themselves, but it is a combination of characters that becomes a text. In this way symbols can be simultaneously connected into more codes so they can be linked in complex relationships and be interchangeable within the paradigmatic relations and syntagmatic sequences. In relation to this, there should be emphasized the organizational principles that form the textual hyper structures:

- **Hypertexts** under which the various texts are put together into one whole text: a body which is stylized by the dress code and behavior into one daily aesthetic ensemble.

- **The metaphors** are the most common form of how a single symbol by comparison can be substituted with the other. They can, thereby, be verbal or visual, such as e.g. represents a photo montage in the newspapers "Zeit" (June 29, 2006) which shows a plate of pasta in which is a soccer ball along with banknotes. This picture shows the former soccer scandal in Italy. The metaphors are often used in commercials.

- **The metonymies** appear when one symbol is connected to another so that it replaces only one part, the whole or one function or attribute. In that way image of the crown symbolizes the kingdom, and a famous star represents Mercedes. The metonymies can be often met on television,
for example, when the image of a plane represents war in Yugoslavia.

**Intertextuality:** often texts further imply texts and thus making the game of meaning. Examples for this are:

- Movies about Harry Potter - which point further into the novels. One boy comments: "The complete film can be enjoyable only if you know the books."
- TV commercial, which puts the product together with classical music into a certain context.
- Press article that implicitly requires a knowledge of the events presented on the news, which interested readers had already needed to read in order to understand it.

Intertextual play of meanings need not be referred to the presence of symbols. It is for example the case with the following report:

Lisa Marie Presley, 30 years old, wants the body of her father 22 years after his death to be excavated. King needs a quiet place to find peace. "Graceland is like a market place," complained heiress shortly. Elvis's wish was to avoid the circus, Lisa Marie is convinced.

The main person of this short report is actually absent (dead for 22 years), while his daughter is still present. The text consists of a series of hints. The question of which Elvis is word about can be understood only if you know the tabloid media. The words "King" and "Graceland" suggest that the reader had to study intensively on Elvis Presley's fate, and thus can easily understand the meaning of the text.

We have explained the most important parts of semiotic analysis in the framework of Cultural Studies. So far there has been little word on social semiotics, which has not regulated the meanings as static and by the nature given, but it has been already involved into social dynamics.

**The struggle over the meaning in the social space**

Thwaites (1994) summarizes described processes of textual analysis in the following way:

1. The basic premise of textual analysis is that all significants have more significant possibilities.

2. The connotations of symbols always refer to the codes of social values and meanings (a code represents the set of values and meanings assigned by users - producers and readers of one text).

3. Each text is a syntagmatic combination of symbols with connotations that relate to it. For this reason the texts are related to social codes.

4. Highlighted connotations that come from different readers depend mostly on their social position, i.e. of class, gender, age and other factors that influence thinking and interpretation of one text.

5. Social connotations become denotations, which become the meaning of public symbols for the reader.

6. Denotations represent cultural myths, beliefs and opinions that readers of an article accept like a real and natural "(Thwaites 1994: 75).

This includes for example, brand awareness that is characteristic for the children: Sneakers have a number of meanings. They may look good visually, promise comfort and match in color and form with the entire outfit. But apparently only one counts: real sneakers must be Nike (or Addidas), which is the symbol of real sneakers.

Here we move onto the terrain on which occurs a struggle over the symbolic meanings because reading of texts has connotative places for playing that can be used by different socio readers for their own purposes. In that way Thwaites differs, in the range of Cultural Studies, (1994: 84) a following types of reading:

1. **A dominant or primary method** of reading in which readers reproduce a valid meaning of family, politics, and good taste.

2. **A negotiative way** of reading in which readers put some of specific connotations and codes of the texts into question, but in principle, they accept the myths contained in the text.

3. **Oppositional ways** of reading that cause dominant myths, sometimes also provocative. It is precisely popular cultural forms such as carnivals, parades, provocation of youth culture and the like, that often try to provoke in this way, socially recognized meanings of middle classes.

The aspects of social power are in relation to this, whereby, the power of determination of symbolic territories can be disputed under the oppositional way of reading. Youngsters suddenly adopt particular linguistic terms, trying to distinct from the older ones and in this way develop, in distinctive terms, their own language of youth. It is seen as provocative by elders, because they feel that generation of young people has excluded them. How hard is it for the semiotic field to be always filled shows a fact that the terms of speech of young people are often moved into everyday speech ("cool").

Similar goes for an example of jeans. In the fifties, these pants have had an image of something challenging and provocative - as a part of the clothes of the American working class who wished to distance themselves from the traditional dress code. However, this effect weakened as soon as the "normal people" began to wear jeans. So they began to wear as a mark of separation, old, faded
jeans, while this mode wasn’t production "normalized". Other possibility, as a protest against the "decent clothes", was to cut out jeans, which only led to an offer of similar products of the boutiques.

**About the complexity of medial communication**

In this paper is not about a detailed development and process of media-scientific concept of media education. The aim is to develop starting points in which center will be media messages that can be understood as a text. At the same time is particularly important concept of "literacy" that on one side has a positive connotation, and on the other in its original meaning is too narrow and refers to the linguistic context - and in doing so, limits the "rich" literary products from superficiality of images.

It is precisely that the Cultural Studies can demonstrate in its analyses the fertility of the expanded textual concept which goes beyond the rivalry between language and images, and which finds attributed creativity and imagination with the adoption of texts, not only in in the literary culture, but also in dealing with popular culture.

Handling with a single semiologically structured reality forbids in its consistency simple pedagogical solutions. In any case, it is difficult to determine an initial non-media reality as primary experience based on something said. This, at first sight untouched world of primary experiences, is in fact semiologically constituted world that can be deciphered also with its own codes.

For the media pedagogical work are important following things:

- **Media pedagogy may draw attention on the processes of identity and a specific form of media encoding.** It can show how children and adults take elements from the media and consumer offer and how they use them for shaping their own identity. At the same it must be taken into account different forms of reading (e.g. when young people take over a musical style in order to provoke parents and adults).

- **It is essential that such considerations are not introduced abstractly, but as a debate with itself and own personal constructs.** Because while watching soap operas and other family series spectators are confronted with their own identities. Spectator can, in this way, identify with personalities or draw a clear distinction between him and the individual scenes, episodes and personalities. The stories from books, films, series, and comic books allow the reflection of their own biographical experiences (Mikos 2004: 162).

- **In relation to this, shall be mentioned how media events affect people, what make them attractive.** It is how can be explained why certain channels were looked in specific period of time and in certain phase of development.

- **Critically a reflection of media events can be associated with the myths of everyday life, and thereby can be shown what happen with the symbols when they become media messages. This can be seen, also, as a manipulation, when hidden motives are detected (as in the case of the media presentations of the war in Iraq).**

- **Like an introduction to the semiologically oriented media education, also can be suitable media work which is oriented towards projects, like one that was described by Schnoor (1992) relying on the media semiotics, stating five aspects:**
  - An identification of symbol-character of the images, in order to help children to understand better a relation problem of objects and symbols.
  - Linguistic film analysis.
  - Lingual and stage structure of the film which limits the possibilities of interpretation and points the viewer to a certain things. Schnoor calls particular attention on the paradigms of the film.
  - Compositional image which is considered as a necessity. The image is divided into its elements, which draws attention to its important statements that can still be irritating or not. In this way perspective of cameras and cutting of images are very important.

  **Instead of a conclusion - Approaches of the media pedagogy which are oriented to the action**

To this theoretically-oriented approach of media pedagogy can be objected, that it is analytical and that overemphasizes the cognitive side of learning. This is the case when purely theoretical models with the symbolic model are being processed in order to clarify complexity of the meaning.

There is a risk that in the pedagogically oriented analytical formulations, cognitive orientations often dominate: in the center there is a debate about manipulation. Where is present a pure media explanation, there often lacks motivation and development tasks that connect users with the media. This often leads to misunderstanding and rejection. However, there is a chance for creative moments that are deliberately used in media education.

In contrast to that, concepts related to symbols do not necessarily relate to the analysis of media events. More commonly they are brought into a connection with approaches that are related to the action, in which center
is the active use of media, such as, within the concept of video animation which connects audio-visual sign language with experimenting with the camera.

One of the projects that tries to implement the perspective of mediation between the analytical distance and media pedagogic action would be a project which follows the culture by video, where young people from different social backgrounds would participate, and would make video films. In this way, in the practical context, it is about recognition which media pedagogy and media aesthetics concepts are important for the intercultural communication, and which can be encouraged by videos. That is linked with content analysis, processing symbols, representations and understanding of symbols in the process of creation of youth.

Holzwarth/Maurer (2003: 139) are speaking of the film „Love“ which was filmed by two fifteen-year-old girls. Their film was presented to the youth from different cultural communities (Germany, Los Angeles, New York, and London), and which needed to answer different questions. Above all, they needed to give an opinion about certain symbols (for example, rose and love, thorn and pain/hate). Feedback information has brought in the end that girls have rejoiced over positive comments. Based on reactions of the others, girls realized that their intention was not understood irritatingly. As a facit the authors summarize: With feedback information it has become clear to young producers, how, thanks to their film, may arise different interpretations. It has become clear that their ideas and feelings were, as well as the self-formed intention, only one part of semantic potential. There is an impression that lady producers interpret their own movie once again and in new ways. Pedagogues are, in such projects, some kind of a coach and instigator of youth.

Basic orientation of media pedagogy should be - active use of media. Differentiated self-consciousness on specificity of media experiences can be achieved when we ourselves take pictures and make own movies. Rüdiger Stiebnitz (Moser 2006) describes the effect of alienation on his concept. A camera gives us an opportunity to see the world from a different perspective. By changing a perspective, differences are being perceived and it becomes clear that the eye is culturally trained.

Art production reflects new experiences thanks to new experiences and worldviews. Examples for such a production may be the next ones:

- Children imitate theater and certain roles. In this way, they tell stories from the movies.
- Pupils invent some television spot and thus experiment with image, tone and language.
- Documentaries are being made on an object, institution, etc.
- The most important news of the village or neighborhood is presented.

In that way the form of projects was created. Projects, thereby mean, that the various media were associated, for example when the school newspaper is being made. Photos must be recorded, added and in the end printed.

In this way, the media promote a development of competence. With such projects, the need for belonging is being developed, through which work the need for prestige and respect is gained.

Literature:

KEY TOPICS IN DEBATE ON DISTANCE EDUCATION

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Abstract: Although tremendous growth and development of e-education is evident, together with increasing enthusiasm of educational institutions to provide these types of services and a growing interest for this type of education, in recent years there is also a concern about its ethical aspects, despite all seemingly positive aspects of e-education.

Change of the very nature of the educational process in distance education/learning also brings new ethical dilemmas. They are primarily reflected on two areas: learning outcomes (quality of education) and learning process, and more detailed on: ethics in teacher-student relation, ethics on the Internet (given that e-learning is supported by Internet and web services), ethics in using electronic resources (plagiarism), ethics in (miss)use of electronic data, ethical behavior in exams and so on.

Given the dramatic expansion in recent years, e-education gets a large share of the total education market, but it is still not there long enough to be able to implement long-term analysis and formulate precise conclusions about its socio-economic impact on society as a whole. Many ethical issues are still unanswered. This paper summarizes theorists and practitioner’s dilemmas on distance education from an ethical standpoint, and raises new ethical questions that have not yet been considered.

Key words: e-education, e-learning, Internet, digital media, ethics, dilemma, higher education.

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2 This paper is a result of a scientific research project “Digital media technologies and socially educational changes”, which is implemented with the financial support of the Ministry of Education, Science and Technological Development of the Republic of Serbia for the period 2011-2014.
1. INTRODUCTION

The higher education system today is in almost all developed countries faced with many challenges. First of all, these are the requirements to provide a new generation with modern, more extensive, technologically supported, multicultural knowledge and skills which will meet the challenges of today's digital and knowledge society; further, there are also the problems of limited financial and physical resources caused by the increase of number of students and educational groups, and finally, with the expectation that to every student can be devoted more attention and provided an individual approach in an environment of team and project work, all without the possibility of a substantial increase in the number of teachers.

As priority areas of education development in many strategies of education stand out the development of habit for lifelong learning and applying information and communication technology, and also innovation approaches in the educational process. All these contribute to a situation in which traditional education, with its characteristics and capacities, is unable to respond to new requirements. Thus, we witness that the world trends are the establishment of so-called virtual universities that offer full on-line education and acquisition of competencies through e-learning. In recent years, the aforementioned colleges appear in the European region, providing on-line education system that effectively supports basic academic education and lifelong learning system.

Probably the biggest impact of new media and ICT on education is a drastic rise of distance education possibilities, or so-called enabling e-learning. E-learning is a form of learning where the student (pupil, student, and applicant) and professor (lecturer, instructor) are geographically distant from each other and that is supported by new media, primarily by the Internet.

In the past ten years, the penetration of e-learning into education market becomes dramatically intense. Internet and new media enable education to move beyond previous boundaries: geographic, social, linguistic and cultural, and also create new challenges for educational institutions. In the U.S., for example, a distance higher education is the fastest growing sector in the whole higher education sector.

Distance learning, i.e. e-learning is a form of education in which students gather knowledge without direct contact with the teacher at the time and place that suits them. E-learning is defined as the set of all software and technologies that enhance the learning process [54] or as a networked form of learning based on Internet technology [46].

E-learning has grown from being a radical idea to the widespread service offered by almost all universities in the world [16]. In the United States, e-learning is the fastest growing sector in the higher education industry. The annual growth rate of enrollment in online courses becomes double digits [1].

Although there are different levels of e-learning (from the one where the entire communication and interaction take place without physical contact and through computer-managed communication, through those in which a small percentage of the content and interactions is organized verbally - the so-called hybrid systems, to those in which only a part of the educational process is done via new media), they are characterized by a far greater advantage for those who acquire education, and for those who provide it. E-learning brings many advantages in the educational process, such as temporal and spatial flexibility in teaching and learning, the ability to adapt to individual learning style characteristics, enabling collaborative learning, team work, access to a wider range of students (students with special needs students at remote sites and foreign students). It is not an alternative to the current educational process; it presents an integral part of it, its superstructure. E-learning requires less investment of resources from both sides: the necessary travel of students and teachers, time spent, required infrastructure and logistical support. It provides an approach to a new population education: to those who, because of the location, lack of time or financial resources have not been able to get an education.

E-learning, observed at the macro level, therefore, undoubtedly has certain advantages over conventional: first of all, it increases the total percentage of population education in the world and because of its electronic nature contributes to a lower environmental pollution. Many experts point out the pedagogical advantages: Rosenberg claims that e-learning with Internet technologies contribute to a significant improvement of learning [47]. Nevertheless, criticisms and doubts show up more and more frequently (the most vocal critics come from the sphere of education: the American educational associations, professional associations and teacher unions, as well as some theorists in the field of education). This is the most common way in which care on the quality and effectiveness of learning, socialization of students and their cultural emancipation as well as (in)competence arising from the lack of practical experience in distance education are presented [28, pp. 142; 15].

With the increasing growth of e-education, the enthusiasm of higher education institutions for providing these types of services and the growing population interest for this type of education in recent years, however, despite all the seemingly positive aspects of e-education, concern arises about its ethical dimensions. A change of the educational process nature in distance education also brings new ethical dilemmas. They are projected primarily on two spheres: learning outcomes (quality education) and the learning process. These spheres are related to a number of different domains: ethics in relation between teacher and student, ethics in research, ethics on the Internet (given that e-learning is supported by internet and web services), the ethics of use of electronic resources (plagiarism), ethics of (miss)use of electronic data, the ethics of behavior in exams and the like.
Given the dramatic expansion in recent years, e-learning gets a large share of the total education market, but it is still not there long enough to be able to implement long-term analysis and formulate precise conclusions about its socio-economic impact on society as a whole. For many ethical issues, an answer can not be found. Intention of the authors of this paper is not, therefore, to provide non-existent answers, but in asking questions: what ethical dilemmas arise and in which fields of e-learning. Therefore, hereinafter are presented the questions of ethical justification and problems in using Internet technology and new media e-learning. Ethics in education generally, and in e-education, is manifested in the relations between students and teachers, in the behavior on the Internet, in (miss)use of electronic data, in the use of electronic resources (plagiarism), in behavior on examinations and other forms of academic fraud. The mere change in the nature of the educational process of e-learning brings new ethical dilemmas that must be investigated.

WHAT IS E-LEARNING?

Distance learning is a teaching process organized in the function of acquiring knowledge, skills, and student skills whereby the communication between actors in the educational process at a certain degree takes place with the help of various media and technology (print media, radio, telephone, television, ICT). Distance learning is a process that requires the creation of an enabling environment for learning where teachers and students mostly do not share the same physical space. Communication is conditioned by the choice of teaching methods and by the nature of the technical means (media) with which help takes place. Distance learning can be implemented at all levels of education, and mostly is present in the adult education programs and in higher education. Distance learning can be realized with the help of all available media and technologies that serve as course materials (e.g. print materials, sound recordings, video recordings), as the means of communication (e.g. telephone, audio conference, videoconference), as communication channels (for example radio, TV).

E-learning slowly affects all parts of education. It becomes imperative for the twenty-first century because it involves the use of Internet in all areas of society. Not only that. Educational institutions are investing in e-learning for many reasons, such as:

- increasing access as well as the reduction of costs of ICT;
- capacity of ICT to support and enrich the traditional educational practices through learning based on sources and on a synchronized and asynchronized communication;
- need for a flexible access to learning opportunities from distant places such as house, workplace, the conventional educational institution;
- belief of many educational institutions that the use of ICT will enable to them the increase of share in the growing competitive education market;
- belief and expectation that on-line learning will reduce costs and increase productivity and efficiency of educational institutions (E-learning in theory and practice-manual) [10].

New technologies and their application in education with distance education initiative (the forerunner of e-education) contributed to the appearance of a new trend in higher education in developed countries: the so-called virtual universities. Virtual University is a university without (any) physical campus, that is enabled by electronic networks, including electronic mail, forums, bulletin boards, video conferencing and shared virtual environments [22; 57]. Virtual Universities were created mainly by the modernization of correspondence forms of teaching, and because of the geographical features they have a long tradition and are very numerous in the United States and Canada. However, in recent years, these universities appear extensively in the European region, providing the possibility of on-line education system that successfully supports basic academic education and lifelong learning system.

E-learning involves different aspects of the ITC use in education: from the simple use of computers in the classroom for traditional teaching (power point presentation, process simulation, multimedia presentations, use of web content, etc.), through a “mixed” or “hybrid” (blended, mixed -mode, hybrid) instruction that uses a direct contact in the classroom and on-line activity, to a full on-line organized classes, in which all the activities of teachers and students take place at a distance without physical contact.

E-learning offers many advantages for both actors in the educational process: a student and a teacher. This way of teaching enables students a temporal and spatial flexibility in learning with the availability of teaching materials for learning anywhere and anytime, and therefore education becomes available to those whose coming into the classroom would not be possible. Learning becomes more personalized and all relevant learning materials readily available. The interactive content for learning (simulations, online assessment tests), and various media for presentation of content are used (the text with images and sound, video, animation, simulation,…). Interaction (communication) between the student and teacher that takes place through computers is often more direct and intense than communication in the classroom. Besides communication, teamwork of students on joint projects is also encouraged, and all this develops social and communication skills and thus constructivist and collaborative learning principles emphasize. The teacher is also enabled temporal and spatial flexibility in teaching, easier communication with students and directing their work (individually and collectively) and in that way he or she have better and more creative ways to achieve these educational goals. Learning contents can be easily and quickly updated and complemented with the latest findings and relevant information [51].

In the wide range of new media that support e-learning VLE (virtual learning environment) should be mentioned,
as the system for the learning support, introduced in educational institutions around the world. VLE functions in the Internet environment, and provides a set of tools for assessment, communication, and transfer of content, design of questionnaires, organization of documents and the like. A virtual learning environment (VLE) is a system designed to support teaching and learning in an educational environment. VLEs, originally created for distance education, are now most often used as a supplement to the traditional face-to-face classroom activities (or so called “blended learning”). “VLEs are often used in schools and other educational institutions with the primary goal to make the learning experience interactive” [5, pp. 6032].

One of the most popular VLE is Moodle, an open source system: Course Management System (CMS), also known as a Learning Management System (LMS) – a free web application that educators can use to create effective online learning sites. Many education institutions worldwide are using Moodle, as well as the significant number of UK universities. Beside Moodle, Sakai is another open source VLE mostly used in the USA. Current VLEs include some new features like: blogs, wikis, RSS and 3D virtual learning spaces. Blackboard and WebCT1 are included in some popular commercial VLEs currently being used in higher education in the United Kingdom [5].

Other tools which can be used to implement e-learning are wiki, blog, social software, and podcast. Recently, a wide use has software which social benefits can be used in education and teaching process. Moodle is one of the open source software that supports this type of education and that offers many possibilities. You can create lessons, set up multimedia contents, a list of mandatory or additional literature; it contains automation options of tests for checking students’ knowledge and ability to chat, participation in forums or scheduled consultations and in that way supports an active interaction between students and professors. Pupils and students can be guided with help of the links to additional or supplemental content, can comment, download teaching materials or homework etc.

2. ETHICS IN DISTANCE EDUCATION – LITERATURE REVIEW

To discuss the ethical dimensions of e-education, first of all it is necessary to consider the meaning of ethics in education in general, so that, after that, the specifics of distance education, ranging from ethics in Cyberspace to the ethics in e-learning, could be acknowledged.

According to Guha, Ethics in Education is a discipline that aims to evaluate the resolution in the educational process in accordance with moral principles, that is, to be focused on ethical empowerment of students at different stages of life [26]. Furthermore, UNESCO advocates the deep inculcation of ethical values based on cultural, legal, philosophical and religious heritage of different human communities (retrieved 15th May 2011 from the website: www.unesco.org).

A large footprint in this area left the book Ethical Dimensions of College and University Teaching: Understanding and Honoring the Special Relationship between Teachers and Students, where aspects of ethics and accountability in education can be reduced to the nine principles. This list covers everything from competency in content and in pedagogy; to confidentiality and sensitivity of content and personal data; to the relationship between teacher and student; assessment validity and respect for colleagues and the institution:

- content competence,
- pedagogical competence,
- dealing with sensitive topics,
- student development,
- dual relationships with students,
- confidentiality,
- respect for colleagues,
- valid assessment of students,
- respect for institution [20].

Global character of Cyberspace, causes that problems connected with or caused by information-communicational technology have global disposition, including ethical problems. That’s why, because of the global nature of Internet, the ethical problem of using IT in e-learning also has a global character.

Although the area of e-learning is very propulsive, ethical and moral issues recently appear. Although an explicit ethical foundations and principles of e-education have not been established so far, the literature listed below may be the basis for the development of this thought. Thanks to internet technologies, e-students overcome traditional boundaries of education - geographical, social, cultural and linguistic boundaries, thus creating new dilemmas for those who provide e-education (founders of educational institutions, management and administration of educational institutions, and especially for teachers).

Brey has come very close to ethical dilemmas related to e-learning [8]. He has identified four areas of ethical and social concerns regarding online education, and formulated following questions:

“1. Can social, cultural and academic values be successfully transmitted in computer mediated education?
2. Are computer-mediated educational settings conducive to academic freedom or do they threaten to undermine it?
3. Does a reliance on computer networks in higher education foster equality and equity for students and does it promote diversity, or does it disadvantage certain social classes and force conformity?
4. What kinds of unethical behavior by students and staff are made possible in computer-mediated education, and what can be done against it?” [8, pp. 91]

Also very useful is the study of Anderson and Simpson who make their own dilemmas on the basis of their rich
experience in terms of higher education at a distance of Massey University in New Zealand [3].

Further, Howard Gardner, an authority in the field of modern psychology, famous for his theory of multiple intelligence, appointed Five minds for the future:

- the disciplinary mind,
- the synthesizing mind,
- the creating mind,
- the respectful mind and
- the ethical mind [23].

Camuse later takes his cue with precision by developing codes of ethics for teachers and students in distance education [12]. These ethical codes literally are presented in the table below.

Table 1 - Codes of Ethics for Teachers and Students in E-education

<table>
<thead>
<tr>
<th>Code of Ethics for Online Learners</th>
<th>Code of Ethics for Online Teachers</th>
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<tr>
<td><strong>The Disciplinary Mind</strong></td>
<td><strong>The Synthesizing Mind</strong></td>
</tr>
<tr>
<td>• Reach for new content and skills and make them your own.</td>
<td>• Consider varying perspectives and opinions.</td>
</tr>
<tr>
<td>• Participate in online course discussions and other activities on a regular, substantial basis.</td>
<td>• Participate in online discussions with thoughtful posts that synthesize information and ideas.</td>
</tr>
<tr>
<td>• Review course requirements; organize and schedule work.</td>
<td>• Relate new learning to your own experiences and to other areas of study.</td>
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<tr>
<td>• Be persistent as you read, study, research, plan, and accomplish work.</td>
<td>• Establish a strong instructor presence in your online course.</td>
</tr>
<tr>
<td>• Learn and practice new technology skills needed for class assignments and interaction.</td>
<td>• Communicate expectations and assignments clearly and consistently.</td>
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<tr>
<td><strong>The Synthesizing Mind</strong></td>
<td></td>
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<tr>
<td>• Consider varying perspectives and opinions.</td>
<td>• Facilitate online course discussions and other activities on a regular, substantial basis.</td>
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<tr>
<td>• Participate in online discussions with thoughtful posts that synthesize information and ideas.</td>
<td>• Develop expertise with technology tools and be ready to provide assistance to students.</td>
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<tr>
<td>• Relate new learning to your own experiences and to other areas of study.</td>
<td>• Revise course documents and web addresses so they are accurate and current.</td>
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<tr>
<td><strong>The Creating Mind</strong></td>
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<tr>
<td>• Contribute towards an online class environment that supports and encourages creativity.</td>
<td>• Continuously extend your knowledge of the discipline you are teaching.</td>
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<td>• Use the support and ideas of the online community to participate in the creative process.</td>
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<tr>
<td><strong>The Respectful Mind</strong></td>
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<tr>
<td>• Treat your classmates and the instructor with courtesy and respect.</td>
<td>• Demonstrate and encourage creativity in the online course environment.</td>
</tr>
<tr>
<td>• Think before you communicate; avoid derogatory, dismissive, or overly critical comments.</td>
<td>• Establish an inviting environment in which to learn and create.</td>
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<tr>
<td>• Support others in learning by providing feedback, resources, and information.</td>
<td>• Foster student-to-student collaboration and communication.</td>
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<tr>
<td>• Post questions in the Q&amp;A message board so that clarifications and solutions can be accessed by your classmates.</td>
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<tr>
<td>• By your comments and actions, show your appreciation for contributions of others.</td>
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<tr>
<td>• Welcome and value the diversity of learners in your class.</td>
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<tr>
<td><strong>The Ethical Mind</strong></td>
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<tr>
<td>• Be honest in your representations of your own background and education.</td>
<td>• Treat your students with courtesy and respect.</td>
</tr>
<tr>
<td>• Submit work that is your own.</td>
<td>• Think before you communicate; avoid derogatory, dismissive, or overly critical comments.</td>
</tr>
<tr>
<td>• Follow applicable copyright laws, and give attribution to the work of others.</td>
<td>• Facilitate appropriate communication and interaction and provide useful feedback, resources, and guidance.</td>
</tr>
<tr>
<td>• Be an active, dependable member of groups.</td>
<td>• Consider student right to privacy when designing and implementing activities.</td>
</tr>
<tr>
<td>• Do not undermine others.</td>
<td>• Value and embrace diversity and allow for differing opinions to be offered.</td>
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<tr>
<td>• Strive for excellence.</td>
<td>• Regularly review the course for accessibility and make needed improvements.</td>
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<td></td>
<td>• Keep your students safe; deal with issues of inappropriate conduct carefully and on a timely basis.</td>
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<td>• Request and use feedback from students to adjust the course, meet individual needs, and improve your facilitation skills.</td>
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<td></td>
<td>• Provide an accurate description of your own background and qualifications.</td>
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<td></td>
<td>• Model and teach ethical behaviors.</td>
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<td></td>
<td>• Follow applicable copyright laws, and give attribution to the work of others.</td>
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<td></td>
<td>• Establish and implement an assessment system designed to fairly measure student achievement.</td>
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<td></td>
<td>• Know your students well enough to provide recommendations for future education or employment.</td>
</tr>
<tr>
<td></td>
<td>• Strive for excellence.</td>
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On the one hand, an overview of already articulated dilemmas from the cited and broader literature has been provided in this paper; and on the other hand, new dilemmas have been defined and their classification has been performed.

3. ETHICAL ASPECTS OF DISTANCE EDUCATION

3.1. Equality, or digital gap?

As e-learning is based on Internet technology, it allows wider access to education, to many social groups: to those who for various reasons can not travel or who live in geographically remote areas of the university, to people who can not economically afford to live in university campus, to employees, people with a family, to those who suffer some form of discrimination, to people with the disease that is not allowed to attend university, to people with disabilities, etc. Because of this the e-learning is primarily defined as a democratic and open [58; 45; 43] and that, consequently, allows the freedom and diversity. On the other hand, Internet is still unavailable in some societies, and, consequently, there are questions: how much is e-learning actually democratic [13] and does it decrease or expand the digital gap? Brey has previously defined the third question regarding this dilemma.

Simpson points out there are not enough evidence to confirm that the e-learning would help in overcoming social excommunication [48]. Although the Internet provides greater access to distance education, this does not necessarily mean that distance education will really reduce the digital gap. The first and fundamental prerequisite for attending e-learning is that students (e-students) have access to the Internet, and consequently, they are privileged in the digital divide. Also, having Internet access, e-students already have access to knowledge and information that is more and more exaggerated and become generally available, so a self-conducted informal learning and education are already available to them. Does not the digital gap increase in that way between them and those who in general do not have the access to Internet? Furthermore, one of the major arguments in favor of the e-learning increase of equity and equality that have been mentioned in this text is that e-learning allows access to education, to wider social groups that couldn’t access traditional education. However, it does not necessarily mean that geographically distant people, people with disabilities, those who suffer from various forms of discrimination and so on have an Internet access. It turns out that only those who have Internet access from these social groups have access to the e-learning.

However, we are witnessing the expansion of Internet access around the world that promises reduction of this problem in the future. The cost of tuition should be taken into account. Given that distance education requires less investment of resources by educational institutions (less heating and maintenance of the leased space in which the classes would be held, less physical equipment and learning materials, laboratories, teaching aids and models etc. - since the lectures and exercises take place online and a student contact with teaching aids, models and other materials for learning takes place in virtual laboratories, depending on the technology used), it has a lower cost than traditional education of the same rank, quality and reputation, and therefore distance education opens new opportunities for those who can not afford the traditional studies at a higher price. Furthermore, participation of students through required time in the journey, listening to lectures, waiting for the breaks and so on decreases in e-learning. In that way the target group of students in distance education is therefore expanded again – thus e-learning has become popular, mainly among older students with more responsibilities and less free time for training. In fact the distance education is considered to have the greatest potential, and a number of statistical findings confirms this, especially in lifelong education.

However, we still can not say for sure whether distance education is increasing, decreasing, or leaving the same digital divide. It is not present long enough in the world to let us determine accurate and reliable data. Besides the Internet access, technology for distance education is also improved and expanded. Not only do hardware and software for e-learning develop and advance, by appearing thus for example, Second Life in three dimensions as virtual spaces for learning and interaction, but also the Web 2.0 technology and its tools of increased interaction and involvement of participants infiltrate in education distance, resulting so-called E-Learning 2.0. In recent years, mobile technology has a strong e-learning market penetration, allowing learners to have access to systems for e-learning at any time at any place... All this affects that the working conditions of online education also ad hoc, change, and is even more difficult to assess its role in the digital divide.

In whatever case, those that provide online education have an ethical responsibility to society and human civilization to strive and make active steps towards reducing the digital divide. Gladieux and Swail have identified following recommendations for administrators of online education for digital divide prevention:

- “Place access at the core of system design.
- Keep the promise of technology in perspective.
- Learn form the distance learning pioneers.
- Consider broad access in the development of products and the expansion of markets.
- Take action to narrow the digital divide.
- Monitor progress toward equal access” [24, pp. 23].

3.2. Multiculturalism

Questions of multiculturalism in today's global, computer networked society grow and are more and more mentioned in various contexts, including business ethics. It is very difficult to lead business operations that are designed, developed and practiced in one country, in some other that is culturally different. The obstacles, which many companies of western countries had in setting up production facilities in other countries, are
known. “Managers of global companies are finding it is wise to learn international codes of business ethics” [21, pp. 6].

This phenomenon is also present in distance education. Trends in internationalization of higher education on the one hand, and the trends of increasing funding of education (especially higher) on the other, are resulting in the fact that universities are increasingly diverted to the international markets by offering its services of providing distance education. The richness of the structure of distance students and the opportunities provided by Internet access thus change the cultural dimensions of e-education, providing multicultural and international student participation online. These dimensions of participation have very good sides (as is indeed the case in other spheres of human interaction), such as spreading the wealth of ideas and perspectives, but they may consequently have poor sides: may cause differences in the way of communication, learning and interaction of diverse structures of students, and can cause confusion, or even destructive conflicts in their online discussions. There are many ways and levels in which ways and styles of learning and participation of students may vary, depending on which country they come from.

Here are two examples of the experience of educators in distance education, which literally describe those differences:

“Liesbeth: They (other culture, i.e. non-Dutch students) will not engage in a discussion with their lecturer as Dutch students do; they accept marks without protesting; when I ask them to do something, they do it without loud grumbling.

Bertus: Asian students are not at ease when a lecturer is too familiar with them. So, some specific ethnic groups are moving you to that position of power distance your are expected to stand in. I’m quite aware that later on, Asian students change as time passes, the manners and morals become more proximate to the Dutch standards. Nevertheless, when conflicts or problems arise, Asian students will fall back in that extended power distance-consciousness” [61, pp. 2].

Two major problems can be summarized as being related to multicultural issues: the problem of inequities arising from ‘dominant’ cultural values embodied in teaching process, methods and materials [6; 41]; and the problem of miscommunication among participants in online discussions, coming up from cultural difference [25]. In terms of achieving the quality of distance education it is necessary for the educators to pay attention to these two areas and find ways to overcome these problems.

Ten Dam and Hatton have suggested that differences in educational styles can emerge in seven fields:

- interaction in teaching process (“not done” versus expecting critical questions and answers);
- relation between students (group harmony versus individual performance and competition);
- time (relevance of time accuracy versus irrelevance of time accuracy);
- learning process organization and initiative (mostly by lecturer versus mostly by students);
- learning scopes (theory centered versus understanding and application centered); and
- technical assets/media usage (limited versus much) [55].

Recognizing the essentialistic view, we must take into account the pedagogical culture that is created in e-learning and its impact on students outside the school. Al-Saggaf [2] in this regard shall publish the results of the negative impact of the internet network on “offline behavior” in Saudi Arabia (causing, for them, culturally inappropriate behavior of students in their behavior in life outside the school). So here elucidates the question of accountability of teachers and educational institutions for the (un)ethical behavior of students in a multicultural context, which corresponds to the first dilemma regarding online education, which is set by Brey. The set of recommendations for teachers and students defined by Camuse [12] and based on Gardner’s “Respectful mind” most closely touch on this issue, although it is related to the respect of diversity in a broader sense, and not just respect in cultural sense.

The ability to overcome these potential problems that can be caused by multi-cultural structure of students and teachers, also largely depends on the faculty. Since the faculty that offers programs in international education market is the one that brings together individuals of a multicultural context, it follows that the faculty itself has a responsibility to take measures so that the positive sides could be used, and negative could be prevented. Here we must mention that the responsibility of those who learn should also be present, especially if they consciously choose such a learning environment (by enrolling in the college abroad or in foreign-speaking area). Their self-development initiative, which apparently stems from a desire to study, in this case, should include also an initiative to acquire skills of functioning in a social multicultural context. Today, in the global, IT networked society the average man is facing such challenges very often. The ability to establish a smooth and constructive social interaction of multi-cultural quality is the ability which is also called cultural intelligence [17; 56] and which is increasingly mentioned in recent years. Cultural intelligence is primarily defined as an individual’s ability to function effectively in situations characterized by cultural diversity [4; 17; 18]. It is therefore evident that the faculty that has ambitions to offer its online programs to multicultural international environment, also should develop culturally intelligent behavior of employees and students.

E-learning must be designed to empower learning in different cultural contexts [35], and teachers must
understand their responsibilities and be appropriately trained to work with students of different cultures.

3.3. Obligation of participation in the discussion and/or academic freedom?

Online participation in academic discussions in e-education is equivalent to the verbal discussions and debates, and mostly represents a standard part of student obligations at a distance in almost all colleges, which have programs for e-learning. These discussions require from students to take their views and opinions on the basis of arguments, which are based on the literature and the matter which is processed under the programs and make some kind of learning community through online participation and thus constitute an integral pedagogical culture of the university.

Many studies indicate that students consider this online discussions as very productive, and that sometimes even consider them to be more effective compared to the verbal discussions in the traditional education. Many researches have proved that students perceive online discussion as more unbiased and democratic than traditional classroom conversation [34; 15; 33]. In addition, since it is asynchronous, online discussion enables participants to reflect on contributions of their classmates’ while creating their own contributions before posting it. This kind of conversation has a potential to create a culture of reflection and mindfulness in online courses [42]. Furthermore, Picciano has shown that students’ perceived learning from online courses correlated to the amount of online discussion that had been taking place on that courses [40], and Jiang and Ting have reported that perceived learning in online courses was related to the specificity of teachers’ discussion instructions [30]. Dibiase claims that his experience on The Pennsylvania State University (in conventional and in distance education), has confirmed the views of many teachers that they communicate with students more effectively online than orally [15].

These research findings indicate that the method of online discussion is undoubtedly useful, but still, watching this discussion not as a voluntary act of the students, but as an obligation, the question arises, *is it ethical to impose student participation in online discussions with other students as an obligation?* Many experiences of so-called e-teachers precisely impose this dilemma [3]. *Does in this way change the essence of the discussion? How in this way, can be respected academic rights of students to an independent learning and academic freedom? Is it ethic to make conditions to the students with marks, so they could participate in discussions when and as far as it is expected of them and prescribed in advance, and not when they want it and when they are inspired?* Brey hasn’t consider this, while Gardner has discussed this issue in his book “Five minds of the future” [23], and Jenkins too, in the study of cultural participation, where he states that it “shifts the focus of literacy from individual expression to the community participation” [29, pp. 7].

We remind you, however, that the situation of participation in academic discussion does not differ much from those of traditional studies. Do professors also require from students a verbal participation? Is the qualitative participation of students in class, especially an interactive, often regarded as the exam prerequisites? Why then only to attribute this to an e-learning?

When considering these dilemmas also must be taken into account the fact, that some individuals have more freedom to communicate online than face to face. Joinson showed that “people publish more information about themselves in computer-supported communication than verbally” [31, pp. 188]. While traditional classes in discussions, favors those who are extravert communicative, online discussions correspond to individuals who are not prone to verbally explicate their opinion, but they do it successfully in writing.

3.4. Automation of process in higher education

E-learning technologies mostly include automated tests to assess student knowledge and give them immediate feedback. As a technological novelty, these automated tests are well accepted, primarily because of their simplicity, speed and independence. On the other hand, some authors, like Dibiase however, points out a negative stance towards these innovations and condemn this phenomenon as the beginning of automation of higher education. In connection to this the following questions arise: *how is it ethical for evaluation of students to be performed between the student and computer, and not student and teacher?* [15] This dilemma has not yet been reviewed.

Stasi estimates that the current distance education is too inclined towards Taylorism [50], yet, recent collaborative technologies for e-learning can create the paradigm of e-learning which will be characterized by the values of conventional learning. Noble has reported students’ positive experience on this type of evaluation of learning success [39]. However, here, one should not ignore the fact that this daily liberates time for teachers more qualitative work, e.g. processes in which his direct involvement is of major importance (for example, communicating with students, conducting e-discussions, providing feedback to students). It is important to keep in mind, that the automation of tests is innovation in the field of evaluation of the effect of learning which, like any other innovation, can bring a priori resistance to change and the negative attitudes of the participants, so it is possible that these negative attitudes of some teachers are precisely caused by that.

Far greater ethical dilemma which is related to the automation of education is the mass commercialization of technologies used in distance education. A powerful lobby of manufacturers of these technologies (such as Apple, IBM, Bell, Microsoft, Simon and Schuster, Prentice-Hall, etc.) is very intensively focused on promoting e-learning in order to expand the market. Ethical motives of commercial software manufacturers are highly debatable (this is not the case with software
such as Moodle, which is not commercial, but open source type). Educational institutions (those that do not use open-source technology) correspond to this lobby, with buying their technological solutions.

How ethical are motives of educational institutions for the purchase of technology solutions for distance education? Do they buy them in the hope that it will really raise the quality of education or because they want a larger market share of higher education? Similarly, Noble has defined an interesting dilemma: do they hope to reduce the long-term cost of the automation process which promise a manufacturer (design, teaching, evaluation...)? [39]

Noble, as well as many other authors, claims that computer-based instruction is part of a recent “commercialization of education” which in turn as part of a larger trend towards commercialization of higher education: “The universities are not simply undergoing a technological transformation. Beneath that change, and camouflaged by it, lies another: the commercialization of higher education. For here as elsewhere technology is but a vehicle and a disarming disguise” [39, pp. 19].

3.5. Safety and security of information about students

In electronic environment there are new moral and ethical challenges, because on the one hand it offers the possibility for different behavior, which requires a new moral principles, such as copying software and hacking, and on the other, because of (electronic environment) a forms of immoral behavior such as plagiarism or invasion of privacy is easier to perform and harder to notice, and later to control.

About the ethics on Internet, as a field of wider character that includes ethics in e-education, among all has debated Hallam [27]. His field of interest was concentrated on the misuse or abuse of Internet. There are many different aspects of Internet ethics, such as defamation, harassment, or infringement of intellectual property rights. Often users are unaware of policies that may have been done. He has identified the list of what parts an institution’s policy might include:

- attempting to hack into another computer,
- using the institution’s resources for personal gain,
- sending threatening, obscene or harassing messages,
- posting confidential material outside the institution,
- repost messages without permission and
- disruption or interference of network activities, including the distribution of unsolicited advertising, propagation of computer viruses or worms [27, pp. 251].

Since the e-learning in large part rests on the use of the Internet in the interaction of basic participants of the educational process, according to the aforementioned, we can conclude that in distance education student privacy issues occur as wrong use or misuse of their information. Measures that e-faculty, in the form of a code of ethics policies, implements to prevent erroneous or misuse of Internet communication in distance education, can be deduced from the above-quoted.

Anderson and Simpson state that, on the universities that offer e-learning, are often recorded and monitored data on the participation of students, materials that they read, the time spent in using online content and the number of responses placed in virtual environments (forums) [3]. Such information are automatically tracked, processed, used, and then archived, and their purpose is primarily that the educational institutions monitors and generates performance data and engaging students in online courses. These data are, in the majority of educational institutions that offer programs for distance learning, essential instruments for monitoring student engagement, except for the tests of knowledge assessment. While the obvious use of the constructive side of this data, there is the dilemma about the possible negative aspects e.g. misuse of this information. Is it ethical to use this generated information about the students who attend classes at a distance? These questions imply a set of analog questions: is it ethical to use the information about the work of students for evaluation of their success in traditional education? Why the rules should be different here? Furthermore, how to ensure that such information is not misused? Although, the usual measures of prevention which are offered to the students are a guarantee of privacy and data protection, a more important question to ask is whether the students have given consent to the collection of such data and whether they are informed about the protective measures? A large number of e-students are not aware that the information on their activities are recorded and stored.

Another key question concerns the (miss)use of information about the online activities of students in training courses. Examples of software for e-learning in a number of universities in Canada shows that this also has a marketing side: gathering of relevant data about users [39]. Thus, all online activities, including communication of students and teachers automatically tracked and stored, then transmitted to a third parties - producers of software. The situation is similar on web sites which offer educational materials and courses, which are often designed by the third parties - companies that manufacture commercial educational materials, software and services.

Questions are raised: how much is ethical to use this data for purposes other than education? What are the privacy rights of students, whether they are aware of these rights and who guarantees them? Can the students have the opportunity of consent in order to their data are used in this way and are they in a position to refuse such participation? These ethical dilemmas, which have not been defined, require special attention.

In online courses, students through interaction with other students, build their presence and identity. During the course, there is an exchange of personal information among many students encouraging their free exchange of opinions, attitudes and ideas that inevitably lead to disclosure of personal details of participants. Such
personal information and views are also susceptible to archiving. When the information without the consent of the students reaches the people who were not involved in their creation, there is a misuse of confidential information and violation of the privacy of students. Students with partial protection against abuse of their private information enables anonymous representation of students, however, in this environment, the identification of students and is not intended, so an anonymous representation would create the potential for anonymous attacks and clashes in virtual environments. In the case of an anonymous student representation also increases the risk of false representation, identity theft and misuse of student privacy.

Discussion about the identity, confidentiality and anonymity leads to a deeper ethical considerations. Questions that we ask are legitimate and important for e-education, and according to the literature so far are insufficiently explored: whether e-learning has a responsibility to ensure the privacy of information or it is required for students to learn skills and techniques specific to these issues? Does the responsibility is on an educational institution that provides e-learning in order to protect the privacy and identity of the students? Does the responsibility lies with the educational institution that provides e-learning in order to make ethical correct decision on the way of the monitoring, archiving and access to confidential information created e-student interaction? These issues have not been sufficiently analyzed. The contribution that exists in this area is found in the form of recommendations for students and teachers, i.e. codes of ethics based on Gardner’s Five minds of the future, more precisely, on the basis of the respectful mind [12], Table 1.

Philip Brey came closest to these subjects in the study, “Ethical Issues for the Virtual University” [7], in which he has defined the following types of ethical questionable behaviors that are related to the use of ICT and the Internet:

- digital plagiarism,
- breaking copyright and software theft,
- hacking,
- improper use of computer resources,
- (anonymous) harassment and hate speech, and
- breaches of informational privacy and confidentiality [7].

Abuse and misuse of personal information about students, which we discussed above, may be classified under six types of ethical questionable behavior, and identity theft and anonymous attacks in the fifth of which it is was defined by Brey. About plagiarism and breaking copyright software theft will be discussed in the next subsection.

To avoid these problem, virtual and e-universities implement a number of measures, from the recommendations or prescribed policies on the manner of expression [7], by prohibiting access to sites or filtering illegal or immoral content (adult content, racist content, illegal software accessible for download) [47], to the censorship and deletion of inadequate statements in online communications (when the administrators, moderators or system operators block certain messages, delete some web pages or block some e-mail addresses). All of these methods, although they may be efficient, have the other side of the coin: freedom of speech as the basis of academic and intellectual freedom is limited, as well the ability of obtaining or publishing content.

Ethical issues used here have imposed significant implications for the effects of e-education. Although most forms of content control for learning and teaching at universities comes as a preventive measure or defense from the unethical behavior and abuse of the Internet, we must not ignore the violation of academic freedom and free speech. When students and teachers are aware of the possibility that their contribution on teaching and communication should be evaluated, filtered, condemned as inadequate or even rejected, there is no space for free discussion and, consequently, productive, and effective dialogue. Brainstorming, a widely known method of transfer and the creation of knowledge through discussion is a technique that, on the contrary, implies that there is no bias, no censorship of any assessment and condemnation of anyone's ideas and contributions.

Therefore here is another question that crystallizes: Where is the boundary between prevention of ethically improper behavior and the prevention of academic freedom and effectiveness of communication in distance education?

A possible solution to these issues and dilemmas is to create a protected virtual environment for training with a powerful method of identifying students and teachers - through the identification data in ID or index, with direct visual identification through web cameras and the like, that would create a safe environment for students and significantly reduced the risk of false representation, identity theft and misuse of student privacy. These issues and dilemmas, in fact, exceed the limits of educational ethics and cover issues of ethics and moral principles in general.

3.6. Psychological distance and academic fraud

Fass has published the information gained by research on academic fraud in the traditional education that it is almost 75% of students admitted that have committed some form of academic fraud [19, pp. 171]. To this problem is not immune neither a distance education: the most recent survey by the Center for Post-secondary Research named National Survey of Student Engagement in 2007, indicates that a high proportion of students at a distance seems that recognize some form of academic fraud - 59% of all students surveyed opted for this answer [38].

The U.S. Department of Justice report on the ethical use of information technology in education describes the term called “psychological distance” [49], and this phenomena can somewhat explain student inclination to plagiarism and other academic fraud. What is psychological
distance? When one interacts with other people face-to-face he is able to see immediately the results of his inappropriate and unethical behaviors immediately (current feedback). But when one uses information technology to communicate and interact with other people in a way that harm them, it seems to him that the act is less personal because he can’t see or hear the reaction of others in the exchange (the lack of feedback). This lack of immediate feedback, the inability to perceive and appreciate the response of other to our wrongful conduct, is called the psychological distance. Earlier, moral values were building in family and usually reinforced in education, but today this is not the case. New generations are becoming psychologically distant in their interactions with others. Therefore, e-learning represents an environment in which is possible unethical behavior of students. Based on these attitudes, the U.S. Department of Justice report includes recommendations on what educational institutions can do to achieve technology ethics: set policy of technology ethics that provides a model that students can follow, and incorporate ethics in technology in the study programme.

The possibility of academic fraud is becoming one of the major ethical dilemmas on the faculties who provide service to distance education: whether the student who writes paper is really the one that is registered? Does the student resort to plagiarism? Does the student who fills the test of knowledge assessment is the one who enrolled on studies or he is replaced by one? Many colleges during the organization of examinations and tests, in order to avoid the possibility of mistaken identity on knowledge tests, require from students to be physically present at a predefined time and location of the premises of the faculties, although in this situation clearly violates concept of distance learning and question arises: how ethical is to require from students, who have, from various eligible reasons, chosen to study at a distance, to travel to college and be physically present at the tests of knowledge assessment, in order to reduce the possibility of academic fraud? Some universities reduce the value of simple tests of knowledge assessment and replace them with more complex assignments, where student are required to submit seminar or project work in order to show that they have adopted curriculum. To prevent plagiarism, for which in that case increases the likelihood, more often are used different software tools such as Turnitin.com.

And when it comes to dilemmas such as academic fraud, a parallel with traditional education has to be made. While on one hand, the phenomenon of psychological distance supports the fact that there are (favorable) conditions for academic fraud in an environment that makes e-education, it is known that it was present in various forms since the establishment of education in the conventional sense. Recent research by George Watson and James Sottile at Marshall University in West Virginia, has given very interesting insights and comparison of the frequency of academic fraud in the traditional and distance education, where the 635 postsecondary students, had thoughts about their practice and of their colleagues and compared the experiences on dishonest behavior in both forms of education. The results suggest that less frequent is unethical behavior of students in distance education:

- students in traditional education are more frequently engaged in different academically dishonest behaviors when compared to students in online courses.
- still, students perceive that the possibility of cheating in online courses is much higher (more than 4 times higher) than in face-to-face courses [59].

The presented results make sense when we take into account already mentioned research data about what proportion of students admits that have committed some form of academic fraud: and compared to 75% of students in the traditional meaning [19] smaller proportion of is the case in distance education - 59% [38]. However, programs for distance learning are subject to various criticisms and many believe that cheating in this environment is more often. Why? Are these biases based on something? Perhaps answer lies in the following.

Although it is important to understand what are the factors that lead students to academic fraud: personality characteristics, the testing environment, pressure for grades, lack of understanding of academic regulations, and development of moral reasoning, these factors may be the same for both types of education. Fass however, went further and named categories and motives of academic fraud in e-education [19, pp. 173], which is very similar to those of traditional education, with the exception that student in distance education is less subjected to socialization in the context of transmission of ethical values, academic principles and legal regulations [9]. Therefore, we return to the first and the fourth question posed by Brey: Can social, cultural and academic values be successfully transmitted in computer-mediated education? What kinds of unethical behavior by students and staff are made possible in computer-mediated education, and what can be done against it [8]? Gardner explained this with utility term the ethical mind, and Camus specifies this dilemma in the form of recommendation as: “submit work that is your own” [12].

When considering these questions it must be taken into account the students’ ability and preparedness to understand and implement basic ethical codex in an academic environment. Earlier in the article was mentioned, that some of the factors that influence on students to commit academic fraud is the lack of understanding of academic conduct and level of development of moral reasoning. Furthermore, today we can not count on it that students will acquire the basic moral values at home and is not reasonable to expect from students coming from high school and enter college to develop, that either through traditional or distance education, will be able to fully master the complexity of moral judgments in of different situations in which will be found during the studies [59]. That is why e-faculties should develop moral and ethical judgment and behavior for students, as stated by many authors [19; 11; 59; 44; 12].
Furthermore, even those students who independently or with assistance from the faculties understand what is expected from them in terms of studying the code of ethics, may not act, unless they are not confident that the faculty and lecturers who attend or teach them at a distance do not comply with it. Therefore, e-faculty has a big influence and responsibility in the constitution, declaration and dissemination a code of ethics and in providing an example to students. In addition, Rodabaugh has also spoken about importance of fairness in college teaching: “Ethical dimensions of college and university teaching require that we consider fairness as a preeminent objective of the educational process. Just as people expect fairness in business, in the courts, in government, and on the job, college students expect fairness in their courses” [44, pp. 37]. In the Table 1 with the cited codes of ethics developed by Camus [12], can also be found: “model and teach ethical behaviors”, where it is clearly indicates that the obligation of faculty, which provides e-learning is to provide to a student a basic training and education in this context; also as “follow applicable copyright laws, and give attribution to the work of others”, where it is clearly explicated the need for the advocacy behavior of and give attribution to the work of others”, where it is clearly explicated the need for the advocacy behavior of students starting from, ethical behavior from employees at the university. Faculties need to regulate and declare a code of ethics becomes greater if it operates on the international market and bring together students from different cultures: multicultural context increases the likelihood for students to have different representations and assumptions about what is ethical behavior, depending on their cultural heritage.

If this is not about the courses that are constituted exclusively for the independent and self-conducted participants (business courses, further education, online graduate specialization, etc.), the students require mechanisms that will help them to infiltrate the virtual community of learning which exists on the course. Virtual universities must therefore become leaders in this field. Ethical leaders are those who are “serving the common good, by being responsive and caring of constituents, and by working within a framework of shared beliefs concerning standards of acceptable behavior” [60, pp. 27]. Distance educators therefore must interact with others (especially with students) fairly, honestly, respectfully and consistently and build up the policy that is ethical in practice.

Moreover, Fass recommends the ethical policy provided in distance program handbooks and catalogs, should regulate:

- writing assistance and other tutoring,
- ethics of examinations,
- collecting and reporting data,
- use of sources on papers and projects,
- giving assistance to others,
- respecting the work of others,
- computer ethics,
- adherence to academic regulations and
- use of academic resources [19, pp. 173].

To summarize, regarding the dilemma of academic fraud, for universities which offer programs for distance education it is necessary:

- to publish a clear policy on ethical and moral behavior in college, detailed regulation and moral code concerning academic fraud, so they are always and easily accessible and entirely clear for students who study at a distance,
- to implement the ethics of using ICT in the curriculum [9; 36] which would be mandatory for all students studying online,
- that teachers and other employees who have contact with students clearly point to the rules of using the Internet source in order to prevent plagiarism,
- to except for mentioned preventive measures, modern mechanisms for preventing academic fraud are used, such as software for checking plagiarism.

3.7. Quality of distance education

Educational institutions, undoubtedly, have a moral obligation to provide the quality of the education to the students, so that can in the most effective way to enable the development of society in general, in accordance with scientific, technological and economic development and national priorities set by policy makers of education. Knowledge and competencies of graduates at a distance should be level with those of traditional students, because it is not by which means it was achieved, but the fact that their education is generally realized. We must become aware that electronic education is not a new kind of education, but only a new way to achieve the same. The technologies used in distance education are neither good nor bad (they never are, regardless their purpose): students in this form of education does not learn from technology, but still from the teacher and the content created by man, only with a different medium. Academic fraud on which we discussed in the previous chapter, is the reason for another ethical dilemma: whether e-learning provides the necessary quality of learning? This dilemma is implicitly set, through the more generally asked first Brey’s question: Can social, cultural and academic values be successfully transmitted in computer-mediated education?

Some authors have expressed doubt in the fact that students can acquire skills and competences by studying purely electronically, especially when it comes to science, which require direct contact with matter (geography, physics, medicine, agriculture, etc.) [15, pp. 132]. This represents a major dilemma, but it must taken into account that the latest 3D technologies offer some new approaches (for example, very noticeable applications of Second Life, which is often used in higher education, allows students interpersonal interaction via avatars, which almost completely compensate for the lack of interaction face in the face, then observing and understanding the different objects, such as visiting the interior of some buildings such as the Sistine chapel without traveling, and sometimes even access to physically inaccessible objects as a step beyond traditional education: a view inside the body, an insight...
into the layers of the earth's crust or deeper inside the country, and still many other advantages such as simulation and implementation of operations, etc.). It takes more time to be noted that whether and to what extent these new technological capabilities can actually compensate for the absence of physical contact, to determine whether students get the same, less or even greater adequate knowledge and competencies, as well as those who study in traditional way, and thus to resolve this dilemma. This for now we can designate as a very promising and interesting problem for future empirical research.

While this is important to take into account the fact that a distance education is available in many forms: from a fully electronic exchange between the actors in education, without any physical contact, to various combinations of transition, often called “hybrid” forms of distance education that include the degree of physical contact. Matter that can not be mastered with e-learning can be transferred via traditional way or work in practice. It is known that even the traditional education often in addition to lectures and exercises, requires from students to work in practice.

Quality of an e-education is conditioned by the competence of teachers to work in the new technological conditions that alter educational practice: managing of video conferencing, e-discussions, interactive content, using the latest educational SOFTWARE and so on. In fact, the use of modern teaching and learning resources changes the entire educational process, in addition to the conditions in which it occurs and which require a highly engaging of new media and technologies, and teacher competence in their use. It is this change in design of the teaching process and requests increased methodological, pedagogical and didactic competence of teachers, in which up to now, in the traditional education, there was no need. The study from 2009, (an e-learning statistics) indicates that up to 4/5 faculties with online courses, have at least some kind of training for this type of work [1].

Therefore, the management structure of educational institutions which offer a distance education, must be directed to the provision of conditions for training teachers of their pedagogical practices for this type of teaching, if they wish to offer their services on education market. Availability of quality and fully trained teaching staff for an e-pedagogy, must become not only a moral obligation for the provision of quality education, but also a necessary condition for entering the market in distance education. Taking care of, so to speak, teachers’ e-competence, should have to extend further on administrative sector at the institutional level but also at the system level, including support of the management sector of the education system for development and evaluation system (licensing) and improving skills (formal and informal training of teachers). "As distance learning... proliferates at a dizzying pace in all areas of education and training, the need for instructor training in teaching at a distance will become obvious ... [i]t is incumbent on postsecondary administrators as well as corporate, government, and other user groups to provide the needed support and training for instructors” [14, pp. 1].

However, in traditional education, there are different educational consequences of social changes, especially the important role of new media in behavior and style of learning for new generation. Now is talk more about a new pedagogy which must replace the old, pedagogy which corresponds to students/pupils as “digital natives” and the classroom as a “technology arena”, enriched and supported with hardware, various educational software, new media, Web 2.0 technologies...

New emerging and highly interactive media challenge evaluation of instructional products. Learners today can access trough hypermedia content that is endless and diverse, and can control the process of learning and self-development; they collaborate both with the delivery system and with other learners. Strict and predefined goals are no longer usable in keeping with the goals of modern learners. “This empowerment of learners compels the evaluator to assume a much more broad-based set of techniques and standards. Only this modification to the evaluation process will accommodate self-directed learning!” [32, pp. 368].

Having this in mind, Swan suggests that developers and online instructors would have to enable the following, in order to increase the quality of distance education:

- clear goals and expectations for learners,
- multiple representations of course content,
- frequent opportunities for active learning,
- frequent and constructive feedback,
- flexibility and choice in satisfying course objectives, and
- instructor guidance and support [52, pp. 18].

In this way the dilemmas, which are presented, about the quality of distance education can be largely eliminated.

However, although the skeptics and critics are the ones who question the quality of e-education, there are not enough concrete studies about its quality and outcomes, particularly in an international context, and on this area we can not still speak reliably.

4. CONCLUSION

It must be emphasized that an important feature of e-education – with increasing the availability - is ethical by itself. Education on distance, in addition, brings with it some ethical risks and weaknesses. When one considers that the expansion of e-learning in recent years has insinuated on its higher share of the education market in the future, we realize that these issues must be identified and found an answer as soon as possible. In this paper are crystallized the following ethical dilemmas: dilemma of the digital gap; multiculturism; obligations of participation, process automation, psychological distance of identity, confidentiality and anonymity, privacy and
supervision, academic fraud and the quality of e-education.

E-learning is, by using web technology, set in a different environment from the traditional, where some of the factors are the psychological distance, multiculturalism and academic fraud. Online environments create sites that are “supportive of hybrid identities, complex discourses, and multiple relations among learners” [62, pp. 61]. Due to changes in these terms, e-learning pedagogy must, in the essential concepts, differ from the traditional pedagogy. For example, Zembylas and Vrasidas [62, pp. 68] point out that it is a time for the development of “ethical online pedagogy adaptive to change”. What we can already conclude is, for the teachers to be competent in the pedagogy of distance education, they need to expand their skills to this type of e-pedagogy. The curriculum should, in the absence of direct social contact, include the ethics of behavior, particularly with the implementation of the Cyber and academic environments.

Other issues that were articulated in this paper still remain open: not enough time has e-learning been in practice to be able to analyze the overall performance and its effect on society: professionalism, expertise and interpersonal skills of graduates’ e-students, their impact on the economy and their subsequent social life. These are directions for further research.

The positive aspects of ethical e-learning are evident: the impact on the ecology (far less violates the environment) and social development (education, access to wider social groups). However, the question is not whether the positive exceeds the negative - it is not a competition between traditional and distance education - but what are the negative aspects and how to remove them for the purpose of development of distance education.

The growing presence of new media and ICTs in traditional education in the future will blur these boundaries. Even now, in the conventional education are used various educational softwares for learning and simulation, projectors and computers, forums and blogs to communicate, more and more electronic resources instead of printed. Furthermore, it was already discussed on how much shades from a full face-to-face to a complete online learning. All this contributes to the fact that education, even traditional one, is increasingly informed, and these will in future be even more. Therefore, the boundaries will become progressively thinner and there will be no drastic separation to conventional and online learning, and many of these questions will be projected on traditional education.

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THE CONNECTION BETWEEN ORGANIZATIONAL CULTURE AND ACHIEVEMENT MOTIVE LEVELS IN RADIO TELEVISION OF VOJVODINA – RESEARCH FRAMEWORK

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Abstract: The aim of this paper is to create the base for research which will examine the influence of dominant organizational culture and its subcultures on the level of employees’ achievement motivation in Radio Television of Vojvodina. The authors deal with the theoretical and methodological framework of the research. The aim of the research is to identify the dominant organizational culture in Radio Television of Vojvodina and subcultures. Moreover, the purpose of the paper is to identify the degree of the connection between organizational culture and achievement motive levels. The study consists of two parts, and two specialized questionnaires have been used.

The authors have defined the concept of organizational culture and its beginnings and development have been explained. Furthermore, they have defined the achievement motive and they have analysed current research in this field.

The subject, problem, goals of the research, as well as hypothetical framework have been established. A detailed description of the research and expected results has been presented.

This research can be applied in the work of radio Television of Vojvodina management. The results can be used in order to increase the employees’ performance. Thus, the audience satisfaction and the quotation of the informative programme are going to increase.

Keywords: organizational culture, motivation, achievement motivation, human resource management,

1. INTRODUCTION

Organizational culture has been researched during recent decades in many studies, and it is in the focus of attention of management theorists, without indications that, in these years will happen some significant changes about this issue; during the increase of importance of adaptation to changes on the market, and also to changes in society in general, which is again a result of the rapid development of technology, and also of many social factors that make the current global paradigm, the practice is for organizational culture interested as same as theory. However, there still are a lot of concerns in the study of organizational culture, starting from the problems which are occurring already in its definition; also, many correlations between organizational culture and behavior of members of the organization are remaining to be tested and set.

On the other hand, in the global economic and culturally dominant “achievements economy”, achievement motive is one of the most researched motives; its values can greatly affect the work of each individual, and the author of this paper is primarily interested in the influence this motive is making on the work of managers; the achievement motive can be affected and it can be, in greater or lesser measure, developed through life.

Television and radio, as well as the majority of businesses in the sphere of media, require the efficient development of communication networks because the information is the basic segment for creating an informational basis, upon which the media houses lie on. Because of this, the kind of business, in our case television and radio, has a significant influence on the formation of specific organizational culture and organizational structure within the media. In order to provide adequate communication with the environment, and as well as within the house, it is, first of all, necessary to optimally decentralize the organizational culture within the organization and to ensure that the flow of information and communication can function in both ways - from top management to employees and vice versa. Considering that the media engagement requires intensive work, constant
improvement, and cooperation, organizational culture must enforce the implementation of the value of achievement, learning and teamwork.

Therefore the authors of this paper are engaged in the study of organizational culture and its connection with the level of achievement motives within RTV Vojvodina.

2. THEORETICAL FRAMEWORK

2.1. Conceptual determination of organizational culture

Culture as a concept has a long history. It was used as a word to refer the sophistication of a person when we say he's cultural, and to anthropologists for referring to the customs and rituals of social development in history. In the last decade, some organizational researchers and managers use it to indicate a climate and participation of organizational development about their management of people, or to report values and as motive for an organization.

According to the Dictionary of MS/MH:

**Culture**, -s – 1. The set of all that the human society achieved and realized in the areas of production, social and spiritual activities. 2.a. Level of such activity of a nation, the epoch, the social system, social class; b. level of development of any industry or spiritual activity; 3. level of social and spiritual development of individual, enlightenment, education; possession of certain habits, behavior, education: personal culture; 4. processing.

According to The American Heritage Dictionary of the English Language, Fourth Edition, **culture**, Houghton Mifflin Company:

**Culture** is the totality of socially transmitted behavior patterns, arts, beliefs, institutions and all other products of human work and thought characteristic of a community or population.

Contemporary sociologists now commonly accept Linton's definition of culture: “Culture of a society is a way of life of its members; collection of ideas and habits which they learn, share and transmit from generation to generation.” (Haralambos, Holborn, 884)

According to Durkheim and Parsons human society is not possible without a common culture. In order for it to function, a common culture and collective consciousness are needed. It allows people to communicate with each other, to understand and to act in accordance with common goals. The existence of a common culture and collective consciousness is a functional prerequisite for the survival of any society. Parsons said: “The highest level of development of the system of human action is not possible without a stable proportion of symbolic systems.” (Parsons, Bales, 301)

The joint culture, according to Durkheim and Parsons, acts as the control of behavior, but also requires maintenance, rehabilitation and integration in real space and time, with all the physical constraints imposed, in order to build, survive and grow. (Haralambos, Holborn, 887)

Terms such as corporate culture, organizational culture, culture of the organization also contain the determinants of culture as defined and accepted by the majority of contemporary sociologists and anthropologists.

Organizational culture has been the subject of study since the twenties. Max Weber, one of the founders of sociology as a scientific discipline, was first to interest in organizational culture. He was first to introduce the word understanding for the action, including the movement and motives. In this way he constructed a scenario for important issues of modern business. Max Weber's theory of understanding provides the basis for: a real understanding of action, a rationalization of actions in different ideal types, which can be used in research, the understanding of subjective orientation of performed actions of individual actors. (Weber, 95)

Scientific community that study organizational culture have no consensus on the question “What is Culture?”, its generally accepted definition and use different wordings to explain it; Authors Petković Janićijević and Bogićević Miličić explain this state of affairs as follows: “... for all new concepts the largest number of different definitions is characteristic, even organizational culture is no exception ...”. (Petković and others 2009) Author Du Toit (Toit, 2002) has, in dealing with the problem of defining the organizational culture referred to Kroeker and Klukhona and on aforementioned, ambiguity of the term “culture”, the author refers to Ajferuk and Bodevin who claim that “there are almost as many meanings of the term culture as there are cultures of people who use the term”; (Toit, 2002), he notes that in terms of creating a comprehensive definition of organizational culture for decades there is no any major progress, and that's about what it is and what is its nature is still discussed very sharply.

However, in this “overall confusion in the understanding of the term culture in literature” (here Du Toit referred to Beyer, Hannah and Milton), most approaches agree on one thing - the organizational culture is based on a set of shared meanings (common to) some groups of people.

Since the fifties, until now, scientists have defined organizational culture in many ways, from the conceptual to the core. Review of the literature in this field has shown that the number of definitions is almost equal to the number of authors, which only proves that the concept of organizational culture is still very “young”. Following are some of the most commonly used definitions of the Anglo-Saxon area and in chronological order.

“The culture of an organization is a common and traditional way of thinking and acting that share, to a greater or lesser extent, employees, which new employees must learn and accept in order to be accepted into the company.” (Jaques, 1952.)

“The culture of organization refers to the unique configuration of norms, beliefs, values and behaviors that
characterize the way in which individuals and groups carry out their activities.” (Eldridge, Crombie, 1974.)

“Set of meanings that is shared by a group of people is organizational culture.” (Louis, 1980.)

“Culture is a model of beliefs and expectations shared by organization members. These beliefs and expectations produce norms that powerfully shape the behavior of individuals and groups in the organization.” (Schwartz, Davis, 1981.)

“Culture is a system of informal rules that facilitate people's behavior most of the time.” (Deal and Kennedy, 1982.)

“Corporate culture can be described as a general constellation of beliefs, customs, value system, and norms of behavior that is unique to a given corporation, and that sets the pattern of activity in it and explain patterns of behavior and emotional characteristics in it.” (Tunstall, 1983.)

“Culture is a model of shared values that give institutional meaning to employees as well as the rules of behavior in everyday life.” (Davis, 1984.)

“The model of basic assumptions, values and norms that given group has developed or discovered by learning how to deal with problems of external adaptation and internal integration, and that function well enough to be transferred to the new members of the organization as the correct way of thinking and feeling about these issues.” (Schein, 1985.)

“By culture we mean that common beliefs shared by the organizational leaders on how to manage their employees and how they should run their business.” (Lorsch, 1986.)

“Corporate culture is implicit, invisible and intrinsic awareness of organizations that conduct the behavior of its members and that occurs through their behavior.” (Scholz, 1987.)

“Culture is the collective knowledge of the organization members created by their interactions that determine specific organizational value system.” (Wilkins and Dyer, 1988.)

“Culture is a set of common knowledge with the emotional charge that is integrated into a logical system or cognitive maps that provide knowledge about the description, operations, prescriptions and causes. It is used by habit and affects perception, thinking, feeling and behavior.” (Sackmann, 1991.)

“Culture is a set of interdependent values and behaviors that are common in the community and which maintain themselves, sometimes for a long period of time.” (Kotter and Heskett, 1992.)

“Culture is common and relatively stable beliefs, attitudes and values that exist in the organization.” (Williams, Dobson and Walters, 1993.)

“Civilization begins again with finding you and me again, and it means that we all need: a passion for the failure, a thirst for learning and homework, propensity to share, preference for ambiguity, a sense of disgust of the imaginary and inflexible people who bring confusion , a willingness to open fire, the faith in the curiosity of all people, the desire to be strange tendency to “hot words” propensity to revolution, love of laughter, aversion to tepid responses, resolve not to tolerate adverse effects of decrepitude anytime and anywhere. Did you get that?” (Peters, 1994.)

“Organizational culture refers to the pattern of beliefs, values and learned ways of dealing with the experience that have been developed through the organizational history and which are manifested through material objects and as well as behavior of members of the organization.” (Brown, 1995.)

“The nature of the task that which determines the culture of the organization, rather than the community in which that task is performed. The value system of any organization is determined by its task. In order to carry out their task successfully, it must be organized and managed in the same way. With their culture, therefore, the organization always exceeds civil unions. If the culture of an organization conflicts with the values of its community, the culture of the organization will prevail – otherwise the organization will not provide their social contribution.” (Drucker, 1995.)

“An organization is more than its products and services. It is also a human society, like any society, it feeds the particular forms of culture, organizational culture. Each company has its own language, its own version of history, their myths, heroes and villains, both historical and contemporary. This whole flowering confusion serves to confirm the old members of the organization and to introduce newcomers to the firm's identity and the firm's standards of conduct, in many ways both formal and informal, which tells them what is good and what is not.” (Hammer, 1996.)

Geert Hofstede defines culture as “the collective mental programming of people in the region”. This author further defines culture as “the collective programming of the mind which distinguishes the members of one group from members of other groups”; (Hofstede, 2001)

Culture in this sense is a system of collectively held values, it is learnt, and it is a form of mental programming.

Hofstede further defines the position of the organizational culture, according to which, in Hofstede's visualization, the culture is positioned between the universal human nature, which is common to all men, and specific idiosyncrasies that each individual has in his personality, (Tatsuki, 2001, Hofstede, 1981).

Finding your way in the general jumble of definitions of organizational culture, helpful can be the approach of Maula, Brown and Cliff, who state 4 approaches of the research on organizational culture:

1. Culture is an entity that is taught;
2. Culture is system of beliefs;
3. Culture is strategy;
4. Culture is mind control. (Maul, Braun, Cliff, 2009, Sun, 2009)

The word culture has many meanings and connotations. When applied to groups and organizations, we are almost certain that we have the concept of semantic confusion, because the groups and organizations are also difficult to define. We can observe the culture from various aspects:

- behavior in interactions of people (language, customs and traditions, rituals, ceremonies)
- group norms (implicit standards and values that are developed in the working groups)
- expressed values (articulated, publicly presented principles and values that the group favors, product quality, leadership)
- formal psychology (open policies and ideological principles, as a group action of employees, customers, suppliers)
- rules of the game (implicit rules “as we do here”, the socialization of new members)
- climate (a sense that is transmitted in a group through psychic intentions and ways of how members of the organization interact with each other, with customers or with others outside the organization)
- skills and abilities (special competence of group members in solving certain problems and the ability to convey certain things from generation to generation)
- conventional wisdom, mental models, and / or linguistic paradigms (sharing cognitive frameworks that are growing perception, thought and language used by groups and opinion for new members in early socialized process)
- sharing opinions (quick understanding created by members of the group as their mutual interaction)
- metaphors or integrative symbols (ideas, feelings, and the image of the group developed to characterize them. It can be felt all the time, but it becomes partitioned, and incorporated as a material of artifact of the groups.

All of these concepts are related to the culture and / or reflect culture by sharing or holding union of the members in the group, but none of them understands the culture as an organization or group. In addition to other words such as: standards of conduct, rituals, traditions, some recognize the word culture by critical elements of sharing that it contains.

Culture implies some level of structural stability in the group. When we say culture, we assume that it is not only sharing, but something deeper and more stable. In depth it's less conscious, less tangible and less visible. All of these elements lead to deeper integration.

Culture implies rituals, climate, values and behaviors connected into a coherent whole. The essence of culture is made of template or integration.

The most useful concept of culture is accumulated learning and sharing of knowledge in a given group, covered with behavior, emotions and cognitive elements of the group members, as total psychological functions. For sharing knowledge, prior knowledge and sharing experience is necessary which in turnaround or change implies some stability among the group members. This is how you build an integrated culture.

When the elements of the group cross with the purposes of other elements such as mission, vision, goals, leadership, etc., it comes to conflicts and instability. This can result in a lack of stability of the group members, which is present in many subgroups that share the experience together. Conflicts also result as facts that each of us belongs to many groups, and each certain group adopts insufficient information from others in order to adapt to a different group.

If the concept of culture is to be useful, then attention must be payed to the human need for stability, coexistence and opinion. Cultural formations are, by definition, the struggle for integration and solid patterns.

If the group has a common culture, it accumulates learning and externalizes it. All groups and organizational theories distinguish two main sets of problems of all groups. Regardless of the size of the need to pay attention to:

1. survival, growth, and adaptation to its environment and
2. internal integration, which provides daily functioning and ability of adaptability.

Some people have a common system of communication and language and learning can take place at the conceptual level, thus the sharing of ideas becomes possible. That deeper level of learning lead to the essence of a culture that can be seen as the concept of sharing the basic assumptions.

For one group can be said to have a culture when it has enough shared experience formed as a set of shared assumptions.

In this paper, we will rely on Shane's definition of culture of an organization, because it does not include the mere conceptual definition of organizational culture, but also point to its essential elements: content, social character, effects, pathogenesis, stability and maintenance, uniqueness and specificity, and it points to the continued relationship with the environment that allows the further development of the culture and organization. This definition is inspiring them to see and understand the new paradigms of the coming age of knowledge and the new economy - the knowledge economy.

Organizational culture is the pattern of sharing the basic assumptions that the group learned or adopted in order to resolve the external adaptation and internal integration. It will function as long as the review of assumptions is relevant and valid. New group members are correcting their way of thinking and feeling in relation to these issues. (Schein, 58)

It should be noted that this definition includes three essential elements:

1. socialization problems - new members accept the culture of the organization. In order to achieve a deeper level of socialization a critical situation of old and new members of the group must be considered and they need to be encouraged to share assumptions. Can culture be learned through anticipatory socialization or self-socialization? Do the new members reveal basic assumptions of the firm? Yes and no.
2. If there is no sharing of assumptions in culture, the new members of the group are creative and can lead to the creation of new organizations of the culture. Mechanism of social control is a separate issue.

3. Problem of behavior - behavior is always defined by two characteristics: cultural predisposition (perception of thinking and feeling that are patterned) and situational opportunities that emerge from the external environment. Only in the deeper layers artifacts that identify the culture may be found.

4. Can a large organization posses one culture - this problem can only be considered empirically. If we find certain assumptions that are shared by all units of the organization, then we can legitimately talk about organizational culture. Even when at the same time we can find a number of subcultures that have their own integrity. Each social community will produce individuals that produce subculture as a normal process of evolution. Some of these subcultures will typically be in conflict with each other, as is often in the case of senior management, and unions of workers' groups. Such conflicts usually occur in periods of crisis.

2.1.2. Elements of organizational culture

The content of organizational culture can be classified in many ways.
Most authors agree that the organizational culture is composed of many elements that can be grouped into:
1. implicit and
2. explicit elements of organizational culture.

Between these two groups, where there is no clear differentiation and elements of one are derived from another, and vice versa.

The approach that Petković, Janićijević and Bogićević Milikić are using is the division to:
1. cognitive and
2. symbolic component of organizational culture. (Petković and others, 2009)

In cognitive elements they classify: beliefs, values, expectations, assumptions, ethics, feelings, meanings, informal rules, way of thinking, view on the world; symbolic elements of culture are: language, slang, stories, myths, legends, heroes, rituals, Logo, physical appearance, etc. While cognitive elements are found in people's minds and cannot be directly detected, the symbols are so far visible in the daily life of the organization.

Janićijević and authors in basic cognitive elements of organizational culture include: (Petković and others, 2009)

1. Basic assumptions: they are at the core of the cognitive content of organizational culture. They systematize and generalize basic human knowledge and experience of people about how the world around them works and what is the nature of things that surround them, in a much more abstract level than belief. They are located in the subconscious of the individual where with a strong intensity they influence on the living and thinking of the individual. They are extremely difficult to detect and change.

2. Belief - the cognitive component of organizational culture that tells you how the world works, and what cause and effect relationships exist between things and phenomena in the real world.

3. Value – they tell people what they should strive for and how they should behave. Values are the part of the interpretive scheme that tells how to behave and what state should aspire to.

4. Attitudes - present relatively stable system of beliefs about an object or situation that predisposes an individual towards the object or situation behave in a certain way. Attitudes in the corporate culture present a set of beliefs about certain situations or matters of life and work of the company shared by the employees and which predispose to be in relation with those issues or in those situations to behave in a certain way. Actions and decisions of employees, however, may not always be in line with their views, because on those actions and decisions are influenced by other important factors.

5. Norms of behavior - are certain rules of behavior in standardized situations that produce patterns or models of behavior.

Listed cognitive elements are in a fixed relation to the symbolic - while they are embedded deep in the subconsciousness of the people and are conditioning the interpretation of appearances from the environment, so far are the symbolic elements the projection of cognitive and are the main mechanism of their propagation through the organization. Presented approach which is represented by Janićijević and authors are in the interpretation of the symbolic content of organizational culture refer to Shane's approach where the symbols are all tangible and intangible objects and events that are the product of shared assumptions, values and beliefs of the members of the organization. Scholz and Holbauer perform the division:

1. symbols oriented towards communication - which include myths, stories, slogans, jokes, sayings, etc;
2. symbols oriented towards the actions (behavior) - which also includes the rituals, ceremonies, etc.
3. symbols that refer to objects - which include logos, architecture, clothing, etc. (Pržulj, 2000) Schulz makes the categorization of the symbolic elements of organizational culture on:
1. semantic (verbal) symbols, which include: language - as the most important symbol, specific slang, metaphors, stories, anecdotes, myths, legends, slogans and the like;
2. behavioral symbols (symbols of behavior), involving rituals, ceremonies, and the like; and
3. tangible (physical) symbols, which include the appearance and arrangement of the rooms, dress code, architectural styles, clothing, furniture, colors, logos etc.
2.1.3. Schein’s model of organizational culture

In the literature one can find many models of organizational culture, but there is no single universally accepted comprehensive model. The most common starting point for the study of organizational culture still seems to be Schein's model of organizational culture, which we discuss in the next paragraph, given the fact that we chose Schein's definition of organizational culture.

Du Toit makes the classification of artifacts, which is shown in Table 1.

Table 1: Classification of types of artifacts, according to Du Toit

<table>
<thead>
<tr>
<th>Type of Artifact</th>
<th>Examples</th>
<th>Authors that studied this type of artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbols</td>
<td>Flags, objects, signs, pictures and images</td>
<td>Ot</td>
</tr>
<tr>
<td></td>
<td>Architecture, design of offices, dress-code, decoration of offices</td>
<td>Shultz, Rafaeli and Vorlin</td>
</tr>
<tr>
<td>Common Behavior</td>
<td>Language, slang, stories, scripts, myth, jokes, legends, metaphors, rituals</td>
<td>Alveson, Hatch, Ot, Shults, Wilson</td>
</tr>
<tr>
<td>Samples of Heroes</td>
<td>Celebrations, rituals</td>
<td>Scheine, Ot</td>
</tr>
<tr>
<td>Ceremonies</td>
<td>Celebrations, rituals</td>
<td>Ot, Trays, Bayer</td>
</tr>
</tbody>
</table>

Artifacts are made of visible organizational structures and processes in the organization. Although they are easy to be observed and recorded, based on the knowledge solely on the artifacts, final judgment cannot be brought on the organizational culture.

Values

Values present the principles and standards of the organization. The values indicate what is important to members of the organization. The values are the basis for what is acceptable and what is not acceptable. What is considered right and wrong shapes the code of ethics. Members of the organization can recognize their value

Edgar Schein identifies three levels of organizational culture as follows:

1. artifacts,  
2. values and  
3. primary (basic) conditions.

Artifacts

Artifacts are aware, obvious cultural expressions. Artifacts are visible, tangible, audible manifestation of human behavior in organization, which are supported by organizational norms, values and beliefs, assumptions. extremely well especially in situations when challenged by others.

In the same line with the values are norms, which refer to values. Norms help to demonstrate expectations among organizational members. The standards provide unwritten rules that indicate expectations in terms of activities that can be applied to many situations.

The basic assumptions

The basic assumptions are the basis of the organization culture. The assumptions are the basis for everything that members of the organization think and feel; they are unconscious and are taken for granted. They are tacit and elements that belong to this (the third and the deepest) level of culture we cannot easily identify in the daily conduct of members of the organization, although it is deeply imbued within them. A further problem in identifying these elements, in addition to the aforementioned unconscious, makes the common phenomenon that the stories of these elements are taboo in many organizations. Testing members through questionnaires and interviews here does not give the desired results.

Schein believes that basic assumptions are expressed through the following categories:
- The essence of reality and truth;  
- The essence of time;  
- The essence of space;  
- The essence of a human being;  
- The essence of human labor;  
- The essence of human relationships.

Schein’s model of the level of the culture is often referred to as the “Model of layers of the culture.” The relationship between norms and values is that what is considered acceptable is based on what is valued in a particular culture. Therefore - the members of the organization share the values and shall comply with norms, because the basic assumptions support norms and values. Norms and values continue to support the manifestation of those more obvious aspects of culture ie. artifacts.
2.1.4. Types of organizational culture

During the decade-long study of organizational cultures, different authors have established some specific characteristics of specific organizational cultures, which were then grouped into categories, thus creating types of the organizational culture. According to Janićijević and the authors, classifying organizational culture is done according to their characteristics or the content and aims to create a relatively small number of basic types of culture, which help in faster and easier understanding of (specific) organizational culture. (Petković and others, 2009) Schabracq comments that the typology can be done in a multitude of forms, of which some are more theoretical considerations of authors who dealt with the organizational culture, while others are primarily useful in practice (where he classifies Hendy's four types of organizational culture). (Schabracq, 2007) Pržulj refers to the fact that the typology of organizational culture allows comparison between cultures, and the typology of culture should be understood as a tendency, not a rule of law. (Pržulj, 2000)

In practice - no matter which classification is used - there is no perfect match with the type of organizational culture that provide scholars, which, however, does not diminish the importance of categorizing a particular organizational culture through a variety of approaches, that is, using various typologies, which, in the opinion of author of this work, company management may find additional and better solutions to maintain or change existing or create an entirely new organizational culture.

We chose Handy's classification of the types of organizational culture because of its standardized instrument for diagnosing organizational culture, which we will use in our research.

2.1.4.1. Types of organizational culture according to Handy

Harrison creates a model of organizational culture in which he, according to the dimensions of formalization and centralization, observes four organizational types as follows:

1. Culture of roles;
2. Culture of power;
3. Culture of task and
4. Atomistic culture (Culture of person) ¹, which is shown in Figure 2. ²

![Figure 2: Typology of organizational culture, according to Harrison](image)

Charles Handy continued the Harrison's model and generates a typology of organizational culture that is in theory and in practice often commented and used, and Janićijević and authors characterize it as: “... the most effective and best way to quickly and easily understand the organizational culture in our country ...” (Petković and others, 2009)

Handy classifies organizational culture into four types:

1. Culture of Power;
2. Culture of roles;
3. Culture of task and
4. Culture of support. (Handy, 1996)

¹ of the English: “Role culture”, “Power culture”, “Task culture” and “Atomistic (Person) culture”

² The authors of this work would not in detail comment the types that this model identifies, given that the model of organizational culture of Charles Handy builds on here shown types in listed dimensions (centralization/formalization).
Metaphors that Handy used to describe these four types of organizational culture is often used as synonyms for their name; so Handy for each of the four types attributed a god from Greek mythology: Zeus, Apollo, Athena and Dionysus, as well as symbols: network, temple, grid and cluster, as shown in Table 2.

1. In the culture of power, the power is concentrated in the hands of one individual, who is usually the leader of the organization. Handy this type of culture connects with Zeus, which indicates the existence of a patriarchal frame in which the members are focused on the leader by a huge trust; relationship of leader and members is based on obedience, fear, awe, and even hatred. Source of power of the leader is resource control with personal control and over his people. The organization is a means to achieve his objectives and everyone obeys his power; the organization of such companies is seen as a means of achieving the goals of the leader, to which all employees should contribute.

Table 2: Symbols that Handy uses in explaining his typology of organizational culture, adapted according to Handy

<table>
<thead>
<tr>
<th>Type of culture according to Handy</th>
<th>Culture of power</th>
<th>Culture of role</th>
<th>Culture of task</th>
<th>Culture of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net</td>
<td>Temple</td>
<td>Grid</td>
<td>Cluster</td>
<td></td>
</tr>
<tr>
<td>Symbols</td>
<td>Zeus</td>
<td>Apollo</td>
<td>Athens</td>
<td>Dionysus</td>
</tr>
</tbody>
</table>

The leader tries to keep everything under control, to create and affect all relations and behavior in organizations. There are times when a leader in the culture of power takes the role of a loving father in exchange for absolute obedience. On the other hand a dictatorship is often. Sometimes it can be the case when dictatorship and paternalism are present. In these organizations loyalty is more important than qualification. The main criterions for selection of employees are similar assumptions, beliefs, and attitudes, family or other connections. In such organizations nepotism is highly expressed. The leader is in charge, and often the sole decision-maker in the organization. Control “springs from the center of the (spider’s) network” and personal opinion of the leader has primacy over all the prescribed procedures; there is a great distance between subordinates and superiors. Personal influence, power, loyalty is the concepts that are extremely appreciated, while the rules are in the background (because with the use of personal influence they can almost always be avoided). In organizations where the organizational culture of power is dominant for employees is generally very important that they are in contact with the leader, who often uses the network of same associates, whose part they can become; the amount of power and influence of members decreases with moving away from the center of the network. Political processes and power struggles are very present, because the power is a result of affection of the leader. Employees of these organizations pay more attention to who says what, whom do they know, in what kind of relationship are they with their superior and a leader, because personal relationships (especially with a leader) are the key to success. Decisions are made quickly, and the quality depends on the leader and his closest associates. Communication is intense (intense communication is a substitute for the standardization of procedures) and informal. For these organizations high speed of response is characteristic (due to the small bureaucracy, which can be easily avoided; leader makes the final decision, and, if it is necessary to react extremely quickly, the leader usually makes the decision himself) with great flexibility this culture is common in small and young organizations. However, although the reaction is fast, the consequences of leader's improper evaluation can be drastic. In these organizations, it is common that leader requires the employee to carry out a specific task to which an employee is not working, thereby circumventing the formal position in the organization, because he believes that the employee has sufficient competence that he gives them. Control in these organizations is identified with the personal supervision of the leader, who wants to be omnipotent and usually comes to a crisis if the organization workload exceeds the power of leaders to control everything himself, which further leads to the fore the problem of incompetence of middle line managers. Such a culture is also characteristic for brokerage firms, political parties, tailor shops, investment banks, and the like. If leader's skills are declining, often company performance also declines; also, there is no mechanism that would adequately control the actions of the leader; there is a risk that in situation when the leader leaves, such organizations are shut down.

2. The culture of the role is often referred to as the bureaucratic culture and in it above all is valued order and efficiency. The description of this type of culture Handy refers to Apollo, who is a symbol of order and regularity, the symbol of the temple, with which Handy explains clearly defined and specific roles in the organization (top of the temple is the place where decisions are made and power is concentrated here, and pillars of the temple reflect the functional units of the organization that carry out the decisions from the top; the strength of organization lies in the high specialization within the pillars of the temple). With the Organizations for which this organizational culture is dominant it is characteristic that the existence of a clear hierarchical distribution of power, where power is related to the position, not the individual. Decisions are made primarily on the top of the bureaucratic structure. There are a number of clearly defined procedures governing the relations between the members and each working place is clearly systematized, thus making it depersonalized. On this kind of organizations highly values are expert knowledge, and
especially experience in performing particular tasks, which is the most common criterion for advancement in the hierarchy and the source of power in the organization. Entrepreneurial initiative is not appreciated, because it often examines and/or exceeds prescribed limits. Control is focused on processes and procedures, less on the results they achieved. In these organizations is valued objectivity, fairness and rationality; work is in the foreground, the personality of the individual who performs it is elsewhere; attention is not focused on the emotions of the employees and they generally are more appropriate for individuals who are looking for job security, who like predictability and avoid high-risk situations. Such a culture is typical for public services, insurance companies, banks, public services and the like. A common trap in which the organization is falling into is putting procedures over its usefulness; they are characterized by low flexibility in adapting to the needs environment, slow response and it is more difficult to adjust to changes due to the large inertia of the system.

3. The culture of the task to the highest position in the organization sets the success and achievement, and is often called the “culture of achievement”. Having the ability to accomplish the project or task is the major source of power in the organization, and contributing that our knowledge, skills and personal charisma; appreciated is dedication to the company and possession of skills that can lead to the realization of the task, and the hierarchical position in the organization is in the background. Handy to this type of culture assigns some properties that were allocated to the ancient Greek goddess Athena, protector of wise and capable people, but also the Goddess of warriors and she is graphically represented by the grid symbol, indicating that power in the organization is concentrated in the grid nodes, and not in one place, as is the case with the culture of power and the culture of roles. Culture of task is based on the assumption that organization exists to solve tasks and everything is subordinated to and oriented towards the work that needs to be done. Such a culture is most suitable for individuals who are motivated by achievement or job itself, rather than extrinsic motivation. In organizations in which the culture of task is characteristic, employees often go from project to project and, if it is more likely to perform a task, they are easily combined into teams; pragmatism in these organizations can be seen at every turn. These organizations are open to innovation, have an extremely high level of adaptation, appreciate personal talents of employees, appreciate the professionalism in their work, appreciate teamwork and initiative, despite a high degree of independence of individuals can sometimes lead to irresponsible behavior. All members of the organization were primarily directed at the achievement of objectives, as to these organizations it often leads to expressed unity, although for these organizations is typical to have strong individualists, and sometimes it leads to the unhealthy competition within the company; in these organizations members of certain groups or teams are dominant, which typically have a high degree of autonomy. Curiosity, creativity, independence, entrepreneurship, enthusiasm and flexibility are greatly appreciated, and considering the fact that in terms of features that characterize young people, often such organizations attract younger people. Maintaining a culture of the task in the organization can be a very expensive process, because they require capable individuals that can adapt to the needs of business, often neglecting the creation of a strong expertise (for the sake of versatility), and often is the case that they are short-lived. Communication among employees is very intense due to the variety of working together. The leaders of these organizations are mainly people who inspire other members of the organization. Control of the organization is primarily focused on results. The disadvantages of this organizational culture can be that sometimes things are done lightly, neglecting the prescribed procedures, it can happen that too much time and money is spent on achieving the goal, as well as the fact that it often takes a lot of money to keep the best individuals in the organization which may cause the entire teams to leave the organization because of a better offer (which does not necessarily have to be money, because the culture of task attracts individuals who are intrinsically motivated). Common is over-reliance on individuals and their personal qualities and in situations where there is a limitation in resources it can often go to tend to be transformed into a culture of power and the culture of role. Such a culture is typical for advertising agencies, law firms, companies engaged in consulting and the like.

4. Culture of support is characterized by individuality, the basic premise of this culture is the existence of the organization as a framework that allows its members to achieve their individual goals and personal interests. It is also called “existential culture.” Members of organizations that are characterized by the dominant culture of support see themselves as independent professionals which to the given organization provide their services during the period in which the work in such an organization is in accordance with their personal interests. Some features of this type of organizational culture Handy explained by comparing the characteristics with the ancient Greek deity Dionysus, who was awarded with a multitude of hedonistic qualities or graphic symbol in the form of clusters, where we see a multitude of independent elements (dots) for which we do not see a pronounced interaction, and which are in one united frame (circle that surrounds these dots). If the personal freedoms of the individual are at risk, there is a strong opposition that often ends by leaving the organization of the actual member. The divisional management function is often seen as unnecessary, the leader is often the only “first among equals”, and decisions are usually made by consensus of experts. Power is widely distributed, the main source of power is competence, control is directed to the control of competence, and leader of the organization usually has no great personal authority, except for one which, like the other members, comes from his professional competence; organizations characterized by the culture of support mainly characterizes the multitude of democratic characteristics. In such an organization is usually difficult to get into, if you do not have high professional competence. These organizations are characterized by a small number of rules and procedures. The biggest advantage of these organizations is the high expertise of its members, then the originality, creativity
and art. In these organizations, there is a high risk of eventual dissolution of the organization if there is a threat to the personal interests of individuals; the danger is in that, that it may come to an open ideological conflict between members of the organization, as long term research and mediation between the opposed parties is often necessary. Frequently, the organization's objectives are not met because of achieving individual goals, and often are phenomena such as self-centering, vanity, conceit, larpurlartism, as well as solutions that are too idiosyncratic. Such a culture is the most characteristic for universities, clinical centers, research institutes and the like; it is rather rare in the economy.

2.2. A conceptual determination of achievement motivation

Due to the complexity of the phenomena, with emphasis on the interconnection and interweaving with a number of other motives, to provide a complete definition of a specific achievement motive is extremely difficult, if not impossible, although this is one of the motives that is very much studied.

Henry Murray points to the existence of the achievement motive, placing it among the 27 needs that, in his opinion, are the main driving forces of human activities (psychogenic needs). He defines it as a lot of complex need which manifests itself in a desire to achieve something that is difficult to achieve; to conquer, to manipulate them or organize physical objects, human beings, or ideas, to make this happen as quickly and as independently as possible; to overcome obstacles and achieve a high standard; to be highlighted in front of others, to compete with others and to surpass others; to invest long repeated efforts to achieve something that is difficult. (Calvin S. Hall, Gardner Lindzey, 1957)

From this Murray's definition follows that there are similarities with a number of motives: Motive of pugnacity, motive for prestige, motive for self-affirmation, motive for domination, etc.

The most commonly used starting framework for the study of achievement motive is McClelland's definition of this motive, he defines the achievement motive as: a tendency to make efforts to achieve and accomplish something that is considered to be valuable and with which they will be highlighted in front of others. (Roth, 1973)

McClelland primarily talks about the tendency to increase or maintain the highest possible level of an individual's abilities which meet certain standards or are considered to be excellent, and where the execution of such activities, therefore, may be either successful or unsuccessful. (Mishra, 2008)

The achievement motive is often written as “nAch” or “n-Ach”; and the national literature often uses the acronym “MOP”, a sem ustaljenih „motiv postignuća”, and, except for the usual “achievement motive” or “motive for achievement”, some authors use the term “motive of achievements”.

McClelland identified N-Ach and V-Ach, as two possible approaches to the (two categories, the two methods) measurement of the achievement motive:

1. N-Ach applied to the measurement of the achievement motive indirectly through a content analysis of seeing the fictional story (where McClelland used TAT), while

2. V-Ach applied to the direct measurement of questionnaires that were related to self-evaluation of respondents (where at the start of the study he used a questionnaire that was created using Murray's).

McClelland's, and experience of other researchers, show that the values of these two approaches can be very difficult to compare; he indicates that there is a difference in what the two methods essentially measure - TAT method or an indirect approach, focuses on the measurement of motives that are developed in early life, especially childhood, while direct access displays desirable and culture-dependent valuation (ie valuation) achievements, which are learned later in life. (Haston, 2009)

In his research McClelland started from the assumption that those who achieved a lot differ from the others, in their desire to achieve attainment, these individuals are striving more to achieve goals that will satisfy the need for achievement and to achieve this they will be “”

- Preferably found in the environment in which they will feel a personal responsibility for finding solutions to problems,

- In an environment where they can receive rapid feedback (insist on a “fast feedback”) on their work performance, so they can more easily determine whether they have improved or not, and where they are on the way of a successful solution to the problem, and

- In an environment where they can focus on achieving challenging goals of moderate risk, which they prefer..

The achievement motive is among the social motives.

According to the division of social motives on the motives for the provision of personal existence and recognition and motives focused on the association with other people, motive of achievement is among the motives for the provision of personal existence and affirmation. (Roth, 2004)

Individuals with strong achievement motive are not particularly prone to hazards and take personal responsibility for the success or failure before the outcome will be left to chance or the actions of others. Individuals with strong achievement motive are not prone to hazards; they do not like the situations with high uncertainty, because of the coincidence involved they do

3 From English: “need for achievement”
not get the satisfaction of achievement and recognize that exercise is unlikely achievable task, which does not satisfy this motive. Also, they do not like the low uncertainty (high probability of success), because there is no challenge to their skills, they do not feel that they have achieved something significant and there is no satisfying achievement motive. They prefer to work in challenging situations, where McClelland emphasizes that they avoid those tasks that are perceived to be very easy or very difficult, so they strive to tasks of medium difficulty; (McClelland, 1961), individuals with high achievement motive are trying to work best when they perceive their probability of success when they assess a 50% chance of success (according to McClelland, in terms of the risk they are about halfway between the gamblers and conservative individuals).

These individuals prefer goals they assigned the attribute challenging, and attribute realistic, if the goal is unrealistic, then it is more likely that it will not happen, also, it is likely to in those situations achieve the goal with high impact “lucky breaks” and not because of their personal contributions; both cases can lead to these individuals that this motive cannot be met, resulting in avoidance of these situations. People with high achievement motives prefer to work alone or in teams with individuals whose achievement motivation is also highly developed.

When circumstances at work allows to take over a strong personal responsibility, feedback is readily available and of good quality and carry a moderate level of risk, then these individuals will be strongly motivated.

They are characterized as primarily intrinsically motivated (performed the task, ie. Accomplished goal is a great reward in itself).

2.2.1. Development of achievement motive, its sources and measurement

In the initial studies of the achievement motive McClelland used TAT ⁴ test, so that the subjects were required to look at images that ambiguously disclosed the business situation and their actors; respondents were then written down on paper their observations on each image individually. McClelland’s assumption in this approach was that the respondent will project his motivation to the actors from the image. (Harriman, 2006)

McClelland holds that all motives are learned and, over time, the individual sets their motives in typical hierarchy that further affects their behavior. So McClelland believes that the motives are acquired in the process of socialization and learning, where the motivation is understood as the structure of attitudes and values, and is determined primarily by the social environment, rather than biological factors; two opposing forces are affecting motivation:

1. striving for success and
2. tendency to avoid failure. (Pržulj, 2008)

McClelland considers all motives that we meet in man represent the experience based motives, so the achievement motive, in fact, is acquired motive that can be developed in a different degree by individuals, members of the same society, and by which members of different societies can differ. Development of achievement motive, according to McClelland, depends on:

1. certain way and content of education,
2. values that are set and appreciated in a particular culture, where these two moments appear to be connected. (Roth, 1973)

During the life, individual associates positive or negative feelings with certain events, if pleasure is linked to achievement, then the person develops a strong motivation for achievement, in order to experience the pleasure again.

Momcilo Simunović explains McClelland's approach relying on the influence of Max Weber on McClelland ⁵, where McClelland has, starting with Weber's idea, formulated the following hypothesis: the values characteristic of Protestantism determine the content of the upbringing of children in the sense of independence and autonomy, resulting in the creation and development of the achievement motive and its appropriate values which in turn causes the creation of a spirit of entrepreneurship characteristic of modern industrial capitalism, which is an essential factor in economic development). (Simunović, 1995)

In a society in which certain values are appreciated, with upbringing will endeavor children to adopt these values. Therefore, the development of this motive, first of all, depends on the education, certain experience that child acquires in youth. According to McClelland, the source of achievement motive, lies, primarily, in specified procedure towards children. Namely, if the child is

1. encouraged to compete with others; and
2. performs well a variety of tasks required; and
3. in case of success awarded then it is likely that there will be the development of a strong achievement motive. (Roth, 1973)

Veroff attempts to describe and explain the stages of motivation for achievement. (Veroff, 1969) He provides an overview of the development in three phases: 1. Autonomous motivation for achievement – in the first phase of development of motives for achievement, at an early age, the child is motivated by undefined efforts of competence. At the same time, in order to develop a motive for achievement, it is necessary that the child has

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⁴ acronym of English: „Thematic apperception test“

⁵ A reference to the assumptions of Max Weber’s “The Protestant Ethic and the Spirit of Capitalism” inspire a generation of psychologists; that what many authors, including Simonović indicates, is that there are established and and basic McClelland's assumptions, to which McClelland himself refers to in his works.
developed cognitive skills which allow it to be aware of the outcome of its actions and to take an evolutionary attitude in relation to the activity – by defining a standard of its performance.

Autonomous motivation is based on personal standards, which means that a child of that age, competes with self. Important for the proper development in this first stage is the attitude of parents allowing children autonomy, other suggests that parents should not set specific requirements neither too early, nor too late, but at the right time.

2. Social motive to achieve - it's a phase of development that occurs around the age of six. At this stage, the child accepts the other's standards in evaluating their success. Social comparison becomes an important factor and has two functions: information (the child accepts comparison) and normative. If the normative function is overstated, it is likely that there is a regression of autonomous motives to achieve.

3. Mature orientation towards achievement – presents a stage which means the successful integration of autonomous and social motives of achievement. (Simunović, 2009)

Nikola Roth sums up the opinion of majority of psychologists, citing three moments that are particularly important for the development of the achievement motive:

1. The consistent emphasis on the development of autonomy and independence in relation to achieving the goals that the child will be able to point out in front of other children and completing tasks that will prove to be better and have more success than others.

Development of achievement motivation in undoubted conjunction with the autonomy and independence of children. However, according to Rosen and Andradea, simply the exercising for autonomy and independence may not lead to an effective achievement motive. Andrade and Rosen argue this view by saying that the practice for independence could lead to the the independent behavior in the specific area in which the independence is practiced, not necessarily to a stronger development of the achievement motive. They put emphasis on competition with others, i.e. if autonomy and independence are trained in in competition with others, it is then when the cultivation of the achievement motive is developed.

2. Setting different and very difficult tasks relatively early, while manifesting at the same time pleasure for the achieved success in solving problems and displeasure over the failure.

3. A special role is played by the influence of the mother and placing a relatively high expectation on her part and manifestation of love and satisfaction when tasks are successfully completed.

McClelland identified N-Ach and V-Ach, as two possible approaches (two categories, two methods) to measurement of the achievement motive:

1. N-Ach applied to the measurement of the achievement motive indirectly through a content analysis of seeing fictional stories (where McClelland used TAT), while

2. V-Ach applied to the direct measurement of questionnaires that were related to self-evaluation of respondents (where the start of the study used a questionnaire that was based on Murreys').

McClelland's, but also the experience of other researchers, show that the values of these two approaches can be very difficult to compare; it indicates that there is a difference in what the two methods are essentially measuring - TAT method or an indirect approach, focuses on the measurement of motives that are developed early in life, especially childhood, while direct approach displays desirable and of culture-dependent valuation of achievements, which are learned later in life. (Haston, 2009)

2.2.2. Previous research of MOP

McClelland has in his work established the following characteristics of managers that are characterized by highly developed achievement motive: (Thomas, 2006)

1. Achieving a task or goal is more important than any material or financial reward;

2. Achieving tasks provide far greater satisfaction from exercising of awards. Motivation comes from within, not outside as in individuals who are predominantly motivated by power;

3. Financial awards are considered a measure of success, not the final outcome of the process;

4. Security and status are not preoccupying, nor primarily motivational;

5. Feedback on performance that is reliable and shows the facts, they are essential, because it allows improving performance over time;

6. These individuals are constantly looking for ways to improve and to do things in an innovative ways;

7. These individuals prefer the roles and responsibilities that allow them to meet their basic needs. The ideal case is one in which these roles will offer flexibility and the ability to set and achieve challenging goals.

McClelland and Lieberman have experimentally confirmed the correlation between the development of achieving motive and sensitivity for perceiving stimuli that are associated with achieving success. Those individuals who had developed attainment, faster and easier perceive objects and situations that are in a certain relation to the achievement of the goals. This ability may be essential to the successful performance of managerial work.

There is a connection between the development of the achievement motive and memories of interrupted tasks, which has been experimentally confirmed by Atkinson addressing the problem of the Zajgarnik effect (Butterfield, 2009), it was found that individuals with
highly developed achievement motive are prone to longer and better remember unfinished tasks of individuals with underdeveloped achievement motive.

Individuals with highly developed achievement motive are independent and largely manifest non-conformist behavior unlike individuals with a low level of development of the achievement motive. (Roth, 1973)

Minor and Nel have found a correlation between the development of achievement motivation and choices in certain occupations. Studies showed that a number of students with high-developed achievement motive are going for employment in the economy, rather than in other, non-economic activity. For students with low level of development of the achievement motive goes reverse. It is considered that for this there are two reasons:

1. those who have a highly developed achievement motive are seeking activities in which that motive of power can manifest (ie, primarily in business activities);
2. those who have a highly developed achievement motive are more ready for strong competition, which is a necessary prerequisite for survival in different economic activities.

Miller and Droge have, exploring the relationship between the person and the manager of the organizational structure, with an emphasis on achievement motive, found that the level of development of the achievement motive of general manager predictor of organizational structure. (Schneider, Smith, 2004) Top-level managers, which are characterized by a strong achievement motive, will:

1. first centralize power, rather than high-level managers with low achievement motive;
2. more insist on greater formalization (using instruments such as written procedures, etc.);

So, the top-level managers that are characterized by a strong achievement motive will tend to create a centralized, clearly structured and well-integrated organization that will allow them to take credit for, or to carefully monitor and control, the performance of the organization.

McClelland originally considered that the high orientation towards achievement is key characteristics of successful managers, but McClelland himself in later researches rejects this view; a high achievement motive does not necessarily lead to the fact that someone is a good manager. Individuals with a high need for achievement are interested in how they personally are doing well, and often are not enough interested in effect on others in a way that they are doing well. Individuals with high achievement motive are generally successful in entrepreneurial activities such as managing their own business and sustainable management unit within a large organization, but often have poor results in the management of the entire organization.

According to Atkinson, the values of the results of the achievement motive research are a result of motivation to succeed and the motivation to avoid failure (Johnson, 1999); a person is motivated for activity to achieve success and determinants of these activities are: orientation, size and durability. (Suzić, 1998), Atkinson suggests that individuals with highly advanced achievement motive feature preferences and certain types of tasks, those tasks that are not too easy, but not too difficult, where applies:

1. If the task is too easy, then its execution does not satisfy this motive;
2. If the task is too difficult, then individuals with highly developed motive of achievement are afraid that these tasks will lead them to failure and therefore avoid them; the higher the level of development of the achievement motive in an individual, so is the type of fear higher.

The author of this paper points out that the Atkinson's observations should not conclude that individuals with highly developed motive are afraid of difficult tasks, but, just the contrary, they are coveted, but avoid too difficult tasks because of the low probability of success, which is as small source of satisfaction due to the satisfaction of motives. For individuals with a low level of development of the achievement motive applies the reverse of the above. He will choose the easy tasks, among them is almost guaranteed success, or very difficult tasks, where, in case of failure of success the sole difficulty of the task can be used as an excuse.

Turban and Keon have experimentally found that individuals with highly developed motive of achievement prefer companies with a salary based on merit, rather than on other types of patterns salaries based on seniority. (Turban, Keon, 1993)

Wage system based on merit recognizes and emphasizes results, in which individuals with highly developed motive of achievement is in line with the desire to stand out. In individuals with low development of motive of achievement the opposite choice is represented, and they prefer the wage system based on seniority.

In recent years, the focus of the scientific world a lot of attention is paid to the problem of over-achievement orientation; whereas in the decades behind us, the focus of scientists, mostly psychologists and management theorists, was focused on finding mechanisms to increase the achievement of individuals and the system as a whole (Max Weber and approaches to modern capitalism as a society of economic achievements), in recent years, especially in America, there are theorists who direct public attention to the “dark” side of too much stimulus to achievement.

McClelland's Center for Research and Development in the Group Hay 6, mid-2006. warns the American public that American society has a problem of too much direction to achieve among managers, where the overstated

6 from english: „The McClelland Center for Research and Innovation – part of Hay Group”
achievement motive threatens their individual careers, but also the organization as a whole. (Price, 2007)

Scott Spreier, Mary Fontaine and Ruth Malloy, 2007. In the study, “The destructive potential of people who tend to over-achievement” expresses their considerations of the achievement motive based on research that has shown that in cultures that encourage individual achievement, for successful leadership is needed accreditation of others, in which individuals who are turned towards the achievement, may be a difficulty.

The authors believe that the desire for achievement is major, original, power in business, both individually for managers, and the organizations they lead. This creates a passion and energy that encourage growth and help sustain company's performance over a long period of time. The authors deal with the problem of motivation of manager who has around 35 years, during which they have followed the development of the achievement motive, where they observed that in the last decade is present very strong growth in numbers of managers whose primary goal is achievement. They find that business has realized many benefits with this trend: increased productivity, as well as the number of innovations (which are measured by the number of patents generated per year, which is in a high growth).

The authors do not question the desirability of a strong, developed achievement motive of management structures, considering that the current setting of the global economy, is always designated as desirable. What authors in their study particularly concerns are the so-called “Overachieving” structure (excessive orientation toward achievement), ie. structure of managers in which the achievement motive is dramatically high. The authors approach the whole issue carefully, especially with indications of possible pathology of the company’s work due to excessive orientation toward achievement of their leaders, which is a common practice in the study of MOP, due to the complexity and interaction of motives, and characteristics stemming from a particular context (these are general disturbances to characterize the degree of development of the MOP as determined by good or bad (except in the case of drastic value), with which this paper faces).

Too much focus on achievement can negatively affect trust and morale of employees in the company, which in turn typically draws decline in productivity and distrust of management (both within the company and in the outer part). In this study, the authors give specific examples of very talented leaders, who have due to the excessive orientation to achieve destroyed or slowed down their careers, and seriously damaged or destroyed, the company where they worked; these were primarily made by measures that were too oriented to productivity, which have created a destructive pressure on themselves or other employees.

The authors observed that leaders with excessive orientation towards achievement:

1. strive for dominance, control, often use techniques of intimidation;
2. minimize cooperation and rarely transmit knowledge;
3. avoid the usual methods of work by invoking their authority;
4. often do not communicate information critical for companies. (Spreier,. Fontaine,. Malloy, 2007)

In the short term, especially with their determination, leaders with excessive orientation towards achievement, can be very successful. With the increase of time spent in charge, the number of these typical problems grows. One common feature is that the performance of teams in the company falls.

Spreier and the authors believe that the key elements of a solution, of “Overachieving” problems:

1. authorizing other employees to make decisions and act in accordance with them;
2. team work;
3. cooperation.

Although many theoretical frameworks such access is often emphasized as essential for the successful modern business, the authors believe that the companies in which the problem of leaders with excessive orientation towards achievement is present, it is very difficult to reach these values, given that the problem must be solved “from head to tail”, ie. starting with particular leaders, taking into account his preferences, who probably already realized the immense power in the company.

The problem of orientation on over-achievement is not peculiar to the company, but is affecting all aspects of community life. Journalist Alexandra Robbins 2006, publishes the book (Robbins, 2006), which stirred the American and world public and drawn attention to the problem of students who realize results that are within the maximum rated values or over norms that are set to them by the elite schools in America. 8 The author has made her views on this issue in which these students are often in deep anxiety, suffering from sleep disorders, suffer from eating disorders, have frequent panic attacks, they are characterized by frequent depressive episodes; often their communication with others is reduced to routine answers and often take illegal drugs that can help them to achieve more; the author states that the number of suicide attempts among this population is increasing. Connection between suicide and excessive orientation on performance is investigated by Eliza Noh, who has by exploring the issue of depression and suicide among minorities in the United States, primarily Asians, to which herself belongs, found that excessive orientation toward achievement and

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8 the author uses the English term “overachievers”, meaning: to achieve results that are within the maximum rated values or above norms, the author of this paper suggests that this term is used in the sense which is different from that used in the previous labeling with Spreier and the authors;

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1 from english: „Overachievers“
high pressure of the narrower and wider surrounding area to achieve results, especially from an early age, can be a major cause of depression and the second most common cause of suicide in women of Asian origin aged 15 to 24, who are most prone to suicide than any other ethnic group in America. Noh has isolated several key elements that are deserving for too high orientation towards achievement, which, when not realized leads to depression and further occurrences arising from this state:

1. family (especially for women), primarily parents, which is characteristic of traditional Asian culture that they cannot be contradicted and have an extremely high impact on the career choices of their children, and from an early age are putting pressure on children and often sanction them if they have not achieved expected goals;
2. an environment that is burdened by the myth that members of Asian minority are very working, capable and highly intelligent and very ethnicity destined to achieve good results at school and at work. (Noh, 2003)

The work of these two authors illustrates the mechanism by which society and culture that is present in the society affects the development, or the inhibition of the achievement motive of its members not necessarily in a radical way, but often with fatal consequences for the individual. The author of this paper believes that their work does not give rise to the problem of “overachieving” rises to the level of the dominant global problem that needs to be addressed urgently and radically. In other words, negative symptoms that “overachieving” population is experiencing may be a problem for the whole paradigm of the modern West and should be dealt with, but the author of this article sees the whole partially mitigated problem of a relatively small proportion of the population that is affected by it.

Among the works of local authors who have studied the research of achievement motive, the author of this study highlights the following:
1. Franceško Mihić, Bala, 2002. the research of structure in achievement motive identifies four components of the complex motivational dispositions: 
   1. competition with other people; 
   2. persistence in achieving goals; 
   3. achievement of the objective as a source of pleasure and 
   4. orientation towards planning.

These authors conclude that the above results generally confirm the view of McClelland on the existence of two basic components of the achievement motive - efforts to achieve what they value and which will highlight them among others. The other two highlighted components are instrumental traits or forms of behavior that person develops to be successful in competition with other people and/or in the achievement of objectives.

The author of this work in the study of the achievement motive in students using scales MOP2002 by Franceško Mihić and Bale, which has, over the years, emerged as the most frequently used tool for testing the achievement motive in this region.

Franceško, Kodžopelić and Mihić 2002. point out the extreme importance of observing the achievement motive according to its structure and elements that make it, with, of course, the unavoidable observation of the achievement motive in general. These authors observed an important moment in the work to establish the motive for achievement: differences in the achievement motive largely indicate whether the person has:

1. developed only the desire for achievement or
2. person has the ability to be successful.

These authors also point out that people who have a tendency towards competition and are highly focused on achieving the goal, but did not develop traits to be persistent, persevering and planning-oriented, are highly unlikely to be successful. If this contradiction is present, then it is associated with frequent frustration, loss of confidence, inefficiency, and destructive reactions in interaction with other people, such as envy, malice, hatred, and the like.

The authors noted research conducted in 2001. and 2002. on a sample of 382 individuals of both genders, with an average age of 21 years and a variety of educational structures (middle and high school).

Franceško and the authors came to the following conclusions:
1. Gender differences in overall achievement motive were not observed. However, looking at the differences between the individual components, it can be concluded that women are as
2. more persistent in achieving goals and
3. more perceived to achieve goals as a source of pleasure,
   than it was the case for males.

The result that women, more than men, see accomplishment of a goal as a source of pleasure can still mean that they are more willing than men to accept delayed reinforcement, which is implicit in the concept of goal.

Explanation of results that women are shown as more persistent than men in achieving their goals, the authors associate this with the level of frustration tolerance; acquiring the set objective often involves a number of barriers that person has to overcome, due to which the obstacles that are placed between the person and the desired goal are the source of frustration. Women are increasingly faced with various types of obstacles on the way to achieving the goal, in societies dominated by patriarchal values and patterns of behavior, which is a characteristic of our culture. More often faced with the problem of role conflict of personal and business goals, they are put in the situation that to a great extent build immunity to frustration. Persistence in achieving goals implies a higher level of frustration tolerance, and hence the set of gender differences in this component of the achievement motive.
2. Educational level was not shown as a significant factor for achievement motives. The difference between them is only in components of the competition with other people, which is, as immature and less adequate form of manifestation of the achievement motive, often found in respondents with lower educational levels. As the category of respondents with lower education by their age structure is also younger, significant differences can be partly attributed to the age characteristics.

The authors interpret these results further by assuming that the competition with others as immature and less adequate form of manifestation of the achievement motive (in relation to the other components), is often present at younger ages; at this age, people are at an age when they are still looking for their place in society and strive to achieve the desired status.

3. METHODOLOGICAL FRAMEWORK

3.1. The problem of research

The impact that organizational culture has on an individual's motivation is essential for his life and for his work; among other things, organizational culture influences the achievement motive of its members, whether it contributes to the development of this motive or inhibits it. Management theory suggests a multitude of types of organizational cultures, indicating that each organizational culture is from practice unique, more or less, discretionary; the most widely used typology is the typology of Charles Handy, which, among other things, allocates the type “culture of task”, which due to the characteristic positive relationship with achievement, sometimes called the “culture of achievement”.

The problem of research can best be presented in the form of a question: Is there a connection of the dominantly present organizational culture and levels of achievement motivation of students employed in RTV Vojvodina?

3.2. Subject of research

The subject of this study, are the relationships between the present dominant organizational culture and achievement motives of employees in RTV Vojvodina.

3.3. The aim of the research

The overall objective of the research is study of the connection of dominantly present organizational culture and levels of achievement motive of employees in RTV Vojvodina.

The specific aims of this study are:

1. Diagnosing the most predominant organizational cultures and subcultures in RTV Vojvodina.

2. Examination of differences in expression levels of achievement motivation among employees in different sectors and newsrooms.

3. Testing inter-gender differences in expression levels of achievement motive of respondents.

4. Examination of the differences in expression levels of achievement motive of respondents with different levels of education.

5. Examination of the differences in expression levels of achievement motive of the respondents in relation to the position and length of service.

6. The existence of differences in perception among respondents in type of organizational culture in relation to socio-demographic characteristics of gender, level of education, place of work, length of service.

3.4. Tasks of research

1. Determine the existence and nature of the correlation between organizational culture and achievement motives in respondents.

2. Diagnose the most dominant organizational culture and subcultures in RTV Vojvodina.

3. Examine differences in the expression levels of achievement motivation among employees in different sectors and newsrooms.

4. Examine inter-gender differences in expression levels of achievement motive of respondents.

5. Examine the differences in expression of the levels of achievement motive of respondents with different levels of education.

6. Examine the differences in expression levels of achievement motive of respondents in relation to the position and length of service.

7. Examine differences in perception among respondents in type of organizational culture in relation to socio-demographic characteristics of gender, level of education, job, length of service.

3.5. Hypotheses of research

General hypothesis:

There is a statistically significant correlation between the present dominant organizational culture and achievement motivation among the employees of RTV Vojvodina.

Specific hypotheses:

H1: Dominantly present organizational culture is the culture of power.

H2: There are present subcultures of role and task.

H3: There is a statistically significant difference in achievement motive of the respondents in relation to gender.

H4: There is a statistically significant difference in achievement motive of the respondents in relation to the workplace.

H5: There is a statistically significant difference in achievement motive of the respondents in relation to the level of education.
H6: There is a statistically significant difference in achievement motive of the respondents in relation to the years of service.

3.6. Research instruments

Testing employees of RTV Vojvodina will be made in two specific questionnaires:

1. For testing the achievement motive MOP2002 scale by Franceško Mihić and Bala from 2002, will be used. The questionnaire consisted of 55 closed questions with scaled division of one to five (1-5 Likert scale; five-level agreement); Five offered statements for each answer were:
   1. Strongly disagree;  
   2. Tend to disagree;  
   3. I'm not sure;  
   4. Tend to agree;  
   5. I agree completely.

   Respondent is circling one of the following assertions expressed their agreement with it.

   The questionnaire includes the following variables: gender, level of education, place of work, length of service.

   The dependent variables in this study were 55 items on the questionnaire for the measurement of the achievement motive.

2. For the assessment of organizational culture will be used specific instrument made by the author of this work, which consisted of evaluating aspects of the organizational culture, organizational culture characteristic of the task, according to Charles Handy. The questionnaire consisted of 15 closed questions with scaled division from one to five (1-5 Likert scale, five-level agreement); Five offered statements for each answer are:
   1. Strongly disagree;  
   2. Tend to disagree;  
   3. I'm not sure;  
   4. Tend to agree;  
   5. I agree completely.

   Respondent circling one of the following assertions expressed their agreement with it.

   The questionnaire includes the following variables: gender, level of education, place of work, length of service.

   The dependent variables in this study were 15 items on the questionnaire for the measurement of culture assignment.

3.7. Sample

The sample will consist of employees of RTV Vojvodina, consisted of the management and staff of the radio and the television (all structures - professional services, journalists, directors, technicians, editors, web). The sample will be deliberate, and will consist of approximately 200 respondents, which is represented in relation to the number of employees and will enable us to conclude with high certainty about the correlation between organizational culture and levels of achievement motive.

3.8. The organization and flow of research

The research will be conducted in October and November 2012. year. We expect that the questionnaire will be completed within the 30 minutes.

Management RTV Vojvodina was offered with insight into the final results of the research.

3.9. Methods and techniques of research

In this paper, multiple methods were used in the research process. Combined are qualitative and quantitative approaches, the so-called triangulation method. This method was chosen because it is complex and combines different paradigmatic systems into a single cabinet. Techniques and tools are selected in the descriptive a research method that is appropriate to the object and purpose of research.

Statistical analysis of results:

Data obtained in this study will be analyzed with the statistical package SPSS. The statistical procedures in data processing will be done as follows:

- Descriptive statistics of variables (frequency, percentage, arithmetic middle and standard deviation);
- Analysis of the main components the reduction of the initial set of variables will be set and the latent structure of the space by measuring the scale of the achievement motive.
- For the purpose of determining the existence of differences in achievement motive two canonical discriminant analysis will be done.

Quantitative variables are the factor scores on Promax factors extracted in the area of measuring of the questionnaire for achievement motive and summing the score on the questionnaire, with which the overall achievement motive of respondents was operationalized.

Qualitative analysis of the results:

The results as their statistical elaboration will be analyzed qualitatively by linking statistics with context.

4. INSTEAD OF A CONCLUSION

The obtained results will be possible to interpret in different contexts and use them as a basis for the planning of development of human resources that would be focused on parameters such as improving work efficiency, increasing satisfaction of viewers...
The obtained results will be used as the basis for monitoring the further development of achievement motivation among employees, and as a basis for changing the type of organizational culture.

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LifeLong Education – Paradigm of the Age of Knowledge

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Abstract: Standard form of organizing education in Serbia does not meet the criteria of contemporary business communication and successful actions. Main objection to current educational system is its inadequate orientation towards real needs of economic sector. Educational programmes on universities do not contribute to developing the staff that would adapt and respond to all the requirements of modern business in contemporary conditions. Starting from the assumption that strategic development and competitiveness of a particular state depends on the quality of its human resources, it is important to consider the importance of educational system in Serbia and investments in education quality improvement, through the prism of the attitudes of managers and private and public companies.

Key words: education quality, competitiveness, lifelong education, knowledge-based economy.

1. Introduction

Quality of both formal and informal education is one of the foundations of development of human resources competitiveness.

Increase of significance of education is related to increasingly complex and networked world economy. Therefore, in 21st century, there is a growing need for well-educated workers.

The nature of employment is changing. Global trend is employment of highly-educated specialized workers. Production and services are based on specific knowledge, which includes manufacturers of the most advanced, high and medium technology and their main users. Educational systems need to be adapted to all these trends. Therefore, in Serbia one of the most significant questions is related to the achievement of high level of quality of the education of entire population.

Except the challenges of global economic game and the need of transforming the economy and social order, Serbia also faces with requirements of fulfilling the criteria for EU membership.

Joining EU sets the requirements for building educational system before Serbia, which would provide highly professional and competent labour, which can compete with employees from other countries, EU members.

In the following few years, Serbia needs to reorient on industries and jobs based on knowledge, as well as economic growth based on innovations.

In such conditions, employees will have to have the ability to rapidly change workplace, have direct cooperation with users, manage themselves and work environment, participation in lifelong learning.
In March 2000, European Council has adopted Lisbon’s goals, which represent the general objective of EU: “... EU should become the most competitive and dynamic economy in the world based on knowledge, capable of sustainable and economic growth, better jobs and higher social cohesion.”

In achieving this goal, the Education Council that consists of ministers of education of member countries have adopted the Report on concrete future goals of educational systems which was in March 2001, under the name Stockholm conclusions, accepted by European Council in Stockholm. (OECD, 2001. The Well-being of Nations)

This report represent a framework approach to the policy of national education for member states based on three goals: Improvement of quality and productivity of education and improvement system in European Union, Providing the entire population continuous availability of learning, Opening the system of education and improvement of EU, as the rest of the world does it. (Savet za obrazovanje, “Radni program”, mart. 2002., http://ue.eu.int/pressData/misc/69810.pdf)

2. METHODOLOGICAL APPROACH

2.1 Subject, goals, tasks and hypothesis of the paper

The set subject of research requires the analysis of the goal:
- examine the attitudes of managers regarding the necessary knowledge for the work of manager.

Therefore, the following research tasks are set:
Examine the following in management of the companies: 1. Knowledge, skills and abilities that a managers should possess, 2. What should the management students learn, 3. What should the plans and programmes for educating the managers look like, 4. Evaluation of the cooperation of the company with universities

Based on the above-mentioned, we set the hypotheses of research:
- Tacit knowledge is those that defines knowledge worker and explicit knowledge is only a tool for the acquisition of tacit knowledge through appropriate conversions.
- Necessary precondition of innovativeness of organization is identification and development of tacit knowledge of employees.
- Enterprise is not taken as an organization that fosters the learning of all its members and it constantly transforms itself.
- there is a significant statistical difference between the attitudes of managers of public, joint stock and private companies.

Variables of research

By the review of literature and some previous studies, variables of our research are divided into: independent (plans and programmes of work, methods of the implementation of teaching, attitudes of managers regarding the knowledge required for a job), and dependent (applicability of knowledge in organizations).

Research sample

Research has included the following companies: NIS Naftagas, Novi Sad, NIS, Oil refinery Novi Sad, NIS, Oil refinery Pančevo, NIS, General services, HIP Petrohemija JSC Pančevo, Azotara, Pančevo, Žitoprom JSC Šid, Luki komerc Ltd Pećinci, Kožara JSC Ruma, Andrijašević Ltd Ruma, Anoxsoft Ltd Subotica, Fenix International Ltd Subotica, M.A.T. Ltd Bačka Palanka, DDOR Novi Sad, JKP SPC “Vojvodina”, Novi Sad, JKP “Gradsko zelenilo”, Novi Sad, Rotor Ltd Novi Sad, Aleksandar Ltd Novi Šad.

Methods, techniques and instruments of research

Multiple methods in research process were used in this paper. Qualitative and quantitative approach were combined, so-called triangulation method. Precisely this method was selected because it is complex and it relates different paradigmatic systems in a unique corpus.

Techniques and instruments were chosen within descriptive research method, which is appropriate to the subject and goal of research. In addition to this, analytic-synthetic and statistical method (X² test) were applied.
From research techniques in the process of data collection, we have applied: interview, survey and scaling. Instruments that was used consisted of:
- questionnaire by which the attitudes of managers regarding the knowledge required for the job of a manager were examined.

**The sample of managers-respondents in companies**

Studying the attitudes and opinions of managers in companies in Vojvodina regarding the required knowledge and skills for the job of a manager, the manner and quality of studying, they way in which curricula should be formed and regarding the own company, was done on the sample of 320 managers. Sample included managers of public and private companies of different managerial level, so that observation of problems would be as better and objective as possible. Research was carried out at the end of September and beginning of October 2011.

Managers have filled in the questionnaire in their companies and the sample was appropriate.

**Questionnaire consists of 4 sets of questions. The first set contains 18 questions by which attitudes of managers on knowledge, skills and abilities that a manager should own are examined.(Arsenijević, O. Ristić, D. Bubulj, M. 2010)**

With the claim that „manager should plan“, 100% or respondents agree.

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100% of managers examined claim that a manager should possess organizational skills, as well as knowledge and skills to organize the work.

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## Table 4

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## Table 5.

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</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>273</td>
<td>85</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>47</td>
<td>15</td>
</tr>
</tbody>
</table>

100% of respondents believe that manager should also maintain the personnel policy of a company, as well as to lead and control. We conclude, according to the analysis of these few questions, that the examined managers believe that modern educated manager should be the person with knowledge, skills and abilities from different fields of business.

After the analysis of answers to previous five questions, we can conclude that faculties of management are facing with a very difficult task to answer to such requirements of employers. Since the majority of claims refer to practically applicable knowledge, answers obtained from respondents confirm our additional hypothesis set at the beginning of the research: tacit knowledge is the one that defines knowledge worker, and explicit knowledge is only an additional tool for acquiring tacit knowledge through appropriate conversions.

Having in mind that 100% of respondents have replied that „manager should respect client’s wish“, we believe that all the respondents are aware of the new market paradigm – production for known buyer.

## Table 6.

<table>
<thead>
<tr>
<th>Manager should respect client’s wish</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>320</td>
<td>100</td>
</tr>
</tbody>
</table>

In addition, 100% of respondents confirm that manager should make decisions analytically, as well as that it should use multi-functional teams that are oriented on buyer’s needs.

## Table 7.

<table>
<thead>
<tr>
<th>Manager should make decisions analytically</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>275</td>
<td>86</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>45</td>
<td>14</td>
</tr>
</tbody>
</table>
Table 8.

<table>
<thead>
<tr>
<th>Manager should use multi-functional teams that are oriented towards buyer’s needs</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>320</td>
<td>100</td>
</tr>
</tbody>
</table>

We conclude that very high awareness of the needs of teamwork is present in case of respondents in multi-functional teams, as well as the necessity of various skills and knowledge for doing business in the market, which also confirms the hypothesis that tacit knowledge is the one that defines knowledge worker and explicit knowledge is only an additional tool for acquiring tacit knowledge through appropriate conversions.

Table 9.

<table>
<thead>
<tr>
<th>Manager should bring structural and organizational barriers for the purpose of acceleration and quality of the work process</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Mostly no</td>
<td>172</td>
<td>54</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>126</td>
<td>39</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>17</td>
<td>5</td>
</tr>
</tbody>
</table>

However, when it is asked from a manager to lead a company by bringing down the barriers of organizational structure, distribution of answers is somewhat different. Namely, only 44% of respondents agree with this claim, while 56% of them are not ready to lead without a strong organizational structure.

Table 10.

<table>
<thead>
<tr>
<th>Manager should encourage frequent, informal communications out of traditional borders</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Mostly no</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>207</td>
<td>64</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>32</td>
<td>10</td>
</tr>
</tbody>
</table>

This means that our companies are still based on postulates of classical industrial age and that our managers are not yet aware of the revolution which occurs in business and production in the world, as well as the need and necessity to move to a new way of doing business.

Big number of respondents, 74.69%, believe that manager should encourage more frequent, informal communications out of traditional borders. Such a distribution of responses is slightly in collision with responses to the previous question. However, it points to positive progress, even in building organizational climate and culture.

Table 11.

<table>
<thead>
<tr>
<th>Manager should create close relations with buyers developing performances and loyalty</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>236</td>
<td>74</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>78</td>
<td>24</td>
</tr>
</tbody>
</table>
Table 12.

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>236</td>
<td>74</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>78</td>
<td>24</td>
</tr>
</tbody>
</table>

Road to success in business leads through satisfying desires of buyers, starting from what the product should be like, which characteristics its should own, within what period it should be produced and in which way it should be delivered to the buyer, to the price of the product and payment manner, terms of servicing... Of course, this means that buyer should be known in advance. From the responses of 98% of managers, it can be seen that this is precisely how they perceive the relations with customers.

Table 13.

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>55</td>
<td>17</td>
</tr>
<tr>
<td>Mostly no</td>
<td>123</td>
<td>39</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>122</td>
<td>38</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>20</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 14.

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Mostly no</td>
<td>138</td>
<td>43</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>121</td>
<td>38</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>15</td>
<td>5</td>
</tr>
</tbody>
</table>

From distribution of answers to these two questions, it is obvious that managers of our companies still do not understand the necessity of learning in the workplace. This confirms the hypothesis that enterprise is taken as an organization that fosters learning of all its members and it constantly transforms itself.

Table 15.

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>65</td>
<td>20</td>
</tr>
<tr>
<td>Mostly no</td>
<td>137</td>
<td>43</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>106</td>
<td>33</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

Delegation of authorizations is still slippery slope when it comes to our managers. From distribution of answers to the question „whether a manager should authorize“– 37% yes, 63% no – it is clear that the respondents believe that authorizing shouldn’t be done and that they can do the best themselves. Although quite the opposite could be concluded from the issue on authorizations, answers to the question „whether managers should respect and appreciate his time and the time of other people“ show a positive attitude in 98% of cases. It means that management students certainly, according to managers’ opinion, should learn to manage time.
Table 16.

<table>
<thead>
<tr>
<th>Manager should respect and appreciate his time and the time of other people</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>212</td>
<td>66</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>102</td>
<td>32</td>
</tr>
</tbody>
</table>

That „manager should be very well familiar with products themselves“ claim 65.32% of respondents. It means that managers shouldn’t only lead, but also know the entire work process in an organization.

Table 17.

<table>
<thead>
<tr>
<th>Manager should be very well familiar with products themselves</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Mostly no</td>
<td>99</td>
<td>31</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>109</td>
<td>34</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>100</td>
<td>31</td>
</tr>
</tbody>
</table>

In order to determine „which skills and qualifications are required for performing managerial job“, we have offered 9 options to managers. Here are the answers:

Table 18.

<table>
<thead>
<tr>
<th>Skills and qualifications required for performing a job of a manager statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading, writing and arithmetic skills</td>
<td>20</td>
<td>6.25</td>
</tr>
<tr>
<td>Technical skills</td>
<td>18</td>
<td>5.26</td>
</tr>
<tr>
<td>Communication skills</td>
<td>42</td>
<td>13.12</td>
</tr>
<tr>
<td>Ability to learn</td>
<td>20</td>
<td>6.25</td>
</tr>
<tr>
<td>Teamwork</td>
<td>38</td>
<td>11.9</td>
</tr>
<tr>
<td>Ability of self-management</td>
<td>13</td>
<td>4.1</td>
</tr>
<tr>
<td>Defining the problems and solving them</td>
<td>40</td>
<td>12.5</td>
</tr>
<tr>
<td>Analyticity</td>
<td>17</td>
<td>5.31</td>
</tr>
<tr>
<td>Ethics</td>
<td>12</td>
<td>3.75</td>
</tr>
</tbody>
</table>

The most important thing to managers are communication skills, ability to define problem and solve it, teamwork, reading and writing, technical skills, analyticity, ability of self management, ethics.

Attitudes of American managers that were reached by the research was done by Michigan Business School are almost identical: experiences of the real world, development of leadership, communication, human resource management, business ethics.

The second set of questions required from managers to answer what the students of management should learn. This set contains 7 questions. After graphical display of answers, we give also the comment and analysis.

Table 19.

<table>
<thead>
<tr>
<th>Students at the faculty should develop their skills to cope with different life situations.</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>236</td>
<td>74</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>84</td>
<td>26</td>
</tr>
</tbody>
</table>

To the statement „students at faculty should develop their skills of coping with different life situations“, 100% of respondents have given a positive answer. Management students have,
however, replied, even 66.67%, that they do not develop it at all at their faculties. As we have mentioned when analyzing plans and programmes of the faculty on which the research was carried out, **number of lectures and exercises is the same**. We have observed, also, that **only on two faculties**, out of five, **students’ practice is obligatory**, where they can primarily master the skills of coping with different business situations. Having in mind that employers consider this to be an important thing, it is up to faculties to find ways to develop the skills of coping with different life, and thus business situations with their students.

Table 20.

| Students should learn at the faculty how to communicate with other people in a proper and polite manner |
|-------------------------------------------------------------|---------------------------------|---------------------|
| statement                  | number          | percent |
| Not at all          | 0               | 0       |
| Mostly no         | 0               | 0       |
| Mostly yes        | 79              | 25      |
| Entirely yes     | 241             | 75      |

Answers to the question „students should learn to communicate with other people in a proper manner“ are 100% positive. Answers of students are distributed in such a way that they favour positive claims. The biggest number, even 73.33%, of teachers claim that students mostly learn how to communicate. Such a high percentage of positive answers to the second question is a fact that of five faculties examined, four study communications.

At the Faculty of Management, course study Media, communication is studied all four years.

Table 21.

| Students should learn at faculty how to cooperate with other people in the team |
|---------------------------------------------------------------|-------------------|-------|
| statement                  | number          | percent |
| Not at all          | 0               | 0     |
| Mostly no         | 15              | 5     |
| Mostly yes        | 130             | 41    |
| Entirely yes     | 175             | 54    |

Research results show that 95% of managers included in our research consider teamwork necessary for business. 70% of teachers at this faculty teach students basic team skills. Research results show that 57% of students at this faculty learn basic team skills. 33% of respondents, however, do not have the chance to be trained for teamwork. If we take into consideration the fact that research was carried out at five faculties that educate future managers, such a result is unsatisfactory. Future managers, who have not acquired basic team skills during their studying, they will not be able to fit into contemporary flows of business. Almost all managers examined agree with the statement that students at the faculty should learn to solve problems and make decisions.
Table 22.

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>176</td>
<td>55</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>142</td>
<td>44</td>
</tr>
</tbody>
</table>

From the answers of interviewed teachers, identically as from the answers of students to the same question, we can conclude that faculties that educate future managers do not include training for problem-solving. Namely, only 40% of teachers, which is by 7% less than in case of student population, believe that problem-solving is learned at faculty. 60% of teachers believe that the students do not have any opportunities to master this skill at the faculty.

Table 23.

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>132</td>
<td>42</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>183</td>
<td>57</td>
</tr>
</tbody>
</table>

For making decisions, it is necessary to observe and analyze the problem, and from previous answers we have concluded that problem-solving is not studied, so negative answers to this question are not a surprise. Namely, only 33% of teachers believe that students have an opportunity to learn how to make decisions. Those are the teachers from those faculties where students through their four-year training go through an experience in development of the project and work on professional practice. A fact that 67% of teachers believe that their students do not have a chance to learn how to make a decision is quite worrying. Managers who were included by the research entirely agree with the statement that students during studying should be given an opportunity to apply knowledge, skills and abilities from management through teamwork on projects. 77% of teachers examined, however, believe that their students do not have the chance or possibility to apply knowledge, skills and abilities from the field of management. Through teamwork on projects. The smaller number of 23% belongs to a group of teachers from the Faculty of Entrepreneurial Management and Faculty of Management, where students work on projects together with their teachers. This question also confirms main hypothesis and in accordance with it, the additional are set too.

Table 24.

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>126</td>
<td>39</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>194</td>
<td>61</td>
</tr>
</tbody>
</table>

In the last question of this set, it was asked from the managers to rank the most important educational fields during studies that are important for the job of a manager. The answers are presented in the following table.
Table 25.
The most important educational fields during studies that are important for performing the job of a manager.

<table>
<thead>
<tr>
<th>Field</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>economy</td>
<td>5</td>
</tr>
<tr>
<td>law</td>
<td>11</td>
</tr>
<tr>
<td>language and communication</td>
<td>1</td>
</tr>
<tr>
<td>entrepreneurship</td>
<td>4</td>
</tr>
<tr>
<td>ethics</td>
<td>6</td>
</tr>
<tr>
<td>culture of life</td>
<td>7</td>
</tr>
<tr>
<td>mathematics and statistics</td>
<td>7</td>
</tr>
<tr>
<td>socio-political system</td>
<td>9</td>
</tr>
<tr>
<td>informatics</td>
<td>10</td>
</tr>
<tr>
<td>public relations</td>
<td>2</td>
</tr>
<tr>
<td>leadership</td>
<td>12</td>
</tr>
<tr>
<td>management and leadership</td>
<td>3</td>
</tr>
</tbody>
</table>

Third set of questions offered to managers refers to plans and programmes of education for management. It contains 5 questions. Firstly, introductory question of this set should give us an answer to the question to what extent the managers are satisfied by the existing education systems for management.

Table 26.
Education system for management satisfies the needs of enterprise

<table>
<thead>
<tr>
<th>Statement</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Mostly no</td>
<td>79</td>
<td>25</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>217</td>
<td>67</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

67% or respondents are mostly satisfied, 2 % entirely satisfied, 25% mostly not satisfied and 6% are not satisfied with education for management at all. This means that faculties of management should forms curricula for the subjects in conversation with employers and thus, to the general satisfaction, improve the performance of country’s economy.

Table 27.
The best model of creating the curriculum is through the vision of faculty’s management

<table>
<thead>
<tr>
<th>Statement</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Mostly no</td>
<td>213</td>
<td>67</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>78</td>
<td>24</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>22</td>
<td>7</td>
</tr>
</tbody>
</table>

We were surprised by opinion of almost 70% examined managers that curricula should be created through the vision of faculty’s management. However, distribution to the following questions has cleared such an attitude to some extent. Namely, about 50% of respondents believe that comparison to other similar educational institutions should be included in creation of curricula, and everybody believe that it should be done in meet planning with economy and its needs.
Table 28.

The best model of creating curricula is through comparing it with other similar educational institutions

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>36</td>
<td>11</td>
</tr>
<tr>
<td>Mostly no</td>
<td>131</td>
<td>42</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>126</td>
<td>39</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>27</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 29.

The best model of creating curriculum through adapting to the existing teaching staff

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Mostly no</td>
<td>262</td>
<td>82</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 30.

The best model of creating curricula is through meet planning with economy and its needs

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Mostly no</td>
<td>213</td>
<td>67</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>78</td>
<td>24</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>22</td>
<td>7</td>
</tr>
</tbody>
</table>

Combination in these three ways, according to managers’ opinion, would provide the best model of curricula.

The fourth set of questions refers to the evaluation of the enterprises of respondents. It consists of 6 questions by which we examine the cooperation of the company with the university in different fields.

Table 31.

Does your company cooperate with university in development of new products

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>40</td>
<td>12</td>
</tr>
<tr>
<td>Mostly no</td>
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<td>82</td>
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<tr>
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<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 32.

Does your company cooperate with university in providing practice and practical, real problems for training of students

<table>
<thead>
<tr>
<th>statement</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
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<td>75</td>
<td>23</td>
</tr>
<tr>
<td>Mostly no</td>
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<tr>
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<td>123</td>
<td>39</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 33. Does your company cooperate with university in improvement of the existing products statement number percent

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>47</td>
<td>15</td>
</tr>
<tr>
<td>Mostly no</td>
<td>266</td>
<td>83</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Entirely yes</td>
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<td>0</td>
</tr>
</tbody>
</table>

Table 34. Does your company cooperate with university in the improvement of the existing business processes

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Mostly no</td>
<td>284</td>
<td>89</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 35. Does your company cooperate with university in development of new business processes

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mostly no</td>
<td>320</td>
<td>100</td>
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<tr>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Entirely yes</td>
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<td>0</td>
</tr>
</tbody>
</table>

Table 36. Does your company cooperate with university in programmes of informal education (training) of your employees

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Mostly no</td>
<td>170</td>
<td>53</td>
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<tr>
<td>Mostly yes</td>
<td>136</td>
<td>43</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 37. Does your company cooperate with university in discovering new ways for increasing the satisfaction level of your buyers

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Mostly no</td>
<td>296</td>
<td>92</td>
</tr>
<tr>
<td>Mostly yes</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Entirely yes</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

Answers to the questions that refer to cooperation of respondent’s company and university are entirely devastating. There is no cooperation almost in all fields, except very little, some 2%, for providing the practice to students and programmes of informal education of employees, and negligible 0.63% for new ways of increasing the satisfaction level of buyers.

**X² analysis**

For comparison of the attitudes of company’s managers included in our research, we have used **X² analysis**. This analysis will point to
Possible differences in attitudes of compared categories, their mutual dependence, as well as degree of agreement, i.e. disagreement with certain claim. Simultaneously, it will enable us to confirm all hypothesis with high confidence. Analysis of the set of questions that refers to knowledge, skills and abilities

Table 38.

| The manager must destroy the structural and organizational barriers to speed and quality of the work process |
|---------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                                                       Not at all | Mostly no | Mostly yes | Entirely yes | Total |
| Md                                                                  5       | 108      | 25       | 2       | 140 |
| Mad                                                                 0       | 57       | 38       | 5       | 100 |
| Mp                                                                  0       | 7        | 63       | 10      | 80  |
|                                                                       5       | 172      | 126      | 17      | 320 |

Table F0

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Mostly no</th>
<th>Mostly yes</th>
<th>Entirely yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Md                                                                     2,19</td>
<td>75,25</td>
<td>55,13</td>
<td>7,44</td>
<td>140,00</td>
</tr>
<tr>
<td>Mad                                                                    1,56</td>
<td>53,75</td>
<td>39,38</td>
<td>5,31</td>
<td>100</td>
</tr>
<tr>
<td>Mp                                                                     1,25</td>
<td>43,00</td>
<td>31,50</td>
<td>4,25</td>
<td>80</td>
</tr>
<tr>
<td>5,00</td>
<td>172,00</td>
<td>126,00</td>
<td>17,00</td>
<td>320</td>
</tr>
</tbody>
</table>

Table F1

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<tr>
<td>Mp1</td>
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<td>1,56</td>
</tr>
<tr>
<td>Md2</td>
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<td>1072,56</td>
</tr>
<tr>
<td>Mad2</td>
<td>3,25</td>
<td>10,56</td>
</tr>
<tr>
<td>Mp2</td>
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<td>1296,00</td>
</tr>
<tr>
<td>Md3</td>
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<td>907,52</td>
</tr>
<tr>
<td>Mad3</td>
<td>-1,38</td>
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<td>Mp3</td>
<td>31,50</td>
<td>992,25</td>
</tr>
<tr>
<td>Md4</td>
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</tr>
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<td>Mad4</td>
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<td>0,10</td>
</tr>
<tr>
<td>Mp4</td>
<td>5,75</td>
<td>33,06</td>
</tr>
</tbody>
</table>

Table X²

X²=03,0225; df = 6; p = 0,01; X²k = 16,812; C = 0,49; Cmax = 0,70

Very high significance level points to different attitudes of managers regarding the bringing down of structural and organizational barriers for the purpose of accelerating and quality of the work process. Namely, the difference between managers of public companies, who agree with our statement in high percentage, even 79%, and two other groups of respondents, who disagree (public – 77%, joint stock – 57%, as well as 21% of the managers of private companies (coefficient of contingency is significantly)). Therefore, we can conclude that managers of private companies are by far more aware of the need for changes in business and internal communication, while managers of public companies still do not have a developed awareness on the necessity of changing business paradigm. As the structure is something that enables secure and easy leadership to managers, and transition to a new paradigm of leadership requires a different form of education and acquisition of particular knowledge and skills, as well as change of attitudes regarding the way of doing business for the economy based on
knowledge, we conclude that our economy is based on postulates of classical industrial age and that our managers are not yet aware of the revolution that occurs in the world in the field of business and production, as well as of the need and necessity to move to the new way of doing business.

Structure limits and prevents innovativeness in work, so, even by this question, having in mind the significant coefficient of contingency, we confirm our hypotheses:

Tacit knowledge is the knowledge that defines knowledge worker and explicit knowledge is only additional tool for acquiring tacit knowledge through appropriate conversions.

Necessary precondition of innovativeness of an organization is identification and development of tacit knowledge of employees. The company is not taken as an organization that encourages the learning of all its members and it constantly transforms. There is a statistically significant difference between the attitudes of the managers of public, joint stock and private companies where the research was carried out.

Table 39.
Managers need to enable teams to develop the power of knowledge in the organization

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Mostly no</th>
<th>Mostly yes</th>
<th>Entirely yes</th>
<th>Total</th>
</tr>
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<tbody>
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<td>88</td>
<td>27</td>
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<td>140</td>
</tr>
<tr>
<td>Mad</td>
<td>3</td>
<td>48</td>
<td>45</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>Mp</td>
<td>4</td>
<td>12</td>
<td>50</td>
<td>14</td>
<td>80</td>
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<tr>
<td></td>
<td>30</td>
<td>148</td>
<td>122</td>
<td>20</td>
<td>320</td>
</tr>
</tbody>
</table>

Table F

<table>
<thead>
<tr>
<th></th>
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<th>Mostly yes</th>
<th>Entirely yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Md</td>
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<td>53,38</td>
<td>8,75</td>
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<td>Mad</td>
<td>9,38</td>
<td>46,25</td>
<td>38,13</td>
<td>6,25</td>
<td>100</td>
</tr>
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<td>Mp</td>
<td>7,50</td>
<td>37,00</td>
<td>30,50</td>
<td>5,00</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>30,00</td>
<td>148,00</td>
<td>122,00</td>
<td>20,00</td>
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Table F

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Table X²

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>71,46185</td>
</tr>
</tbody>
</table>

X² = 71,46185; df = 6; p = 0,01; X²k = 16,812; C = 0,42; Cmax = 0,70

From the analysis implemented, it is obvious that managers of private companies have different attitudes than the other two groups of respondents. Managers of our joint stock and public companies still do not understand the need for learning in the workplace, as well as 20% of managers in private companies. Therefore, significance level is so high, but there still is a connection, because coefficient of
contingency is 0.42, i.e., high. This confirms the hypothesis that the company is not taken as an organization that encourages the learning of all its members and constantly transforms itself.

Table 40.

<table>
<thead>
<tr>
<th>Managers should encourage innovation</th>
<th>Not at all</th>
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<th>Mostly yes</th>
<th>Entirely yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Md</td>
<td>28</td>
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<td>7</td>
<td>0</td>
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</tr>
<tr>
<td>Mad</td>
<td>6</td>
<td>7</td>
<td>84</td>
<td>3</td>
<td>100</td>
</tr>
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<td>Mp</td>
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<td></td>
<td>45</td>
<td>138</td>
<td>121</td>
<td>16</td>
<td>320</td>
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</tbody>
</table>

Table Fo

<table>
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<th>Entirely yes</th>
<th>Total</th>
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<tbody>
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<td>37,81</td>
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</tr>
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<td>Mp</td>
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<td>30,25</td>
<td>4,00</td>
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<td>45,00</td>
<td>138,00</td>
<td>121,00</td>
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</table>

Table Ft

<table>
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<th>(fo-ft)2</th>
<th>(fo-ft)2/ft</th>
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</thead>
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<td>65,00</td>
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<tr>
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<td>81,00</td>
</tr>
</tbody>
</table>

Table X²

| X² = 177,5596; df = 6; p = 0,01; X²k = 16,812; C = 0,59; Cmax = 0,70 |

We observe exceptionally high significance level, as well as coefficient of contingency. Examined managers of private companies do not agree with our statement in 95%, managers in joint stock companies in 14%, and managers of private companies in 47%. This means that of the total number of respondents, even 57% do not agree with the statement that manager should encourage the innovations. Therefore, we can conclude that we have once again confirmed our hypothesis that the company is taken as an organization that encourages the learning of its members and constantly transforms itself.

3. CONCLUSION

Due to rapid obsolescence of knowledge and skills and due to general impact of globalization and rapid economic changes in environment, Serbia needs to be aware of the significance of investing in quality of educational system, especially higher education system. Improvement of education quality will have to result by the increase of market competitiveness of business subjects and national economy as a whole.

It is important to have in mind that competitive advantages are based precisely on the need of adopting the concept of lifelong education in
behaviour of market participants, both on individual level and the level of organization.

Therefore, condition sine qua non for further development and increase of competitiveness of Serbian economy and its subjects is quite certainly the acceptance of contemporary concept of lifelong education, which is applied for a long time and confirmed in the economies of west European countries.

We can conclude that lifelong education is not a short-lived fashion hit, but it is the manner and style of living in modern, exceptionally turbulent and changeable conditions of life and work – it is a new paradigm of fight for survival.

REFERENCES

MULTIMEDIA LITERACY - ONE OF THE CHALLENGES OF DIGITAL SOCIETY

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Faculty of management, Sremski Karlovci

VESNA ŠĆEPANOVIĆ
Faculty of management, Sremski Karlovci

Abstract: The last technological revolution - the digital revolution has enabled the convergence toward senders and recipients of information new meeting place - the Internet. A communication paradigm shift requires changes in all life areas - business, education, science, art, etc. Digital message, for the first time in the history of communication, in a single file can integrate image, sound, text. Virtual space establish an interactive, multimedia and multilateral communication. This enables active learning which involves information searching, the information selection and new cognitive structures building process. That structured knowledge achieved by personal cognitive engagement remains the learner permanent property.

Keywords: Digitization, Multimedia, Communication, Learning

MULTIMEDIA LITERACY AND NEW EDUCATIONAL PARADIGM

Considering only the XX century, we can see how the concept of literacy has changed. At the beginning of the twentieth century, the concept of literacy meant writing of own name, ability to sign. By the end of the thirties this term extended and meant the ability to decode text, readings and self expression through writing. American "National Literacy Act" of 1991, defines literacy as "an individual's ability to read, write and express in English, or computing and resolving problems at a level necessary for the functioning on the business and society in general, in order to achieve personal goals and to develop their abilities and potential" (National Literacy Act of 1991, Sec. 3). Authors of publication Digital transformation: A framework for ICT Literacy. Princeton, NJ: Educational Testing Services (ETS). Retrieved April 11, 2003 (Digitalna transformacija: Okvir za ICT pismenost) define literacy today as the ability of using digital technologies, communication tools and networks for access, management, acquisition, evaluation, and creation of information in order to function in the society of knowledge, or in other words, applied to the process of higher education, the student must be able to articulate meanings and express his ideas through a variety of communication media. This is also a definition of multimedia literacy.

Pedagogical approach or a new educational paradigm aims to find in a modern way, adequate to a time, with new technologies and global networked society, the most efficient route of transmission of the transformation of knowledge; it is the path that will provide students with the opportunity to such a retrieved knowledge, supported by critical thinking review and put into the virtual space of the world of ideas - the real world.

Such expanded ICT supported pedagogical orientation allows you to create true "community of learning" or "knowledge communities". This community includes everything from classrooms, schools, communities and the virtual environment available through the ICT and multimedia, in a word, all the "inside and outside the classroom." This means also the request for re-expanding of the concept of literacy which of course changed with the development of civilization, especially in the last hundred years. By adding the prefix multi, we obtain new word multiliteracy as a new form of literacy, which includes information, an interactive multi-lateral
communication and multimedia. Such approach achieves eternal pedagogical request put before educators: critical thinking, active learning and deeper understanding.

**Multilateral communication** among the community of learning / knowledge (interaction) includes the following relations:
- student – professor (and vice versa)
- student – student/team (and vice versa)
- student/team – virtual environment (and vice versa)

This allows personal cognitive engagement where the student gives a personal touch and identity to knowledge that gain in this way. Only the knowledge gained in such a way remains “in the permanent property" as a new quality.

Within the framework of the pedagogical concept of multiliteracy, educator reveals to students opportunities and ways to express themselves, their intelligence, and creativity, linguistic, literary and artistic talents. If this mode of expression is present, students can see themselves as creative, intelligent and talented. It also gives us the answer to the question of what it means to literacy and education for the twenty-first century - which is a new educational paradigm.

To comprehend the importance of ICT in education for the twenty-first century; let's look a cognitive process from information to knowledge:
- Locating / identification of information,
- Selection / selection of information,
- Integration / synthesis of information,
- Creation / new information, new knowledge, in-depth knowledge,
and a step further:
- Interaction/ the knowledge gained in such a way we "intersect" through the community of learning / knowledge - the real world
- Evaluation / argumentation, critical thinking, questioning,
- Re-creation / a new synthesis, a new quality.

Thanks to ICT, this process of scientific knowledge, of practicing science, has largely supported qualitatively and quantitatively. Now we can finally answer the question of what is a multimedia technologies and why they are important for the educational process.

### 5.1. Multimedia learning

Multimedia learning / teaching is a process of building an environment that will promote the acquisition of new knowledge. This environment includes:
- Defining the principles for designing multimedia tools, in accordance with the principles of human cognitive architecture;
- Hypermedia environment (information architecture);
- Cyber Space (interactive multilateral communication).

When we start talking about multimedia learning, in general, we need to define the following four elements of the process:
1. the concept of multimedia,
2. the concept of multimedia learning / teaching,
3. principles and guidelines for multimedia learning / teaching,
4. Ways of measuring the results of application to multimedia learning.

- Besides the already given definitions of multimedia, for now we can say that this is the presentation of educational content using verbal and visual media-medium. At the level of technology, multimedia means the use of different media, such as computer, monitor, projector, Internet, speakers, and the like, to deliver the information, or instructional content. From the viewpoint of material presented, multimedia indicates different forms of presentation, such as images, text, video, graphics, sound, animation. From the standpoint of sensory reception apparatus for image / text, multimedia addresses to the eyes and ears.

- If multimedia indicates on presentation with the help of words and pictures, learning refers to the construction of knowledge by the learner. Thus, we find that the multimedia learning is a design of knowledge with the help of words.
(written, spoken ...) and image (static, animated, mobile ...). There are, of course all contents delivered online via the Internet, such as hypermedia and interactive communication channels. For understanding is essential what kind of information was presented and how.

- The environment for multimedia learning then indicates on presentation rules and principles for the design of multimedia tools / presentation in a way that will help people build their own mental images, or knowledge.
- Learning results can be checked through tests of retention (memory as information presented), and as a transfer (the ability to apply information in solving new problems).

One should bear in mind that pedagogy is not yet able to provide clear and coherent guidelines for designing effective multimedia instruction. Despite some research, the results are not sufficient for scientific generalization. Regardless of the approach to research, the main question that arises for the researchers is: what we know about human cognitive architecture. There are two theories emerged on the results of research in the period 1988-2001, a cognitive load theory (Sweller) and the general theory of multimedia instruction (Mayer). Both theories believe that information should be presented so that the working memory of the learner is to be used as efficiently as possible. This particularly refers to multimedia presentation of information, since the learner has to integrate different sources of information such as text, image, sound, and cognitive overload can be a major threat to successful learning.

As for the media that conveys the message there are conflicting opinions. Some believe that medium is only a commercial vehicle that delivers the message, while others believe that each medium has its own specific essential feature, affecting the efficiency of the message that carries. Despite these differences, both theories are considered so important that it is not certain what some technologies can do, but how people learn with the help of multimedia and how working memory in this case affects the learning process.

5.2. Defining the principles for designing multimedia tools, according to the principles of human cognitive architecture

Cognitive theory of multimedia learning / teaching must fulfill the following criteria:
- To be a scientifically-based a theory must be consistent with the scientific knowledge of man's cognitive processes,
- To be verifiable means that the theoretical assumption should be validated with scientific research,
- To be proved empirically theory must be consistent with the results of application of multimedia learning / teaching,
- To be applicable it must enable the design of multimedia tools / applications that will contribute to the learning / teaching.

If we simplify the question, it would be: Do students learn better using only words or with words and pictures together? This issue is crucial for the development of the concept of multimedia learning, because all other didactic, pedagogical, cognitive and technical issues and their solutions derive from it. For hundreds of years, one and the only major form of teaching were the words - books. Verbal model of knowledge presentation was the dominant mode of transmission of ideas in the educational process. Then how multimedia can facilitate effective learning and teaching? Multimedia can enhance education if only recognizes the legality of the human cognitive system - if you understand how the human mind works. The human mind has two systems for information processing - one for verbal material processing and other processing of visual material.

Multimedia presentation is presentation of materials with words and images, which means it allows full engagement of brain information processing. If we describe one process with words and then with animated image (for example, the work of the internal combustion engine), the words and images are equivalent
ways of for presentation one and the same material. Pictures and words, although qualitatively different, they complement each other and that the material is easier to understand if the one who teaches mentally integrate visual and verbal elements of the presentation. Words are increasingly used to display the contents of the abstract and the image for more natural and obvious amenities. Therefore, it does not apply the old rule or the cognitive aspect of prejudice before that "one picture is worth a 1000 words." In an attempt to find a link between words and images, the one who teaches creates deeper understanding than is the case when using only words or images only. When we know what multimedia is, how the verbal and visual components are processed in the brain, only then we can answer how to design a multimedia environment, tools, principles, and policies that will enable efficient multimedia learning.

Computer technology enabled an explosion of visual presentation of material options, including a huge storage files (pictures stock) and motion pictures and animated videos. Optimism has grown rapidly, the tale of predictions were more and more, expectations were high and the results were very small. But this was not the first time?

When film was discovered, in early twenties of the XX century, the famous Thomas Edison predicted, "moving pictures are destined to revolutionize the education system ... Most teachers use the film in their classrooms ... "but predictions did not fulfilled, the book still remained unchallenged medium for education.

When Benjamin Darrow in 1932, founded the Ohio School of the Ear, he predicted that radio would "bring the world into the classroom, enable participants to listen to the best teachers and thoughts of the greatest leaders... And the radio receiver will replace the blackboard.” No point to say but, none of these expectations wasn’t met. ”

The third great hope was television, which in the 1950s of the last century was considered as the "open classroom" that allows "expensive education for little money." When BBC was founded as a public service in the UK, educational content was one of the most significant items, which kept up to date. Although television highest accomplishment has not been replaced, not even the most classic complement "bookish" verbal approach to education.

Computer technologies are significantly different from the film, radio and television, primarily because a computer needs to personalize the content of learning / teaching, but also because it allows two-way communication - feedback. But, besides that, high expectations from the computer assisted education are not met. Why? Is there anything wrong with these technologies? Or it is a wrong approach to these technologies? Instead of technologies adapt to the needs of those who learn / teach, people focus on the adaptation requirements of technology - how to approach information technology, more specifically, no one knows to whom it serves. In fact it is known that people are servants to technologies and not vice versa. It is a technology-based approach. Instead, when we know how the human mind works, we should answer the question: how to adapt the multimedia technology to enable more effective human learning, and how technologies can make us smarter, how they can broaden our cognitive capabilities.

This new word multimedia learning contains two terms: multimedia and learning. What we basically focus is a process of learning / teaching. There are two main goals of learning: memorizing and understanding. Memory is the ability of reproduction and recognition of presentation materials. Understanding is the ability to construct a coherent mental images, knowledge, which is expressed as the ability to cope in new situations, when you have to solve a problem that is not explicitly offered in the material presented to. The student offers a solution to the problem, which requires going "beyond" the presented material and information. The quality of knowledge is reflected in how well someone can use what he has learned. And from our basic approach to the learning process the function and range of multimedia tools depend. As we know, there are three basic approaches to learning: behaviorist,
cognitive of constructivist. In accordance with the pedagogical orientation we can observe and analyze three approaches to multimedia learning / teaching.

If we experience studying as a strengthening or weakening our connections between stimuli and responses, then the connection will strengthen when you response is followed by reward, and weakened if the answer is accompanied by a penalty. First, learning is then reduced to building relationships. Second, the assignment of students is to create answers and receive feedback (feedback) on the answers in the form of reward or punishment. Third, the task of a teacher (or one who designs multimedia tools) is to assign a reward or punishment. Multimedia is then a system for exercise (for example, Multi choice test) or a system for practicing the skills with provided feedback (trainer). For this approach can not say that it is wrong, but insufficient. This type of multimedia teaching / learning can be used if the goal is to facilitate learning of some specific skills or to check already gained knowledge. The game based on this principle of multi-media teaching is "Do you want to be a millionaire." This approach would correspond mostly to a behavioral model of teaching.

- Multimedia learning can be reduced to the process of collecting, storing and transmitting information. First, learning is then reduced to a simple addition of information in some a person's memory. Second, the assignment student is to receive information, he will be passively receiving information "from the outside" and stores them in memory. Third, business teacher, or one who designs multimedia tools is to present information. Fourth, the goal of multimedia presentation is delivering of information as efficiently as possible. Multimedia is then simply a system for the delivery of information, and the brains of students is seen as an empty container that teacher (or one who designs multimedia tools) needs to fill with information. Teacher / Professor / multimedia tools are only transmitters on the way to the storage of information (data warehouse). For this approach, as well as the previous one, it can not be said that it is wrong, but insufficient. If the goal is to "learn" isolated fragments of a whole, the information, then this approach has failed. This approach corresponds to the cognitive model of teaching.

- Multimedia learning as a knowledge construction is an approach in which the learner seeks to independently build a coherent mental picture, or knowledge out of the presented materials.

**Knowledge is the personal construction of the learner, and can not be delivered in the exact form from one mind to another.**

First, the results of two or more students learning with the same multimedia materials, are always different, peculiar and with personal characteristics. Second, the student is an active component that integrates experience from multimedia presentation along with a priori knowledge; he creates a coherent mental picture, a new knowledge. Third, the teacher's role is to assist the student in independent creation of knowledge. He gives instructions as support in some personal cognitive engagement. Fourth, the aim of multimedia presentation is not only "delivering" of information, but also provision of guidance how to process the information presented, where to direct a particular attention how to mentally organize information, and finally, how to establish a creative relationship with a priori knowledge. Multimedia in this case is a useful communicator, mediator, guide and help in construction of their own knowledge as a new quality. Multimedia learning / teaching promotes retention (retention) as well as a deep understanding. This type of learning / teaching fits to a constructivist approach and the model.

### 5.3. Working and permanent memory

For quality design of multimedia tools, knowledge about human cognitive structure and the way on how structures organize in process of cognition is required. First of all, it means to consider the complicated relationship between the working and the long term memory. One consequential and relevant multimedia approach to learning / teaching involves integrating our

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knowledge of human cognitive architecture and the knowledge of the principles of proper design of multimedia tools. Permanent memory plays a central role in the cognitive activities of a man. Everything in our volatile memory has been learned in the process of adaptation to our environment. All human cognitive activities are therefore determined by the information stored in our permanent memory.

**Learning is defined as a change in our non-volatile memory.**

Rote learning and learning with a deep understanding causes permanent changes in our memory. What happens in our volatile memory when a material is being "learned?" We present a cognitive process through the creation of schemes which allow for complex information to be categorized as individual elements. Cognitive structures or schemas are present in our minds as the symbolic structure of the letters and the language they use. Those are a combination of letters, words, phrases and extremely complex linguistic structures that we are able to recognize in our everyday life. The same goes for permanent knowledge, which can be considered structured as schemes where we store objects, beings, processes, relationships, procedures as unstructured information giving them a contextual meaning. These schemes are acquired over a long period of time and are placed in non-volatile memory. Learning with a deeper understanding is ongoing (re)construction of cognitive schemes as a permanent memory. From the perspective of multimedia, knowledge is retained in schematic forms of permanent memory, whether it is visual, verbal, spoken or written.

What about working memory? It is very similar to your computer's memory, i.e. RAM memory. If we define a learning process as a process that consists of three stages: selection of relevant information, organization of information into a coherent whole and the integration of information with relevant existing, priori knowledge, and we divide human memory on the memory for temporary storage of information (short-term memory) learning with a limited capacity, and the memory for the permanent storage of information (long-term memory) learning with a unlimited capacity, then we can define working memory. Working memory is a system that is responsible for processing information relevant to the enactment of the cognitive process. Working memory is the gateway between the outside world and existing cognitive structures permanently stored in memory (long-term memory). Due to limited capacity, working memory is a kind of bottleneck for cognitive processes. In multimedia learning, working memory capacity constraints play a major role. If the learner needs to simultaneously integrate a variety of information, such as animation and accompanying text, employment of the memory will be very high. Mental image of one of the elements (e.g. animation) will be active in working memory looking for an element that corresponds in a permanent memory. This is highly significant when priori knowledge of the element does not exist in non-volatile memory as already structured knowledge, then the working memory overload is a major threat to learning.

Another aspect of working memory, which is important for multimedia learning, is the existence of separate memory resources for different types of inputs. In the theory of Baddley, working memory consists of central executive and two storage subsystems: visual-spatial sketchpad and phonological loop. Visual-spatial sketch serves to process visual and spatial information. The phonological loop is specialized for acoustic and verbal information. The function of the central executive memory is to sync information from these two sub-memories. In multimedia learning a learner receives information in different forms, such as written text on the monitor and audio information from loudspeaker. When selecting media transmitting the message we should bear in mind that no memory should be overloaded. Do not let them exist simultaneously, because, if we have two visual or two auditory messages, if one of them is overloaded (visual-spatial and phonological) working memory will not be able to mediate high-quality information and new priori knowledge.
When we work with new information, working memory in the interaction with long term memory allows an explanation, i.e. understanding. However, working memory has its limitations. According to research, working memory can hold about seven elements of information. Besides, without subsequent recurrence, the contents of RAM disappear in about 20 seconds. If we follow these simple rules when designing multimedia tools / presentations, the new information will have the opportunity to become an integral part of the (re)structured knowledge in a non-volatile memory. It is called a retention or detention. Otherwise, the new information will be kept in the working memory maximum of a few seconds, and then disappear. This limitation is a central requirement which arises when designing multimedia tools / presentations. Neither in this approach of differentiation of two channels for processing information, there is no complete agreement. The approach which focuses on how information will be presented, differentiate a different stimuli:

1. verbal stimuli (spoken or printed words),
2. nonverbal stimuli (images, animations, video, background nonverbal sound, music).

One channel processes verbal material, while other processes - image material and nonverbal sound. This approach does not take into consideration sensory / sensory origin of stimuli, so the spoken word is of auditory origin while printed word is of visual origin. It is the same with picture which is of visual origin, while background sound is auditory. A decisive factor which determines the channel for processing of information is verbal and non-verbal nature.

Approach that focuses on the sensory / sensory origin of information / stimuli distinguishes:

1. visual stimuli which "are coming" via sense of vision (printed text, pictures, video, animation),
2. Auditory stimuli which "are coming" via sense of hearing (spoken text, background nonverbal sound, music).

One channel then processes visual information presented, and the second channel audio information presented.

We can see here that medium is main cause of differences in interpretation printed on-screen text, non-verbal background sound, music.

Simultaneous use of both subsystems can increase the capacity of working memory. A person's cognitive architecture can be developed thanks to astonishing and diverse relationship between working memory and long term memory. Information stored in non-volatile memory as structured a priori knowledge can significantly extend the working memory. Then we can talk about "permanent working memory." If we receive any new information with which we are not "familiar" (which we have already in some form in structured non-volatile memory), then the limitations of working memory is critical to our learning. The more information out of the long term memory (of a priori knowledge) we use in the processing of new information (context), the limitations of working memory are lower. Extreme opposite situation is when we work with information already incorporated into the permanent memory as automated schemes (such as.
speaking their language, playing the piano) then the working memory is not at all important.

5.4. Active learning

Three processes that are essential for active learning are:

- selection of relevant material, contents of learning,
- organizing of selected materials,
- Integration of materials with a priori knowledge.

Selection of materials occur when a learner draws attention to the words and images of the selected material, the content of learning. This process involves bringing the material of choice from "outside" in working memory as a cognitive component of the system.

Organizing of materials include building structural relations between the elements (classification, numbering, comparison, generalization, ...). This process takes place within the working memory.

Integration of materials with existing a priori knowledge involves the construction of a new link between knowledge and of the relevant parts a priori knowledge in non-volatile memory. That process includes the activation of knowledge in long term memory, the code and processing in working memory.

Active learning, according to the scheme , represents information processing within sensory / sense memory, working memory and long term memory. Pictures and words are coming from the outside world as a multimedia presentation and enter the mind through sensory memory. Sensor memory retains in itself printed text and images as visual stimuli for a very short time. Also the spoken words and other sounds such as music retains as auditory stimuli. Central multimedia learning process takes place in working memory.

Working memory is a temporary station which performs active manipulation of information and knowledge as a conscious cognitive process. On the left side of the working memory is presented raw material (information entered from the outside world through the senses), as well as picture and sound. On the right side of the working memory is presented knowledge constructed in the memory as verbal and pictorial models. The arrow from "sound" to "image" represents a mental conversion of sound into the picture, and the arrow from the "image" to "sound" a mental image in the conversion of sound (for example, when we see the picture of the man, to create a mental representation of the word "man").

If we observe boxes which represent a multimedia presentation and sensor memory, the arrow between "image" and "eyes" means that the image is recorded with eyes, the arrow between "words" and "ears" means that the ears recorded spoken text, and the arrow between "word" and "eyes" means printed text that is registered with eyes.

The box that indicates the non-volatile memory represents a kind of storage for the learner. Unlike volatile memory, it can hold a tremendous amount of knowledge for a long time, but active materials handling, active learning, occurs in working memory. The process of integration of a priori knowledge and new knowledge is performed in a correlation between working and long term memory, as represented by arrows.

So, there are three stages in the processing of information (active learning), and these are the selection (images and words), organization (pictures and words) in verbal and pictorial models, and finally integration of these models with a priori knowledge.

Selection of words and pictures means concentrating on relevant words and images from presented material and creation of mental images of sound and image in working memory. Organization of words and images means building connections between selected words and images, and the creation of coherent (structured) verbal and pictorial models in working memory. Integration involves building of links between verbal and pictorial models with a priori knowledge, out of the long term memory. The way from the new information to the of knowledge is as follows: words and
images in a multimedia presentation, acoustic and iconic presentation in sensor memory, sound and image in the working memory, and verbal and pictorial models in working memory and knowledge at the end in non-volatile memory. On the presented schemes, with blue is marked a path which crosses the verbal and visual stimuli in the process of active learning.

Through relations of working and a long term memory, we can also explain the process of understanding. Understanding occurs when all relevant elements of information can be processed simultaneously in working memory.

Because of the limitations of working memory, when we work with new information, i.e. if we encounter a new material that we have to "learn", we have to organize and combine it in schemes we already have in non-volatile memory.
memory. Once constructed, schemes and automatisms advance to the point that all the essential elements / new information necessary for understanding the topic / content are processed in working memory, understanding occurs. Understanding, therefore, can be defined as simultaneous processing of information (of a priori knowledge and schemes with new information) in working memory. Schemes, organized information or a priori knowledge is structured, in the way that the information will be processed in working memory. If there is no relevant information in non-volatile memory, or they are not available, the decision / understanding can only be done randomly.

If schemes do not exist or they are unavailable to those who are faced with new information, the schemes that someone else holds can be used. In other words, the knowledge of other people can replace central executive memory of those which do not posses those schemes (structured priori knowledge). Instructors, those who are engaged in teaching, can provide instruction, multimedia tools, as a substitute for the missing schema. Instructors who are engaged in teaching, can provide instruction, multimedia tools, as a substitute for the missing schema. The instructor, a teacher must always keep in mind that a student who meets with new information and wants to incorporate them into the permanent memory (as a structured knowledge) has to process the information using a limited working memory. The working memory contains two independent channels for processing auditory and visual information. These features of human cognitive architecture have direct implications for the design of multimedia instruction for teaching / learning.

**Design principles of multimedia content**

As already mentioned, there are two channels for processing information, visual and auditory. Active learning with full effect requires simultaneous use of both channels for processing information. This means that simultaneous combination of spoken words and images enhances the effects of learning, since they are processed in different channels. It is important that the image and spoken text are semantically related to each other, to be able to participate in the construction of mental models.

In the event that, for example, the image is simultaneously combined with written text, this results in the so-called divided attention, because all the information arrive in working memory just by one, the visual channel. Then eye have to "decide" between the image and the written text, which reduces the effects of learning because less information is coming to a working memory and later to the integration of structured knowledge.

In addition to the simultaneous presentation of material, there is a possibility of a sequential presentation. If some images are too complex to be monitored simultaneously by the matching text, then image may alternatively, sequentially, to precede or follow. Studies have shown that the image should be preceded by the text, and if it needs to be repeated in several modalities in the textual explanations. Generally, it is better to follow the image, spoken than written text. At the same time the use of written and spoken text, along with image, is not recommended because it also divides attention between the image and the written text, and besides, a written text is always read faster than any person fails to pronounce it. This effect is called redundant information (redundancy effect). If one who learns has a high a priori knowledge in non-volatile memory, for him is a single source of information - image or text. If there are two simultaneous sources of information, it can also cause divided attention and time-wasting redundant processing of information in working memory. In this case it is more efficient to learn a priori knowledge of the non-volatile memory takes the role of "permanent volatile memory" (of which there were words) and thus help with the creation of mental (verbal and pictorial) model, and then the permanent coherently structured knowledge (knowledge). This can be expressed by and through the following principles:

- The combination of images and text, has a positive effect on the cognitive process if the a priori knowledge is on the lower level, and if it is at a higher level, this combination has a negative effect;
- If a written text is used, it should be presented immediately, spatially close to image;
• If a spoken text is used, it should be presented a time synchronously with the picture;
• If you use animation or video, use the spoken text before written;
• Do not add any written text in addition to / duplicate of spoken text, if the text is combined with the image;
• Do not use superfluous words and images, and do not add unnecessary sound or music;
• If written text and images can be presented simultaneously, present the image before the text;
• If a static image is combined with text, and the text is hard to understand, use a written text rather than spoken.

Cognitive process as knowledge construction activity includes the analysis and synthesis of information received through the sensory systems, their selection, organization, and integration. It is a process where a person who learns to construct, modify and verify their models of reality.

5.6. Hypermedia environment - information architecture

The essence of hypermedia is linking (linking) of data sources that may include text, images, video, sound or graphics. Freedom that allows the selection of a hypermedia form and flow of information, results in a hypermedia variety of educational tools and ways of presenting educational materials, the best adapted to potential users.

Hypermedia, linking, i.e. hyperlinking can be organized in several ways, making the information architecture. It can be a linear connection of information, where the user has to progress sequentially from the one piece of information to another, much like reading a book (where one precede the other). Hierarchical linking with hyperlinks includes structuring of information per relevance - importance. Unstructured or free hyperlinks connecting leaves the most room to create a hyper environment to the needs of the one who designs multimedia or hypermedia tools interface (hypermedia interface). Although hypermedia allows the learners to do it in a way that best suits their unique cognitive structures, performance and results of this type of learning depends on the level of knowledge. Those with higher a priori knowledge, models, and built structures in non-volatile memory, will benefit more from a hypermedia environment than those with low a priori knowledge. Therefore, hypermedia environment must also include other forms of multimedia that will be designed by educators (e.g., Power Point, printed and on-screen text, spoken text, video), which will replace the missing models and structures in the permanent memory of the learner in a hypermedia environment. Hypermedia is one of the multimedia tools that extend the virtual space - cyber space, which move information in myriad directions.

5.7. Cyber Space - an interactive multi-lateral communication

The essence of interactive learning is expressed in interdependence and interaction of entities that learn together. It is based on cooperative relations. In addition, the interactive learning a major determinant of active learning. That might be also called a self-learning. Classes may be materially, but primarily procedural, pedagogical favorable atmosphere for the introduction of interactive teaching. Interactivity and cooperation can be achieved with people who solve quests together, pulling in the same goals, mutual provide resources needed for troubleshooting. The social context of interactivity and cooperation is reflected through created opportunities for students to critically examine the data, analyze it in cooperation with others, and thus to reach a conclusion.

The classic ex cathedra lecture or teaching did not lose its significance with this demand for interactivity. However, it will only survive as a form of teaching. The main change that definitely needs to happen is a change in the position of a student in the classroom. Well-trained teachers, and students prepared for lectures, instead of retelling the content of lectures, with the help of high-quality books and multimedia techniques, with a common argument can interpret the content, instead of monotonous monologue recounting and
dictation. The existing one-way communication from the teacher to the student should be replaced with a larger number of two-way communications and - it needs to achieve multilateralism in communication. In this way, students will shift position in the learning process. So, for a successful school teacher and the student should have a specific, appropriate for a particular lecture introduction to the material, as it is a more effective to prepare for a lesson, rather than after completing later with learning from lectures, notes, textbooks. In order for dialogue and interaction to be successful, interlocutors should be competent to some extent, pre-addressed in matter, i.e. to possess a priori knowledge. Keynote lecture, materials stored on the CD, well prepared textbook, are a good starting point tool for this. Lecture combined with interactive multimedia learning is most effective in groups. The interdependence of the group is achieved through the division of labor, orientation towards goal, for example, is a problem solving.

The traditional lecture could be improved by using the interactive multimedia-based learning technologies. Lectures based on multimedia technologies can be realized in the following ways:

- Lectures with the help of multimedia applications that allow free choice of working time, offering a variety of sources of a priori knowledge in all types of media and formats, offering immediate feedback on the validity of responses, etc. Such a program for example is the Moodle. It is placed on the server of educational institutions. On that server, teachers store teaching content in any format (text, audio, video, etc...), so the students could read out they reviewed materials, download them, and through the self-study they achieve a certain knowledge. You can then do a multi-choice test and verify your knowledge.

- Another aspect of teaching based on multimedia technologies can be of the same content stored in a removable media - on CD / DVD. In other words, the multimedia content is not on the server of educational institutions but on a multimedia CD / DVD. Everything else is the same. Then Moodle can be used to achieve interactivity, but does not necessarily have to.

- The third type of multimedia course is an interactive virtual teaching or multilateral communication. Previously mentioned curriculums in all multimedia formats are stored on the CD / DVD. They serve as a priori knowledge with which can be achieved the necessary initial information, facts, allowing a necessary competence for argumentum dialogue or multidialogue. Multimedia CD / DVD can be used in off-line mode, without an Internet connection. To achieve interactivity and multilateralism in communication, teamwork in a virtual environment, it is essential that the multimedia CD / DVD is in the computer drive and the computer online - the Internet. Then, with the help of hyperlinks, hypermedia’s, e-mail, access to university databases, online encyclopedias, with the help of a web forum, chat, etc. we form cyber space or virtual space, which is bounded only by the technical support necessary for its existence and our creativity. Communication becomes interactive, multilateral, and team work, project and problem-oriented.

- The fourth aspect is addition of the third, and includes a conference call between the speakers in any location on the planet and students. For now it is limited with technical hurdles related to Internet bandwidth, bit rate, call quality etc.

The third aspect is the most practical, because access to educational facilities necessary for the acquisition of knowledge and competence is not dependent on access to the Internet - a multimedia CD / DVD works in off-line mode. If you rely only on Moodle, which is on the server of the Faculty, then the access to multimedia teaching content is available only in the online mode. Another reason is that the multimedia CD / DVD is portable and can be used on other people's computers. The third reason which speaks in favor of the third option is that the architecture of a multimedia CD / DVD can graphically and through content correspond to be the printed textbook, even to be a nice contribution that goes with the tutorial. The fourth reason is that the viewing of multimedia content such as video, sound a lot easier with a CD / DVD, rather than from the server of the Faculty in on-line mode. The fifth reason is that the capacity of 700MB CD or DVD with 4.7 GB does not burden the server of
the Faculty. And finally, the last reason is a nuclear-material base of CD / DVD, where virtual communication was achieved, while teaching has not entirely lost its materiality. CD / DVD remains in the permanent possession of the student who can use it in the future education in other objects or works. In addition, the circulation of the CD / DVD "from hand to hand," is a good marketing move by the Faculty.

6. Interaction and cognitive development of personality

Social maturity of the individual is the condition sine qua non for society maturity, of one nation. Society is composed of individuals, and ability of those individuals to think soberly, to think and capture a high-quality knowledge, to exchange information and to separate the important from the unimportant, to process information and create a new one, a new knowledge that rules with matter, represents a human resource on which of one nation, resource on which the future of civilization is based. Is there need for a stronger argument that speaks in favor to the institution of education? It is therefore, a responsibility on those entrusted with the education of the nations is huge. It measures with the responsibility for the nation's survival in a civilization on the economic rationality based on the sociodarvinism, a social selection through competition. The functioning of a society depends on the level of cognitive, emotional, social and work skills and competences that are acquired mainly through education. This requirement is especially justified nowadays, when it came to the laws of the market and when it was realized that the teachers are in the classroom for students. That education is a service, it is obvious that they will be the most visited colleges that provide students with a strong motivation to study and learn.

The consequence for this kind of concept of the educational system is unlocking the potential of personality, a total self-actualization, the realization of creative potential and constructing ourselves in the world. What is the role of educators / teachers in all of this? In the new circumstances, a successful educator / teacher is an opinion leader, expert consultant, a partner in a common task. In a society where flow of information was limited, the teacher was the owner of the information, the only window to the world - he was an authority. Today young people are living in a totally different world. The vast amount of information from diverse sources splashed all over every man. Young people are looking in them for what's hot, often more successfully than their teachers. What is the purpose of teacher in such a circumstance? The essence of the change in his role is that he should be less ready to provide knowledge and to help more in the acceptance and the selection of information to young people coming from different sources. Young people spent time using television, computers and the like, thus collecting information. It is a psychological background of information civilization which now belongs to the young. Be competent, now means not only possessing of knowledge but also know how to get information, and how to conduct selection of information.

It should be emphasized that information technology does not preclude or diminish the importance of teachers in the educational process, but gives him a more sophisticated role that reduces the time for the presentation of teaching content that students can easily read and more time to develop creative potential, critical thinking and development of understanding principle of solving tasks.

It's kind of a "change of culture towards culture of questions ... where books and other media, "come in front." Here the teacher is watching, listening, shifting the focus from research to inquire, on listening and to the better understanding. Their efforts are directed towards making your students sensitively, actively monitor, to perceive individual differences in thinking, feeling, learning to recognize deficits in communication and to be able to offer appropriate assistance "(M. Andevski).

Teaching is educational process. Is it by chance on the first place in this the compound a word of "educational" and then "education"? Its widest sense, as the educational goals of the transmission of “knowledge” is established as the total holdings of structured facts and
scientific information, and educational transmission of “values” on which a community in a moment of history base and maintains its functional sociability. Let’s consider the two functions separately.

Educational function as the transmission of knowledge in European civilization began to gain its form in early Renaissance. During the millennial reign of the church, in "Dark Ages", the only method of learning was the dogmatic method. From the twelfth century there is a demand for a "critical interpretation of sacred text - fixture to spread the doctrine of truth" (Abelard), a new dialectic, of course, in its reduced importance, which requires a connection of faith and reason. New religious feeling of intellectual west is reflected in the doctrine, saying that you can not teach what you do not understand. As a result of that, urban schools and universities are rising, which train "technicians reason" while theology desacralize itself, providing themselves to a secular community - universities. Universities have made a decisive step in the transition from theology to science. Through them, a new method was established, which was based on the opinions exactly determined by the law of language, scholasticism (conflict between realists eye universals and nominalists). In accordance with such a modified view of the relation God and the world, image of human society and the state also changes. The most significant change relates to the acceptance of human labor as an important moment of community identity. First of all, it was time of researchers, traders and missionaries. A modern European cities arise in which rehabilitation experience previously despised work, that will live through a reformation, mythologization and thus usher in a new social relationship - capitalism. In it, a work becomes of fundamental values for social life. Changing the fundamental values of modern European society, capitalism in emerging, opens up the development of science, the separation of the sacred and the profane. On this track were created various philosophical trends such as empiricism, rationalism, enlightenment. Common to all of them was an affirmation of faith in reason as the only path of learning about the world around us. The rapid development of science and scientific method, merging of science and technology in the service of production, create a new manufacturing venture of capitalism - industrialism. Capitalism as a social relation and its appropriate manufacturing enterprise - industrialism, feed themselves with knowledge. The institution of education becomes a fundamental value of capitalism, and from the second half of the nineteenth century till nowadays, economic and material prosperity of the nation is measured with a degree of development for the education system. Industrialism directly encouraged the development of education and science, because only and thus it might develop, remain competitive, providing material prosperity and profits. The education system was created as a transmission of knowledge from older to younger generations, as a preparation for future roles in society, while the teacher was the owner of knowledge having a role to transfer it on students so they could fulfill their working and social functions. The latest technological revolution that occurred at the end of the XX century, based on information technologies, took place in parallel with the intense political, economic and cultural globalization of the world. Manufacturing has become a mass in the true sense of the word (installed generation capacity in the world four times larger than necessary), consumption also. Shops and businesses are no longer limited to the space-time coordinates. The company has moved from an industrial to a postindustrial society, based on knowledge. But the notion of knowledge has changed. This could be illustrated through a new word, era of knowledge. Competitive advantage is one that has the know-how - knowledge of how to get to the new products and services. This requires a new type of man, the experts. He has to know to look for information, that make their selection, to be independent and creative, not to wait but to offer and provide initiatives. He has to be a designer of his own knowledge. As the main tool that stands available to him is an information technology and networked society. Accordingly, a new concept of education in which the student / student at the center of this process has to be built.
Correctional function of education, as the noted above reflects in the transmission of values which enable more or less harmoniously maintenance of man in his sociability. Whether achieved through education needed "consensus value" or just "class structure corresponding to the ruling elite," it depends on the ideological approach of the scientists. Besides the primary socialization in the family, in the process of education socialization into conformity with the fundamental values of society is woven into the curriculum. The ruling ideology as a political will to power certainly influences the definition of the fundamental values that go through the education in the curriculum. This can be done directly and openly (such as during communism) or disguised in various ways (as the in contemporary capitalist society). The educational component of the whole educational process aims to "teach" or "train" how and why to respect and appreciate fundamental values of society. Teacher in a new role as "first he (the teacher) and his disciples, a man who teaches, that his experiences, structures of thought and action brings personal interest to the process of communication in the classroom. His statements were not more or less true or false but those of his personal construction of reality. "Here is indirectly, through assertion question, that is, by affirming the imposed negation. Is it communication (students and teachers) only a transmission of information? No! It's more than that. It is the transmission of "structures of thought" interests, values, so we can easily say ideology of teachers to students. Also, is that how it should be? No! Is it possible otherwise? Does a political society, a system of education, a curriculum has the right to promote the values that they believe are the foundation of political, economic and cultural stability of the community? Are they except the "knowledge and skills" having the right to form a "standings" of the political future members of society -or community? How to separate the "knowledge and skills" from the "attitude"?

The new role of the teacher looks like this: "He (the teacher) is responsible for the organization of teaching, he structures, watches the weather, frameworks conditions and enters his competence in monitoring of learning of its students. He is responsible for creating an atmosphere in which there is respect for the group, it provides a stimulating and effective flow ... Constructivist teachers are jammers, harassers, and they are the inventors of new realities and new opportunities together with other inventors. "His last paradoxical assignment is to make him unnecessary."

Teachers are "harassers" of reality and values, and a request to eliminate themselves can be understood as a request to open up space for a personal cognitive engagement of students (educational objective) and personal re-evaluation of all values on which the social environment is based (educational objective). Request for creativity can not artificially separate the knowledge and values.

The new role of teachers in the educational process is: "Teacher as a learning companion, adviser, and facilitator, coach, very competent, relaxed, compassionate, tolerant and humble: a new image of teachers within the constructivist didactics and education / training of teachers should become their own image for new generation of teachers."

7. Virtual communication

Virtual communication is a completely new communication compared to existing, intrapersonal, interpersonal, communication in groups and mass communication. Analysis of these four classic forms of communication has shown that for every act of communication, it is of unusual importance a backlinks functioning, so-called feedback, which existence is a condition for messaging. In principle, each medium weakens direct feedback, especially the mass media, which reduce it to a negligible number of cases. On the computer network, for the first time in the history of human communication, we have the case that the medium allows direct feedback or reciprocity in the exchange of messages with an unlimited number of users. Users can be individuals, social groups and all numbers of profiles, organizations, institutions, and communication centers. The network allows a mass interpersonality and therefore virtually communicating can be rightly called interactively, hyperactive, universal, total,
The essence is the best affected by names interactive and hyperactive. The possibility of obtaining the direct feedback introduces a mass of computer networks users in the line of equal communication entities that may appear in the role of broadcasters or recipients, exchanging multimedia messages in real time or asynchronously. From the standpoint of Communications this new form of communication could be called interactively multilateral communication, and from the standpoint of information technology could be called hyperactive multimedia communication.

In order to make people prepare for this "Copernican turn" in their communities, and above all in their heads, it is necessary to prepare for the new virtual communication, such as when the printing press appeared, was necessary to make themselves literate or to pass a driving test to drive car. The digital revolution has changed our environment so much, that we ourselves have to change in order to survive in this new environment. As for the education as a source of culture, it can not, beyond a computer network and virtual of communication, be based on the linear logic of speech and phonetic alphabets. Modern education requires a new neighborhood because his goal is not passive reception of information, but above all - participation.

From a pedagogical point of view it is a constructivist approach to education, as well as project and problem-oriented cognitive engagement of participants in the education process.

While much of learning comes from teaching, the main part comes from the research, from re-finding a wheel for own pleasure. Until the advent of computers, a technology of teaching was limited to audio-visual devices and remote learning via television, which was simply reinforced the teacher's activity and passivity of children, computer and multimedia interactive learning through multilateral action, opens the possibility of full-constructivist approach to education.

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DIGITIZATION AND CONTEMPORARY ISSUES OF MEDIA ETHICS IN REPORTING IN CRISIS SITUATIONS

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Abstract: This paper remarks that the digitization and large-scale commercialism of electronic and printed media leads to uncompromising struggle for market, in which many of ethical codes are being violated. Such situation arises in all fields of work in media, but particularly extreme cases are noticeable in crises which often lower the ethical criteria of acceptable photographs, recordings and the follow-up texts that are being released in media. In this paper, based on analysis of digitization contents in media we discuss whether it is necessary to include new normative in present ethical codes, which would sanction the extreme examples of ethics violation. In the end, we accomplished connection between the need for bigger popularity/numerous edition in digitization era and cherishing the dignity of contemporary moral subject whose existence is jeopardized in ruthless media commercialism.

Key words: digitization, crises, ethics, media, normative, journalism, codes.

Introduction

Digitization of media in information and communication systems has brought numerous advantages and favours which it undoubtedly provides. New media technologies bring about changes on global media scene especially regarding reporting in crisis situations where it is crucial to convey quick, but correct and accurate information (Barović, 2009:114). Apart from mobile phones, Ipods and other technological segments, the focus of our interest are digital media, that is, the television as the most important segment in reporting in crisis situations. The lack of systematic education, consciousness and awareness in still unformed media space results in series of dilemmas but it seems that the most transparent problems are contained in what an average consumer of information can see / hear / read. The tendency towards the increase of circulation is diametrically opposed to the need for introduction of any kind of standards in journalism which after the 90s has experienced necrophilic apotheosis formed in the definition of journalism involving a combination of “blood and sweat” (Durman, 2003). Treating the media in such a manner, the media bought in the process of wild privatization by people who became rich in a doubtful way, brings a journalist in front of bare commercialization which does not distinguish a cosmetic product from news, a report or a cover story.

The problem is not in a sporadic violation of ethical principles and postulates which seem to be distant, unreachable ideals for many, but in developing the necrophilic sensibility within consumers of media contents (Barović, 2010:136). This almost systematic destruction of contemporary moral subject is expressed even when they are critically oriented to information provided by media. On the other hand, there are authors who see a journalist as a hireling in media industry, regarded just as one very profitable branch of market economy (Belsey Kieran, 1998:3).

Lest getting into moral discussion and arbitrary consideration of issue of ethics in media, we should conclude that all above mentioned reflect onto tolerance.
threshold of certain editors and journalists in the age of
digitization, who think that consumers of information can
bear seeing naked dead bodies, killed in unseemly
postitions, because they have seen even worse scenes
during the war, bombing and all the other possible
misfortunes that affected poor Balkan nations.

**Digitization – New Age of Media**

On the other hand, it should be pointed out that digital
media enable better quality of conveyed information,
which is especially important when crisis situations are
considered, as events and processes where each
information counts, because it often informs about lives
of great number of people. We should recall that when
tsunami in southeast Asia happened in 2004 the problem
in reporting was due to the bad signal broadcasted by
analogue television. Poor quality picture and
unintelligible sound in the first wave of reporting from
that crisis situation, brought into additional confusion and
panic among consumers of information. It is particularly
significant if we know that at that moment a great number
of tourists from Europe were staying in the region hit by
tsunami (among them there was a small number of
Serbian citizens).

Digital technology to great extent solves that technical
and technological segment which occurs in crisis
situations particularly, thus a shift to digital signal
represents a great progress when quality is in question
(Robin, Poulin, 2000). It should be highlighted that
digitization enables stereo and high quality “surround“
sound, with the capability of several sound channels in
one video record, representing new technological
possibilities which can also be applied in reporting in
crisis situations. “Good quality display represents more
than mere eye satisfaction. Observational experience
usually includes other senses, too. Collective sensation is,
in whole, indeed bigger than the sum of all its parts“
(Negropont, 1998 : 120). Digital radio also provides
greater quality preferences: “One of the first advantages
of this radio of future, in relation to the current traditional
radio, is extremely high sound quality, without possibility
of any kind of interference, rustle, weak signal, channel
mixing and etc. (sound quality as on a CD). DAB
(Digital Audio Broadcasting) uses new high-frequency
audio streams for several services in single block of
frequency which is also called multiplexing“ (Pralica,
2011:35). Digitization also enables us to follow and
understand a reporter i.e. media contents completely by
“translation on demand“, as one of the options, although
we do not speak the language. It is also an important
segment if we consider it in the light of crisis situations,
because although we do not speak some language we can
follow the subtitles, and understand what is happening in
the other part of the world, which was impossible in the
analogue system. The very linguistic dilemmas in crisis
situations may lead into panic because if, due to ignorance
of languages, we make a mistake in the number of injured
/ dead, it results in “negative chain reaction“, and in that
field, the advantage of digital media is most visible, but
that segment will be discussed in more details later.

One of the most important elements when we talk about
digitization of media and crisis situations is the possibility
of watching the specialized programmes, that is a choice
from informative programmes dealing with crisis. It is
particularly useful if we know that a big crisis situation
occured in a certain part of the world, and a consumer of
information, out of personal or professional reasons,
wants to follow development and solving the crisis. In
such cases, digital television is invaluably helpful,
because we have the option which analogue system could
not provide. Here, the capability of using EPG electronic
guide is obvious, which seraching for channels makes
easier and simpler, and also much faster and simpler in
comparison with teletext, used in the analogue system
(Barović, 2012). The given approach is very significant
for crisis situations, but at the same time it leads to
fragmentation of consumers of information which have
been noticed by certain authors: “By the introduction of
digital services the question of fragmentation of audience
and public sphere is actualized, social integrative role of
media is diminished, the profit from advertising is
decreased (due to extreme fragmentation of audience), or
perhaps, concentration of media, detachment of those
parts of society which cannot keep up with the cost of the
The possibility of watching several programmes, meaning more than one video content at the same time ("on demand"), is also one of the favours provided by digitization, a very relevant advantage, particularly in crisis (Fawzi, 2006: 14). That option is useful for media, crisis response specialists as well as specialized services which via media can follow the crisis to certain extent (that system is used worldwide, especially in the cases of enormous fire in the woods, overtaking a vaster region).

So far people with hearing impairment have mostly had a sporadic possibility to watch certain informative contents in which an interpreter was hired, while digital television enables subtitling and automatically synchronized watching. In that way, the circle of potential consumers of information expands and meets the needs of that target group. Thus, digitization does not mean only commercialization but has a humane dimension, too.

Globally, there are specialized media companies that deal with following crisis situations and reporting from critical regions, such as Al Jazeera or CNN, but there is a problem of language barrier. Digitization enables us to, although we do not speak the language, with the help of "translation on demand" as one of the alternatives, follow and fully understand a reporter and media contents (Lekakos, Chorianopoulos, Doukidis, 2008: 21-22). This possibility is particularly useful in crisis situations where a language barrier and not understanding just one word can result in wrong perception about the entire crisis (like for instance a number of victims and the amount of flooded area in certain region). Generally, the interactive system that digital television offers is one of the most obvious advantages with regard to analogue system (Sukosd, Isanović, 2008: 125-126). There are examples of language misunderstanding even when the same language is concerned. During the flood in 2006 on the Danube, the journalist in the newsroom misunderstood the reporter that in the village of Čerević there were 100 flooded houses and 400 homeless people, which was incorrectly launched as 400 flooded homes, (the entire village does not have so many houses – annot. by author).

Digital television opens up a series of benefits which can be applied in crisis situations, such as a digital studio, or virtual studio, especially useful in field conditions. “Special programmes for electronic graphics have been developed by means of which decor and background in a studio can be graphically generated. The procedure for setting up such an unreal – virtual scenography is known as a virtual studio. The main problem with generating a virtual scene is establishing relations between visual angle of a camera towards existing (real) scene and new virtual scene (which is generated by means of electronic graphics)” (Zdravković, 2009: 158). Since we have mentioned the issue of crisis situations as our main interest, where there are often examples of misfortuned and injured, definition and explanation of that media phenomenon should be set forth.

**Ethics and Crisis Situations**

Media ethics deals with different issues, philosophical problems and processes in a society, but human beings are the focus of its interest, directly or indirectly (Žaket, 2007). The same principle more or less stands for crisis situations which are based on individuals, groups or community processed by media in the given crisis context. Crisis situations, from media aspect, may be defined as: „... reporting on current events in which human lives and their movable and immovable property are endangered“ (Valić Nedeljković, 2007). This is a general and very broad definition which includes all types of crisis, but a very interesting definition of a crisis situation was given by Coombs saying: „Crisis is defined as a hint of a threat which is going to have negative effects if not been handled properly“ (Coombs, 2007:5). To avoid getting deeper into the matter, because a significant number of authors have given their own definitions of crisis situations, we will lay down a definition constructed upon research and consulting several relevant sources, saying: „Crisis situation for media represents an event or process which is potentially
threatening for a large number of people and their property and reporting from it implies protection of public interest and the right of consumers of media contents to be accurately, timely and objectively informed“ (Barović, 2012:18).

Crisis situations essentially can be classified into crisis caused by natural forces and crisis caused by human (un)conscious factor. Steven Fink composed a crisis situation life cycle which starts with a pre-crisis stage (Prodromal Crisis), then acute stage (Acute Crisis), chronic stage (Chronic Crisis) and the last stage is crisis recovery (Crisis Resolution) (Fink, 1986).

In order to understand better the relationship between media ethics and crisis situations in the age of digitization, it is necessary to notice the significance of contemporary moral subject- human being, who in a democratic and pluralistic society has a series of rights but obligations as well. Human rights are a broad category and range from the right to live and work up to the right to be informed or use global network – the internet. Human rights are rights to privacy, dignity, integrity, which is during crisis situations (but in states of emergency, different accidents and etc.) frequently relativized, absolutely violated or partly respected by media.

Does a journalist have the right to publish photographs and identity of the victim of a terroristic attack if a minor is in question, or a person whose safety is particularly delicate matter? Is it ethically acceptable to publish smashing record of a person died in a car accident as a warning to the other traffic participants to lower the speed? The same question can be posed in several ways but the essence lies in a professional responsibility, which is directly related to the concept of ethics in journalism. Some authors, like Merrill, absolutize the postulate of responsibility claiming that the code is unnecessary if we have responsible and conscious journalists, which is according to our judgement a bit exaggerated and very difficult to achieve in practice (Everette, Merrill, 1984:108).

Digitization of media, as we have pointed out earlier, brings series of conveniences for media, but on the other hand it also brings numerous disadvantages which are contained in the market competition where there is not much space for ethically acceptable behaviour. Apart from digitization, it should be stressed that the competition is additionally sharpened by economic crisis, because the trend of journalists „chasing“ after exclusive information is more than evident. “For media, an event is a raw material which passes through their filter, multiplies and finally is sold as a commodity. It results in, as Malović points out, commercialization of media imposing other standards of journalism: sensational, aggressive, superficial, brief, without explanation, as much blood, tears and suffering as possible, glamorous“ (Perinić, 2008:39). Journalist ethics is most transparent in treating a personality in a certain crisis situation or accident because every consumer of information will easily notice if identity of the victim is preserved, the face is visible on a photo or a record, the dignity of a misfortuned person is respected which Korni particularly emphasizes when he writes: “The third meaning of axiological determination of journalist ethics refers to the respect of human personality“ (Korni, 1999:56). Digitization may be significantly helpful or harmful when regarding those problems, all depending on its use and the consciousness of a journalist and editor.

The Code of Ethics and Working in Crisis Situations in the Era of Digitization

We think that the age of digitization represents a new era for media, and that it is necessary to revise certain aspects of a professional code, but firstly, it is essential to analyze the existing journalist code. Although it is possible to consider and examine numerous dilemmas via applied ethics, we think that in crisis situations it is extremely helpful to use basic ethical means reflected in vocational journalist code. By application of that professional “tool”, the possibility for manipulation and violation of ethical principles will be restricted to great extent resulting in reduced possibility for endangering dignity and human being as a central figure of every form of a crisis situation. “However, codes are considered as a serious attempt to at least recognize essential values and principles advocated by media organizations. They have
the function to establish common background where members of a profession can stand and the function of public relations by which public may know whether an organization attaches importance to ethics” (Dej, 2004:68.). That very segment of “common background“ is important to notice and highlight when we talk about the need for certain changes in the code, considered in the light of digitization and media conversion it brings along.

If we observe the institution of a journalist code we can assert it is not perfect, it can never answer all the questions and cannot foresee all the situations a journalist can get into in the field or a newsroom. Nevertheless, we think that the code is neccessary in journalism, and its purposefulness is especially evident in crisis situations. Under those specific circumstances, we can transparently see in some cases which ethical procedures in reporting distinguish a reporter who sticks to professional ethics from the one who does not. Compliance with ethical code significantly affects the credibility of a profession in the public eyes, but in the eyes of ethicists who clearly draw attention to inconsistency of journalists who, although the code exists, act according to their own discretion in numerous situations. “In democratic societies where media systems are mature and where responsible factors prevail, a moral sanction has valuable effects, because by imposing a sanction on certain media, they lose their reputation, and thus audience trust, their rating and circulation decrease, and their profits are reduced. Thus the media owners, journalists and editors try not to come under such sanctions.“ (Veljanovski, 2007 : 3).

If we consider the current code in Serbia which can be found on the website of Journalists’ Association of Serbia and Independent Journalist’ Association of Vojvodina, apart from the standard articles which regulate series of significant issues, we can find elements which refer to crisis situations, in article VI which regulates the right to privacy:

“1. A journalist should respect the privacy, dignity and integrity of people he/she is writing about. The right to privacy is reduced when public figures are in question, particularly public officers.

2. Journalists and editors should especially avoid speculations and posting insufficiently verified attitudes in reporting on accidents and tragedies with casualties or where material and other interests of citizens have been severely affected.

3. In reporting on events which include personal pain and shock, a journalist is obliged to adjust their question so that it reflects sympathy and discretion.

4. A journalist is obliged to make sure that a child is not endangered or exposed to risk due to publishing their name, photograph or record with their image, house or community they live in, or recognizable environment“ (italic is the author’s annotation).

Thereat in the article III of the Code, in paragraph 4. it is clearly stated: „A journalist is forbidden to use inappropriate, disturbing, pornographic and other contents which may have a harmful effect on children. (source: http://www.unsonline.org/sr-Cyril- CS/content/dokumenta/464/кодекс-новинара-србије.xhtml ).

In the most important parts it is clearly determined what is ethically acceptable in crisis situations because in paragraph 2. it is explicitly stated to avoid conveyance of unverified information about accidents or other crisis situations. The phenomenon of rush for the quickest possible posting of unconfirmed information can provoke not only disinformation but a serious stress among people whose relatives or friends may be at the crisis scene. Regarding the mentioned claim, the horrible example is the fire in hotel „Putnik“ in Novi Sad in 2007 where three people lost their lives. In that fire, a woman from Kragujevac died, but first unchecked information was that a woman from Subotica died, and journalists were kindly asked by firefighter officers not to release that information without checking: all the reporters acted rightly and did not release that information because it could have provoked panic among citizens of Subotica whose relatives were on business in Novi Sad. This is a rare bright example from journalist practice where at the expense of quick and exclusive information, journalists acted ethically and checked information before releasing it.
Paragraph 3. of journalist code regulates ethical need for interaction of reporters in emotional distress of misfortunened and their relatives which is here very often violated by publishing sensational texts and photographs from the scenes of accidents as well as from funerals, commemorations, religious ceremonies, organized for closest friends and family. The same situation is with publishing explicit photographs of dead people, when they are recorded in inappropriate or embarrassing positions and exposed to public, which can be summed up in a sentence “the first and the last role in media”.

From the point of view of theory of media and media ethics, there is an interesting example of a dead motorcyclist who was photographed from distance and for whom was impossible to be identified, and the photo was published in local papers in Novi Sad. The brother of the dead motorcyclist sued the papers for infliction of emotional distress because it was very difficult for him to bear public exposure of his brother’s dead body, although it was impossible to identify the person, except for the closest family. The court decided in favour of the brother and the papers had to pay him on the basis of violation of journalist ethics (the example is from practice – annot.by the author).

If we analyze the code we can conclude that the paragraph 1. is very problematic because it reduces the right to privacy when public figures are in question, which is misused by irresponsible journalists who use certain incidents for media exploitation, which ethically unacceptable. The best example is the car accident in which Toše Proeski, a singer, died and the tabloid Kurir on 08 March in 2008, under the headline ”Toše Proeski yet killed“, brought a report which was a classical speculation about possible intentional breakdown of dead singer’s vehicle (http://www.kurir-info.rs/clanak/kurir-08-03-2008/tose-proeski-ipak-ubijen , annot.: pay attention to the comments of readers). Although public interest for crisis situations and incidents when public figures are involved is great and thus commercial media make higher viewing/circulation, the possibility for their (mis)use in media is very disputable.

The similar problem is with the children of the people charged with a crime, and whose photographs are frequently published, although they have nothing to do with the crime their parents are accused of. From the standpoint of ethics, stigmatization of children for their parents’ offence is unacceptable, but the ethics is here overpowered by a desire for sensationalism, especially if public figures are involved.

When we speak about the need to partly change the code and to adjust it to new digital age, which is our media reality, several elements should be stressed regarding crisis situations. If we want journalists to report in an ethically acceptable manner, using the possibilities of digitization, it is necessary to indicate the following elements:

1. when reporting from crisis situations, it is required to be clearly indicated in the code that pixelization must be used when naked bodies are in question, or when victims are in an inappropriate position, as well as in a case of children.

2. it is essential to point out that every use of photo and voice montage is forbidden, because digital technology, having much higher technical level than analogue system, enables series of manipulations.

3. it is necessary to always warn consumers of information that the following media contents contains violent and disturbing scenes, which may have harmful effect on children.

4. secret recording or recording without consent of the speaker, as well as interception of conversation, should be strictly forbidden, which is also one of the possibilities provided by digital era.
It should be pointed out that changes of professional codes are acceptable and that in developed countries there is a trend of following both professional and technological changes, so minor interventions, according to capabilities of digitization, would contribute to the improvement of quality of current act.

**Conclusion**

Although in Serbia a great number of journalists have not attended specialized courses on ethics, although some have not read professional code, yet we can with certainty claim that a huge number of journalists can estimate what is an explicitly ethical and what a non-ethical procedure. However, in journalism it is not always simple to assess and evaluate, nor there is an agreement on all moral and ethical problems, because very often there arise dilemmas regarding sense/profession and emotions/feelings. Those dilemmas additionally multiply and radicalize with the arrival of digital era which offers great possibilities, but sets certain traps for people from media.

Every conscientious journalist before publishing photos of a dead driver thinks about two ethical moments. If potential victims in traffic notice fatal consequences of drunken driving or speeding, it will have preventive effect in lowering the speed or quit from driving under influence. On the other hand, publishing photos of injured person will surely cause additional suffering of parents, friends and acquaintances involved, which is an antipode to the mentioned prevention (Barović, 2010:38). Here digital technology offers Solomonic solution, since the record can be broadcasted but using pixelisation it will not be possible to identify the misfortuned person and thus not morally damage their dignity.

If we reject the attitudes and opinions which consider application of ethics impossible in media, we can conclude that everyday job of a journalist is directly connected to ethical challenges. Applying professional ethics or its violation are usually the most transparent in crisis situations. In crisis situations, there are often victims, injured people, traumatic scenes, disturbing photographs and reports, and thus in cases like those ethical issues are put in most disputable context, which may be solved with the help of digitization.

Media should advocate for the protection of public interest which means that consumers of information should get information and facts. On the other hand, especially in crisis situations, journalists should protect readers / viewers / listeners from stress, awkwardness and trauma caused by records and photographs of the dead and injured. It is natural that a journalist is forced to observe such scenes but a consumer of information should be preserved from emotional pain and visual discomfort, which can be easily overcome by application of digital technologies. All those who launch raw photographs and records in digital era should be reminded that media contents are consumed by minors which can greatly affect their mental health as well as persons with heart problems and other ailments risking negative reflection onto their health condition.

We can conclude that digitization and its possibilities have additionally developed the desire for greater profit from media companies bringing us to decadency of ethical standards and endangerment of dignity of a contemporary moral subject to great extent. In unsparing commercialization of media where everything has its price the most vulnerable are the consumers of information who are, in the media reporting on crisis situations, exposed to most severe necrophilic mental attack. According to nature of job of a reporter, who is engaged in crisis situations where it is impossible to avoid the dead, injured, to say the least the misfortuned, but the task of a journalist is not to transcend scenes of horror to the audience but to do his job in ethically acceptable manner, by adopting the possibilities of digitization.

One of the recommendation of this article is to insert a chapter into ethical codes- a chapter which will deal with crisis situations and their ethical aspects in the light of digitization. To spare consumers of information from watching horror scenes in media, we suggest code revision of articles which keep up with the new possibilities provided by digitization.

Finally, it should be pointed out that if a reporter in crisis situations have juxtaposition of exclusive information and
ethical norm, he or she should always commit to journalist ethics. With the proper use of digital technologies and their possibilities, we may say that professional dignity is being protected but also consumers of information in crisis situations. If we can give the shortest definition of journalist ethics which is intelligible to all consumers of information, it would be: What a reporter would not like his family or friends to see, he or she should not send it to the home of his/her readers/viewers/listeners.

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INTEGRATION OF COMPUTERS INTO PRIMARY SCIENCE TEACHING PROCESS  
- POSSIBILITIES AND LIMITATIONS 1

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Abstract: This paper analyzes the possibilities and limitations of computer-assisted learning in primary science teaching in order to show the prudence in applying new information technologies within educational context. The specific curriculum of primary science, a necessity for a direct contact with natural and social phenomena, a need to apply research learning and raise the application frequency of cooperative forms of work set before the teacher high requirements for the organization of teaching and educational management processes of primary science teaching. For that reason, the paper gives recommendations for the organization, based on the lessons of previous researches, as well as on personal experience.

Keywords: computer-assisted teaching, primary science teaching

1. INTRODUCTION

New media require change in teaching. These are the “media that are based on digital technology basics comprising multimedia elements that allow interaction between a user and a medium” (Helbig, Köhler, Lümmkenn Medienpädagogik, 2001, according to: Nadrlijanski, 2008). Learning with the help of new media such as computers and the Internet is possible from the first day of compulsory education. One of the tasks of the pedagogical scientific theory is studying and explanation of the learning process in the new media environment and searching for answers to questions asked within this context.

Information technology integrated into teaching can improve learning ability. The introduction of computers into the classroom is changing the aspects of teaching, because teachers have to combine new information - communication technologies with different learning styles. Computers, however, should be seen as tools necessary for the new learning technology that will facilitate students’ achievements. That means that teachers should be able to take advantage of computers for the application of, for example, problem solving learning or cooperative forms of learning during information collection, processing and presenting of the results aquired by students in the learning process, which will definitely affect students’ motivation. Some researches worldwide showed that integration of the new ICT technologies into teaching disables certain barriers, such as: difficulties in shaping the teaching content with the new ICT technologies in a timely manner (problems with hardware and software), limiting number of computers in the classroom (work on computers that have less configuration), the view of some teachers that they can teach students better with the help of traditional methods, belief of some teachers that a computer in teaching serves only to break up the monotony and to raise the motivation to work, as well as the reluctance of teachers to share their failures related to teaching units designed with the help of ICT just like there is a culture of sharing of “good practice” (Lim, Khine, 2006).

Becker (2000) argues that access to a computer at home is a major source of inequality in terms of students' ability to work with computers, so the schools should play a key role in helping children who do not have access to computer technologies. School experience in work with computers plays an important role in helping children of low socioeconomic status to develop the ability to work on a computer.

For the future of a student who will be a member of the society of modern information communication technologies, information literacy, that represents the corpus of “new knowledges”, is very important. There are several levels of computer literacy, with the majority of pupils in primary education being on the first level of computer literacy that implies technical understanding of information technology, which means learning of the techniques and skills in handling computers, the use of keyboard to enter data or search for information. It is a stage of playing, because children master the techniques and skills of how to use the keyboard very quickly while

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playing. A number of Elementary students, however, are on the second level of computer literacy that assumes a development of programming skills with the languages that some computers “speak” and are relatively easy to learn (such as Word). Taking this into consideration, it is inadequate to exclude computers entirely from regular class teaching, including primary science teaching. Although some primary schools have computer-equipped classrooms, students are rarely taught science content through the computer. This is partly due to the fact that many teachers still do not possess a sufficient level of computer literacy and partly because the students’ access to such computer classrooms is limited. But still, those are not the reasons to completely neglect learning in primary teaching science with the help of computers.

In our schools, there is still a large gap between IC technologies and teachers who should use them. Elementary school teachers (and other teachers) still use computers more for their administrative duties, for preparation of teaching materials and possibly to communicate with parents. The reason for this attitude toward information technology is the barriers that teachers have:

- Access to technology - it is often the case that computer classrooms are mainly intended for upper grades in elementary school, that a school has a small number of projectors and laptops or technologies are defective (poor access to the Internet, the old configurations that do not support new technologies)
- Teachers are not able to implement new technologies into teaching process
- Many teachers believe that the use of technologies requires more time, and that classroom students do not have enough ability to use them
- Professional development programs that do not give teachers enough guidance and practical examples of how to apply technology to the level of class teaching, i.e. they direct them only to training for technical use of computers

Regardless of the fact that there are teachers in our schools who are using digital media, we will not feel their benefits as long as the content is shaped in the old analogous way. Consequently, it should be considered how some other educational systems solved the problems that were created while the digital media, such as the computer, were continuously entering the classroom. The Turkish Ministry of Education, for example, invested considerable sums of money in the introduction of new information technologies in the primary and secondary schools, believing that this would solve the problem when in 1999 testing (TIMSS Third International Mathematics and Science Studies) and among 38 countries, Turkish students ended in the last rows according to the the results. It was soon realized that it would be more important to deal with modifying of the curriculum and the design of learning models by using new technologies in order to innovate the way students learn. In that sense, Turkey has conducted a research during which two students groups - experimental and control- were watched. The experimental group worked on specially constructed methodological learning model in the field of environmental science for which teachers were specially prepared and in which students were offered learning materials via the Internet, instructions for working at home, and detailed instructions for the exchange of ideas. It is interesting that both groups of students took the courses in computers and were able to use them in school. The results of this study showed that in a very short time both groups developed a positive motivation to work with new technologies - computers and the Internet in both groups, but the level of achievement of the experimental group was significantly higher than that in the control group (Cavas et al., 2004). The modern concept of primary science teaching follows the basics of revolutionary learning model (Dryden, Vos, 2004) which states that today everybody is a teacher and a student, that for the majority of people learning is the best when it is entertaining, that it is necessary for teachers to ensure the right environment and than the majority children will show a large amount of self-directing learning, that good teachers nowadays can do wonders through interactive electronic communications, that when students are fully engaged in learning, even the more complex information is easy to remember and can be adopted and memorized, as well as that each student has their own learning style that is individual as fingerprints, so that schools should recognize that and contribute to that, and, in order to learn something it is necessary to do it.

2. MANAGING INNOVATIONS IN SCHOOL

Today we can no longer talk about the implementation of one teaching method or a work form and its contribution to the quality of students’ achievements. Today we can talk about learning strategies that represent students’ teaching tools for processing of teaching materials. However, one should keep in mind that younger students organize the adoption of material harder than older ones, because they do not have developed metacognitive skills. A teacher’s task is to teach students how to learn, i.e. to teach them how to think. This means that their task is to teach students to independently create and implement a strategy for easier memorizing and learning. The strategy is not closely tied to the learning material, it is a generalized approach to learning. In recent foreign literature various classifications of learning strategies can be found, mainly with teaching and learning strategies. The following can be found among them:

- learning strategies to promote student’s learning (eg, map design, the use of media products)
- learning strategies oriented to cooperation (group and work in pairs, discussions, debates..)
- scientific discovery (eg, observation, research, questioning)
- graphic organizers (concept maps, mind maps)
- students' reports (eg, poster and e-presentations)
- information and communication technologies (ICT technologies): files, software with simulations and modeling, chat-rooms, e-mail,
multimedia technologies (electronic poster, video clips, audio, Internet ...).

It is considered that the management in educational industry is the assumption of a constant, continuous improvement and development of educational work, whereas it can be said that innovations are manageable category, because they are the assumption of that progress. Innovations are an important element of internal school reform. The reforms are mainly the initiators of innovations at school. However, schools are institutions that are predestined for permanent introduction of changes, as they monitor social changes (Milosević - Ješić, 2009). Common to all innovations is the improvement of the work process, which does not mean that innovation has to be something new, but that it is enough to be a novelty for the existing environment. The basic prerequisite for the implementation of the innovations is acceptance by teachers, but also their skills to use them.

Together with the changes in other areas of work in the past ten years, education has also faced numerous efforts to increase the success of the school. The aim of modern school is to become more efficient, effective and flexible. A prerequisite for the realization of a successful school is quality, creativity, innovation, speed of change and adaptation. This fact suggests that the school management should be based on systemic change of school.

School culture can have a positive impact on the learning process, as it can seriously jeopardize the achievement of the mission of the school. Modern trends in education advocate independent work of students, and this is possible only if there is a developed culture in the school that encourages students to face problems critically, who first tries to understand them, to understand the importance of going to school and which develops such atmosphere in which effective realization of the given activity is possible. The work quality standards of educational institutions (Ministry of Education and Science, 2010) in the frame of area 6 (Organization and Management of the School) states "leadership activities of the principal enable development of the school" as a result, which can be determined through the indicators: "Principal demonstrates openness to a change and encourages innovation" and "the principal encourages lifelong learning of all in schools."

Among the factors of the school culture, the evaluating of the employee’s achievements factor measures the degree of monitoring the achievements and progress of teachers by the principal or some outside institutions. This factor is usually the lowest rated factor in our environment, suggesting that teachers’ ideas are rarely valued by other teachers, that teachers are rarely rewarded when they are trying out new ideas, and that the principals do not value and do not encourage teachers enough to try out new ideas and to share these ideas with their colleagues.

3. AN INNOVATIVE APPROACH TO PRIMARY SCIENCE TEACHING CONTENT

Today, primary science teaching must foster „the culture of learning“. Instead of memorizing a series of facts, encyclopaedism and formalism, students should master the techniques of rational learning, and teachers should use such teaching methods, which activate the student, encourages him to self-learning, creative work and application of knowledge in everyday life. Focus of the modern teacher is on teaching methods for students. Teachers role in the learning process moves to the preparative phase of teaching, the classroom management, instructing students to independent acquisition of knowledge. Teachers in Serbia can been able to transform themselves into such teachers.

Modern primary science teaching requires from students to learn about natural-scientific methods and its procedures of learning. The natural-scientific procedures include: observing, describing, comparing, measuring, collecting and displaying of data, concluding and explanation of data, selection and connection of dependent and independent sizes, forming a hypotheses, planning the experiments, selection of materials and equipment for research, report on research, etc. Starting from the third grade, students should distinguish the following stages of research: problem setting, selection of materials and equipment, procedures - ways of conducting research, collecting and recording data and bring the conclusions (De Zan, 2004).

Modern science learning involves asking questions about objects, organisms, phenomena in the environment. It also means the planning of simple researches, use of simple equipment and tools for gathering information, use of data in explaining the research, as well as the reciprocal communication between students in discovery and explanatory phases.

Students’ knowledge management is the process that includes planning and the control of the activities related to the collection and application of knowledge, which leads to the development of knowledge and creation of innovation. In research-oriented primary science teaching, students have the opportunity to gather knowledge through experiments and observation, to plan a research, store, organize and interpret data (information) and to apply knowledge in practice. All this helps them to develop the necessary competencies, among which those that stand out are the creation of experiments (projects), development of descriptions and explanations accompanying the essay (the project) and critical and logical thinking in order to establish connections between facts and explanations, which is the most demanding (Branković, 2010).

In these proceedings, computers should be used particularly in the stages of collecting data on objects that are being researched (such as the preparation for observing and creating of the research), and especially at the stage of recording and grouping of data. Data recording is a procedure that involves a variety of manifestations: words, numbers, drawings, spreadsheets, photos and videos. Graphic works may be used in the form of drawing, creation of graphs, charts, tables and diagrams. They are necessary so the students understand the phenomena and the processes easier, as well as to compare the data easier. They are indispensable in situations where students are faced with different quantitative data and relationships, since graphs and
charts makes it easier for students to recognize these relationships (Lazarević, Bandur, 2001:138).

At the level of class teaching, especially in primary science teaching, one should not forget about the great value of graphic organizers in students' acquisition of knowledge. Since it is important in contemporary primary science teaching to include a student in the process of acquiring knowledge and guide them through the paths of scientific knowledge, graphic organizers have to become very frequent in today's lessons. They will help the student to acquire the habit of their constant use in the learning process, especially among younger students which will make the learning process more interesting. Graphic organizers convert the complex of often obscure facts into an understandable context. They allow students to focus on important points and help the understanding and interpretation of the acquired knowledge to be easier. Also, these organizers, as their name suggests, organize the learning process for the student, as they lead them through the process of data collection, showing what was found and discovered, and what is still missing so the knowledge can be complete. They also help students to organize their way of thinking, to plan learning, and to compare ideas and information. Among the graphic organizers suitable for primary science teaching the following stand out: tabular chart, Venn diagram, the pyramid of the main idea, an organizer for comparison, pie-chart, and so on.

Pie-chart is divided into eight sections and in primary science teaching can be often used when it is necessary to simplify the complex notion into simpler elements. It helps students to understand and analyze the adopted term.

Graph “theme and 8 ideas” is a kind of a puzzle, and therefore can be used when it is necessary to find examples for a specific term, and when it is necessary to find a similar or opposite notion. It contributes to the development of students' divergent thinking.

Venn diagram compares objects or ideas. Each object is placed in a circle that represents it. The mutual intersection of the two circles have the facts or concepts that are common to the objects entered or presented, and the separate parts - the differences that are specific for the particular object. This organizer prepares the students for comparison and analysis of objects and ideas.

Comparison Chart helps students to compare two objects or ideas, in other words, to find similarities and differences. In the first column, they write in an idea or information that is specific to the first term. In the second column, students write in an idea or information that is common to both terms. In the third column, students write in an idea or information that is specific for the second term (Krueger, 2004).

K-W-L-H (KNOW-WANT-LEARNT-HOW) organizer introduces students to the learning framework so they can test their basic knowledge. This organizer can be used as individual or group strategy, but also when students want to check their knowledge individually before they share it with others.

K – “know“ indicates to the student to recall what they already know about a particular topic.

W- “want“ stands in order to help student to determine what they want to learn.

L – “learnt“ stands in order to help the student to identify and think what they will learn at the end of the topic or activity.

H – “how“ – stands so it can help the student to be reminded that something is learned, that is, to make connection between what is taught and what is learned in the form of metacognition.

Newer types of graphic organizers are mindmaps. These are the newer ways of recording data which are often reached by learning and which enable more efficient and effective learning. They are sometimes referred to as “spiritual geographic maps” on the basis of which we can be better thought-oriented. Mindmaps are a collection of ideas about a topic and can be used for shaping various materials.
The reasons for using mindmaps are because they represent copies of reality and through their network structure a teacher can show the systematics and relationships in the content, which is not possible in traditional teaching. Educational content is often presented to the students isolated, without establishing functional relationships with the preceding and the following material. Because of its obvious representation and the possibility to use the paintings and drawings, mindmaps contribute to the obviousness, which is for the primary science teaching especially important.

Mindmaps possess multidimensionality, following the fact that our thoughts operate on the principle of three-dimensional pattern, similar to the structure of brain cells. That is why the two-dimensional mind map is still a better solution than the linear notes that go from left to the right, or up and down. The left hemisphere of the brain works in a linear and analytical way (processing of logic, words, math), while the right is in charge of creative thinking (rhythm, music, pictures, daydreaming), therefore the use of mindmaps during learning simultaneously activates several regions of the brain. When the term is well understood, long notes are unnecessary. The brain stacks up information using associations, so in order to have a good memory it is important to learn to stack up information into forms and with the help of powerful associations.

How is a mindmap created? A subject or a term that is learned or repeated is set in a central place. It is followed by a circle around the main points that share the subtopics (sub-points), and these eventually lead toward details. The main ideas of any subject should be reassigned to a sheet of paper in the shape of a tree. This is accomplished by drawing the branches starting from the central idea, which should be shown in the symbol. For each thing that is related to the central theme, there should be a noted word or the symbol. Interrelated ideas should be placed on the same main branches, so that each branch goes out as a new sub-branch. Colored pencils and markers should be used for all this, a number of images or symbols should be drawn, and each branch should be coloured differently. The colors, symbols and layout structure help with memory and recollection. Mind maps are great for memory, as they can be regularly upgraded. (Dryden, Vos, 2001).

The model of shaping mind maps in the long term and continuous implementation should result in stronger learning effects. It is extremely important that the teacher, using a mind map, leaves to the student as a permanent property, the strategy for faster, more efficient, more interesting learning and revision. The science content is very good for the use of mind maps, because it is abundant with terms whose understanding is not possible unless the connections with sub-connections are not known and the term is not set into the system. The program Mind manager enables the mindmaps to be shaped with computers, which means training teachers to use it.

Students must have the right attitude towards knowledge and how to acquire knowledge about natural phenomena. They should know that in the process of acquiring knowledge of the natural sciences various studies are used, depending on the questions to required answers. It is important for them to understand that it is always necessary to precisely explain what they discovered by observation and that they should make the aquired facts available to others or to present to the other students what they have learned. In doing so, computers can be of great help. Information technology is used to assist in data analysis and unite the research results.

4. CHARACTERISTICS OF COMPUTER SUPPORTED LEARNING IN PRIMARY SCIENCE TEACHING

Introduction of modern computers, as mediators, is required in a modern primary science teaching. The application of computers in teaching science helps different levels and forms of teaching process to be performed such as the use of different databases, resolving problem situations, modeling teaching problems and phases, implementation of individual learning via computer software, etc. As a student in the course of his work must meet and master the techniques of effective and independent learning, the use of computers in teaching science will allow him to develop the capacity for independent use of different sources of information, introduction to the use of computer technology, participation in the process of knowledge, thus it becomes the subject in the classroom, and so is prepared for life outside the school. Using computers in teaching science students understand its capabilities and its advantage over paper-pencil notes. In primary science teaching computers can be used for different purposes and in different ways. In the initial science teaching, in first and second grade, the students can use educational games which introduce the technique of using the keyboard mouse and simple programs for drill and practice. While teaching science in the third and fourth grade, it is possible to use the simulation program, through which the creation and activity of natural phenomena and processes can easily be observed. In addition tutorial programs, data search, practice, and practical applications are certainly types of educational software that could be used as a learning technology, which introduces the computer as a tool that helps students to learn and think. Application of ES (educational software) in Science in our country is extremely rare, because it implies the presence of computer equipped classrooms in schools, a teacher with satisfactory level of computer literacy, and if this exists, an additional problem would be the deficit of educational software designed for primary science teaching. This is alarming, because it is unclear how much the computer as a medium is present in the daily life of a child. In the studies carried out in 2004 in our country regarding the use of computers in the classroom, only 38 out of 440 teachers (8.63%) used a computer in the classroom. Out of this only 38% of teaching time was spent using computer and within this 35% working with educational computer software. This shows that our teachers are not sufficiently trained for science teaching using computers.
In the first group there is an educational software for computer as a teacher, when the computer is used as a teaching tool. This includes: drills and practice, tutorial programs, simulation and model creation, problem solving and educational games. The second group of educational software is established as a software package that enables the application of computers as a tool. It includes: database search, word processing, applied programs, computer-guided learning and computer as an instrument or laboratory. In primary science teaching many programs are full of information, so the educational software allows students, in the process of learning, to collect their own data, which will then be used and organized for further learning. Computer as a tool for writing and processing can be used by more advanced students. The third group considers a high level of interactive learning user-computer (Nadrljanski, 2008)

The basis of educational software is multimedia which represents the integration of various media elements (text, audio, graphics, animation and video), integrated by a personal computer or, more simply, the information stored in the respective combination in the form of applications that provides software support to users for access to this content. Interactive multimedia features, applications and user dialogue that is implied with hypertext, i.e. text hyperlinks connected to other text or audio-visual components. The student uses navigation to go through hypermedia application, investigating information, using them independently, deciding on their size. Moving through the presentation, using feedback, student creates his own experience.

Computer supported collaborative learning (CSCL - Computer Supported Collaborative Learning) is a new paradigm whose author is T. Koshmann. This approach explores the use of information and communication technology (ICT) as tool which intermediates in the implementation of various collaborative teaching methods (e.g. learning from peers, simulations and games, projects and problem based learning). The goal is to support students in learning together, to create group dynamics by using technology. The application of computers and information technology in education contributes to achieving this goal by encouraging activities in which the student uses a computer to solve real problems, as well as linking computer skills with other activities in the learning process with the student's interests outside of school. If there are more independent activities represented in the student's learning process, the student is able to control the conditions in which learning takes place. Increased control by the student in the learning process causes greater motivation and self-discipline (Mirkov, Lalic, 2006).

Developed educational systems are much involved in the organization of computer-assisted learning, and the application of computer software. There are different references for the application of computer-assisted learning in primary science teaching. Firstly, the learning environment that requires the use of specific learning strategies is qualitatively different. A situation that is most similar to that which exists in our schools is the existence of computer classes that still do not have a
sufficient number of functioning computers that students can use to learn. Thus, it is a lack of computers that inevitably requires a combination of group work and work in pairs to work with computers. Work in pairs, which allows discussion and communication between students while using a computer, is particularly advisable. It is necessary to provide an individual access to computer as well as individual tailored tasks to students with special interests or skills. Learning program contents of primary science with the help of computers includes the use of other sources of knowledge, such as research, books, posters etc. (Williams, Easingwood, 2003).

Creating, designing and shaping ES in primary teaching science is a very delicate work. It is especially challenging and demanding in the first grade. It is very important to start using ES in primary teaching science at the earliest stage such as the first grade of elementary school. Design of multimedia software is possible with most of the topics. General intention in primary science teaching is not only learning topics from the book but also to encourage students of different potentials. That would mean that ES used in primary science teaching basically has to motivate students to recognize the world of nature and society, providing differentiated approach of topics learning, continuous supervision, revisions and tests. ES for primary science teaching should be made on the basis of programmed materials designed for more topics, at least 4-5 lessons. The motivation is primarily provided by multimedia and combination of text, image and sound, while the music must be in the context of the curriculum. Textual information must be adapted to the student of a certain age, purified and free of unnecessary and unscientific terms and concepts. It should explain the essence without unnecessary facts and definitions. Textual information is always supported by adequate image, photo or illustration. Images, in turn, should be realistic enough to be able to replace the real object and thus preserve the quality principles of intuition, which for this age group is extremely important (Grdinić Brankovic, 2005).

4.1 Some characteristic of multimedia presentations in primary science teaching

Despite the fact that in our market there are simple educational computer software’s which are usually in the form of multimedia presentations, there is a need for the teacher to create their own e-learning materials for teaching program content of primary science teaching and to design models of teaching with the help of these sources of knowledge. Creating multimedia presentations is not a demanding process, but the opportunities for improvement of primary science teaching are significant.

In creating these simple presentations the basic principles of establishing the initial communication of students with the computer should not be forgotten regarding program content. The initial slide addressing the student is inevitable and it always contains the basic instructions for the student to navigate through a presentation (Figure 4).

Figure 4. The initial slide

The advantage of the multimedia presentations is in faithful images, animations and videos that illustrate the theme that the student studied. Program contents of primary science teaching include learning about the natural and social phenomena, which typically should be studied interactively, in direct communication with the natural and social environments. The teacher is often unable to provide this kind of interaction for each programming content, and teaching only with the help of books, posters, and applications is a long-abandoned model that does not produce a sufficient effect on the students. Computer at the same time can compensate all of this with minimal effort of the teachers who do not need to have a high knowledge in the field of information technology. Even the power point presentation of hypermedia brings dynamism to program material, as well as the possibility of choice and sequence in the study of the content, which provides the student a sense of freedom (eg Figure 5).

Figure 5. Slide notice themes „National Parks “

The choice of programs that will be electronically available to students is a very difficult job for each teacher. Sizing knowledge in a multimedia presentation for primary school students would have to be released of
terminological-conceptual vagueness. The teachers needs to know that they offer much more to a student than the official textbook, but not copied text from a scientific encyclopedia for adults that will only confuse students and demotivate them to learn. Although the educational task is extremely important, developing interest in learning natural content is crucial, because it develops the desire to learn sciences, which are often rejected by students in the upper grades. A student who wants to learn more should have a guideline in the form of a character that allows him, that when clicked can get new information (eg Figure 6).

![Figure 6. Initial slide in learning about the mountain Kopaonik](image)

How much information present to the student, are the questions that every teacher asks, before making didactical transformation of the programming content. In the classroom teaching it is unnecessary to burden the learning materials with the factual facts (eg, year of birth and deaths of famous figures, statistics, etc..), Unless the goal is to just use the data for specific tasks (eg timelines). Also, these way students are encouraged to find themselves some more information about significant figures, which are not offered in the material, which will find out from other sources of learning (eg Figure 7).

![Figure 7. Slide - Extra information (hypertext) for theme „National parks“](image)

One of the most important tasks in teaching primary science is developing a love towards nature, because the only way to awaken in students a sense of the need to protect and care for the natural beauty. Nature is an irreplaceable teaching tool, as a living being shows its perfection only in the natural environment. However, the teacher is not always able to provide students ambient learning, learning in a natural setting. On the other hand, it is impossible to show all the beauty of wildlife, flora and fauna, in textbooks. In the absence of direct contact with nature, or in preparation for going out into nature, the computer is an ideal tool through which students can easily create first positive feelings (eg Figure 8).

![Figure 8. Slide - Image Kopaonik viole](image)

After examining the textbooks it can be stated that it cannot be said that the quality of the illustrations is always high, and it happens that it is not adequate to textbooks of primary science teaching. There are examples where, for illustrations of plants and animals drawings are used that are not true to pictures, which often look like caricatures, and the process does not provide adequate learning (eg Figure 9).

![Figure 9. Incorrect slide](image)
When using pictures of plants and animals in the development of electronic presentations it is needed to make the right choice, but the possibility of integrating teaching contents, and correlation with other subjects should not be left out. (eg: Figure 7).

Figure 10. Integrating the content of teaching and the nature of society and the Serbian language

Curriculum content and teaching should correspond to the mental level of students who will use it, and knowledge must be encoded so that it can easily be used in new situations by students. Coding system enables an individual to group information and connects them in his own way, this leads the individual into a situation to go beyond the known data, and to combine in new ways, creating new units. If teaching does not allow the student to logically connect learned information and data, and to understand the hierarchy structure, the teacher did not achieve the main goal (Vilotijević, 1999). This is extremely important in the realization of the content concerning nature in primary science teaching, for nature cannot be understood as anything but, perfectly integrated unity of all living beings and inanimate matter "or even better as’ beautiful and perfect mosaic of non-living and living matter" (Grđinić, 2004).

Complex processes in nature, difficult to understand for students' in primary classroom teaching. One of them is the metamorphosis of the butterfly larvae (caterpillars) to a grown unit. By selecting the proper illustrations (with the possibility of animation as well. Example. Waving display of butterfly wings or movement of the caterpillar) student will remember and understand that a caterpillar becomes a butterfly. To this will contribute aesthetically high quality images of these creatures, which are part of the multimedia presentation and make your child create a close relationship towards the living things that it studies.

Figure 11. Slide – Apperance and varoous butterflies

Figure 12. Slide – what is actually the caterpillar

Figure 13. Slide – Look of the caterpillars
4.2 Using the computer assisted learning in primary science teaching – gifted students

The main problem is how to adapt the program to the gifted students since the curriculum is appropriate to work with the average ones. Therefore, we have to make sure that the time that a gifted child spends at school is not wasted. Gifted children have a broad base of general knowledge, their vocabulary is quantitatively and qualitatively richer, they are fast learners, and therefore require a different approach.

Gifted students require individual approach in all phases of the process, from planning to evaluation. Computer-assisted learning, and continuous use of computers in the primary science teaching content to gifted students provides the necessary differentiation with careful instruction of a teacher. Communication by e-mail should be a common way to communicate with gifted students. They can also be given the instructions how to take part in the creation and presentation of the content, to propose their own ideas about the content and to teach others in the class. Computer assisted learning helps talented students to organize their findings on a graph, as well as to make their reports in power point presentation, which for the gifted 10 and 11 year old is not a problem. This way gifted and creative students are given enriched and expanded program in the regular curriculum. This approach is based on freedom of choice and individual approach. It is designed to boost the creative work in the fields the student is interested in. Students should feel free to study the topic of their own choice and have the possibility to decide on the width and depth of content and the way they would study. Programs for gifted students should use an interdisciplinary approach to teaching, which is based on problem integration in various fields of science. It encourages talented students to respond to a variety of phenomena which primary science teaching program allows. The study of natural phenomena experimentally, with natural materials, the use of electronic materials teaches gifted students to define their own problems that they are ready to deal with, and to develop procedures for finding solutions, and thus develop spirit to research.

In a study of application of innovative models in primary science teaching (Brankovic, 2009), we used the fact that the application of computers in primary teaching science is necessary to provide an interactive approach to teach by encouraging the activities in which the student uses a computer to solve the problem tasks for acquiring new knowledge but at the same time linking computer skills with other activities in the learning process. „, The greater representation of independent activities in the learning process, the greater the importance of control by the subject alone. Self control while studying by the student himself influences his personal experience and its significance is reflected with the construction of knowledge” (Mirkov, Lalic, 2006). Working with a computer (educational computer software) is combined with the above research of cooperative learning. In addition, the students have been interacting with the means of learning, the students are asked to exchange ideas, share tasks, help each other, make decisions together. Among the variety of innovative models that are constructed of a combination of joint problem solving and heuristic approaches to teaching with the use of investigative learning, learning with ES, or starting an intellectual map, the majority of students have chosen to work with a computer.

Innovative models of primary science learning have a theoretical basis in a number of modern learning theories (Dewy, Kolb, Mercer, Vigotsky, Wenger, Jarvis, ...). Basically, this theory is seen as a learning activity in which the new knowledge is gained by doing (action), through experience, often in social situations, mostly in collaboration with others, through conversation and of course, through reflection (Scheme 7). In preparation phase for model design there were curricular activities analyzed. They were observed in terms of context (course content), methods (approaches) and learning tasks. Each of these three basic points of teaching activities includes a special field for planning and modeling.

The field of context defines: the adopted content, objectives, and outcomes to be achieved through it, students’ abilities to develop, the time it takes them to achieve something, the environment in which the entire process is going on, and the difficulties they would eventually encounter.

In the area of learning type selection, modern primary science learning centers around situational, cognitive and associative learning. At the same time, as a particular form of learning planned for selected models, have been chosen: cooperative learning, problem based learning, active learning, constructivist designed learning , experimentally, through dialogue, interactive learning, learning through mini projects.

Special attention is paid to the task design for students. From the students, tasks have required the use of experience, information collection, use of acquired knowledge (productivity) and communication with other students, both in the process of gathering information, and in the process of processing and reporting to others. When it comes to task techniques which students use to acquire knowledge, there were found following techniques within the models: in association with others (members of a group or a pair), constructive dialogue, discussion, presentations, practical work, report on the text they read, project, mind map, individual use of the Internet. Among the tasks techniques that were selected for the evaluation of students’ knowledge there were used the following: report, question-answer, test, research paper. In the interactive aspect, the tasks were focused on individual student, student who is a member of a group. Thanks to task selection, students were taking different roles in the class so they were: individual students, part of a group, part of the duo, assigners, reporters, group leaders. Students were directed to the following sources of knowledge: a textbook, samples, nature, pictures, popular encyclopedias, ECS (educational computer software), Internet.
Designed models were causing the following student activities in science classroom: reading, watching, listening, collecting, sorting, classifying, analyzing, evaluating, proposing, discussion, presentation (reporting), research, practice, experimentation, application.

5. BRIEF REVIEW OF MODELS OF LEARNING SCIENCE WITH COMPUTER APPLICATION (4th grade)

EXAMPLE 1

Preparatory homework:
1. Study the CD-ROM titled Flora of Serbia. Students work in groups of 3-4 at home. Their task is to complete the charts by following the instructions given on the papers, with the help of computer.
2. Reporting on the work of student groups (in class). Comparison of the results and discussion related to the tasks.
3. Task solving (from teaching slips)

A large part of the implementation process of the content depends on the success of preparatory homework that has been done. This task gives students independence in the learning process, as well as further training for successful cooperation in the group. Students work in groups of 3 or 4 which ensures maximum commitment of each individual. Taking into account that most schools do not have sufficient number of computers in computer classrooms, alternative to working in computer classroom is the students’ work at home. Students receive instruction slips for using computers in groups. Students report the results of their work in the group and together systemize the material of the plants on the chart basis. It is followed by group work with the help of textbooks, where students solve tasks from teaching slips. The last phase is a productive revision with new problems.

Instructive paper for the group:

INSTRUCTIONS FOR COMPUTER LEARNING

STEP 1.
Open the CD on your computer and double-click Serbian Flora. Find the icon called SLIDE SHOW on the top of the screen. Click on it once with the mouse, and select View Show. Now the first image will appear on the screen with the title Flora in Serbia. Click the following slide. Here you can read and remember some important information about the plants. Before you move on, do not forget the following:
• to go to the next slide or data already open on the slide just click a mouse,
• If you want to know more about the concept, which is highlighted, then click on it.

When you want to return to the initial slide, click on the picture of a boy or a girl!
Each of you has received a paper with two charts which you will fill with data from a CD.

STEP 2
Now, open the next slide. If you want to see how the plants are arranged by habitat, click on habitat and when you want to see how the plants are actually arranged click: depending on whether or not they have all the plant organs.
When you open the slides you need, you will be able to fill in charts on the paper and do your task correctly. Teaching slip for each student is done in a way that students complete the chart on their own which should help them in organizing the information obtained with the help of educational software. They, in fact, independently discover which plants are used in the software and which of the following groups they belong to (plants of natural or artificial habitats, and then the place they grow (water ponds, rivers, lakes, land - forest , meadows, fields, vegetable garden, orchard and vineyard). Then with the help of a teaching slip, students continue to grow in their knowledge in the process of discovering whether they are plants that software continues to offer; plants that do not have all the plant organs (e.g. moss) or they are plants that have all the plant organs (root, stem, leaf, flower, fruit and seed).

After such an effort with the help of computers, the students in the class have the opportunity to apply their knowledge on the basis of the tasks where they found similarities and differences among certain plants. Through teaching slips they are assigned to form plant groups in a new way, by making separate chart where the plants are going to be classified according to the look and characteristics of the tree. Second task requires students to write down as much information about the two plants (sunflower and spruce) with the help of the charts given. In the third task they use data from the second to find similarities and differences between these two plants. (using Venn’s diagrams).

Slip teaching in the class
1. Think how else you can group plants. Try to make your chart. Group the plants according to the look and characteristics of the tree.
2. Based on the charts you have, write as many data as you can about sunflower and then about spruce.

<table>
<thead>
<tr>
<th>SUNFLOWER</th>
<th>SPRUCE</th>
</tr>
</thead>
</table>

Table 1. Sunflower-spruce (chart for students)
3. Now try to use the answers from the previous task to finish this assignment. First, in the middle of the graph write the data that are common to both plants (sunflower and spruce). Then, in a column that is labeled with 'Sunflower' write data that refer to sunflower only, and in the column labeled with 'Spruce' data that refer to it only.

Figure 11. Venn diagram (task for student)

EXAMPLE 2

1. Preparing students for poster making - work toward instructional handout with the assistance of educational software, “The National Parks.”
2. Synthesis of information on national parks of Serbia.
3. Presentations in groups and work on a poster.

Preparing students before to the lesson

Students are prepared for work in the classroom by working in small groups of 4. We use ES “National parks of Serbia” and the instructions given on the instructional handout.

Instructional handout for group work:

1. See CD titled „National Parks”.
2. From a CD-write everything you have learnt about the national park ________________ in your notebooks.
   On the map of Serbia find where the national park exactly is situated. Try to describe it naming parts of the world as well as places or villages nearby.
3. Extract two animals and two plants the National Park is famous for. Find images for each of them. If you want, find information about these plants and animals in an encyclopedia or on the Internet.
4. Write a text about your national park in the middle of a large paper sheet (A4). Write the text in capitals, neatly and legibly. Underline in red the most important parts of the text.

5. Get ready for presentation: one student should tell which national park it is and where it is situated, another describes the two selected plants, the third describes the two selected animals, and the fourth shows the park on the map and attaches pictures and the text onto the poster paper.

Do not forget to share responsibilities and to cooperate, and help each other!

6. CONCLUSION

Modern education includes increasing flow of teaching messages from the teacher teaching the student to the teacher from the student. To enhance the quality of teaching management must meet two conditions: the existence of operational interfaces and compliance of management activities concerning the state of the managed system. Traditional teaching has a burden in the ability of the teachers to simultaneously receive messages from anyone analyze and understands; apply optimal methods for each student individually and perform teaching at a different pace. Learning can be defined as a processing of teaching messages, by using the media cybernetic models can be applied in teaching for optimization and evaluation of educational processes and eventually structured multimedia curricula may be developed.

New educational technology, computer technology, should help to change the concept of education, educational content, improve ties between the actors of the educational process, learning conditions and support the development of the personality and attitudes of students.

Problems in using new educational technology appear because several problems:

- problems arising as a result of inadequate or defective equipment, school equipment in the field of computer technology. (Insufficient number of computers, or an insufficient number of computers of the new generation), as well as the lack of: computer components, peripherals, software, and communication with, the problem with the flow of data is eased by equipping schools with ADSL Internet, but unfortunately, it is not solved, because a lot of schools are not covered by ADSL because of the lack of technical terms

- problems at the level of the school management - organizational problems in the sphere of management (organization of the access to computer labs)
problems related to the lack of training of teachers and the problems related to the lack of interest of the teaching staff in the use of computers in teaching and problems of motivating teachers for this kind of work.

Competence of teachers and students is a prerequisite for the use of computers in teaching. Most of the teachers included in pedagogical processes use computers, the internet, and television, but that does not mean that they answered to the communication challenges of the new era, because in most cases, the mere use of modern teaching aids that serve as an illustration of some teaching units. Visual media, cyber-culture, and the digital paradigm are the holy trinity of modern educational process, but only for the communicational competent participants. (Jevtovic, 2006).

Students live in a world of computers and new technology, and may even know better than their teachers. That is why formal education should not allow that innovation circumvent the school, even though the state may not have sufficient funds to provide ideal conditions for the use of different digital technologies in schools. The school must clearly address these challenges by introducing the model of learning that students provide new modes of communication, and in a specific way present the data symbols and adjust to electronic writing young generations. New media should be used to establish the quality of communication in the learning process, which will help students develop new knowledge. Technology must serve to the teacher only as a tool, a great help, good motivational tool for the design of innovative models of learning that a student will recognize and accept as something close to his way of learning.

From today's teachers it is expected to be FIT persons (engl. Fluent with Information Technology), which includes persons skilled in the use of information technology. It is a new technology term that indicates a higher degree of competence in working with computers, because apart from the basic knowledge of the computer skills it implies technology that needs to be used as a constructive tool. In this sense we can talk about computer literacy of the teachers which represents the ability to use the computer in teaching for better student achievement.

Therefore, the national educational standards should also encourage teachers to use computer technology in the classroom. In natural science teaching, as also in the teaching primary science teaching, national education standards should suggest that students need to develop skills to use and understand science by using technology, because it can help them get data in their research, and this data obtained in their own measurements could be easily compared with data that can come through the internet, and also they could make easier display of the data in the tables or graphs. The student from the very beginning of the school has the right to be trained in various ways of communication that are made possible by new technologies. He also has the right to be trained to organize and analyze information. Teachers must therefore be aware that the inclusion of computers, Internet and educational software is not a matter of choice, but a necessity that will develop in students the necessary competencies, but also modernize the teaching process.

In the inclusion of ICT in the teaching of primary science teaching, the emphasis is not on the computer, it is the organization of computer-assisted learning that is emphasized. The computer should be used as a tool to facilitate student research, where he meets the world of nature or society. In doing so it in the learning model itself the social competence of students and the advantages of cooperative learning should not be forgotten. Educational software for primary science teaching are specific due to a multitude of images, sound and animation, and the need to direct student during research in natural and social phenomena and allow direct contact with this phenomena.

LITERATURE


THE PRODUCTION SECTOR IN THE PROCESS OF DIGITALIZATION OF RADIO TELEVISION VOJVODINA

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Abstract: Information digitalization, the global computer communication network, the Internet development has changed and improved the processes of mass communication. Media massages have become more personal and the use of multimedia improves a method of creating and understanding messages. Communication has become sophisticated, personal and very cheap. The need for media and information literacy is greater than ever. By using the media we become more specialized and, thus, we seek out media that can provide us with such information. New technologies provide us with these features - mass production of specialized and personalized information, enabling users to directly participate by using the generated media content.

The transition from analogue to digital broadcasting in the two public service broadcasters in Serbia should be completed no later than June 17 2015. Digitization of Radio Television of Vojvodina, both on a journalistic - editorial level and on a production, organization and technical level, is a challenge and a chance to reshape the processes of production of media content. New technology provides Radio Television of Vojvodina with an opportunity to include the audience in its own production via user-generated content. Moreover, it provides the general public with a great variety of qualitative content and ability of advance search of the archives. Where does Radio Television of Vojvodina stand in the process of the transition from analog to digital broadcasting?

We have analysed the results of the research in relation to how digitization affects innovation in the production sector of the public service broadcasting. Furthermore, we have tried to find out whether employees in Radio Television of Vojvodina perceive the transition from analogue to digital broadcasting as an opportunity for the improvement of public service broadcasting features.

Keywords: public service broadcasting, digitalization, user-generated content, multimedia literacy

1. INTRODUCTION

One of the important aspects of the mass media development is strengthening the personalization of the mass media, primarily under the influence of technological development. In general terms, people are closer to the personal (interpersonal) than mass communication because they have a sense of touch, seeing the one with whom they communicate. Through the very act of communication, a man consciously and unconsciously seeks for personal messages, those who turn to us as individuals, and which are coming from the communicator who understands our personal needs.

A direct consequence of personalized communication is specialized information on which today's mass media rely upon. As the reality around us becomes more complicated, the public relies on specialists of various profiles who provide information solely from their fields of interest, their profession or from the area of expertise where as a media professionals are specialized for.

On the other hand, we have the paradox that the mass media, in order to meet the widest audience, tend to sell information for all audience profiles. Such information is by its nature very general in order to meet the needs of a diverse audience. Technological developments, information that has a short breath, the audience's ability to find the piece of information in which they show interest and so on, have led to an increasing specialization of staff. As customers, we are all in need of more specialized (personalized) information, as well as media that can offer this kind of information. New technologies are doing exactly that: They offer a mass production of specialized and personalized information and messages to their users [1].

Since the beginning of 1980, a visionary Alvin Toffler has written about the appearance of new consumers and new markets and the creation of new systems that connect these two elements [2]. Toffler predicted the "massification" and appearance of a new system in which ideas; media and advertising must be completely revised, more clearly directed, more clearly designed and adjusted to the needs of tar-groups. That time has come. The media, if they want to survive, from mass-oriented are becoming segmented, regionalized and locally oriented. Just as Toffler predicted, technological development has enabled for a small production to be more profitable, and
the channels, which for decades had great distribution, are creating local production with competitive prices and are often less expensive in comparison to production dedicated to a wider audience. National advertising markets are changing and becoming the sum of regional economies which are directed to a narrow target group. New multimedia environment threatens more and more seriously to traditional boundaries that has existed for decades between telecommunications, audiovisual industry and informatics. [3].

Boundaries between traditional and new media in our country are still pretty clearly determined. Dominant role in the process of erasing the borders has not only changed in the way of media content production, but also in the distribution of online and offline media, with which implementation they develop and use new communications possibilities, at least, on three well-known levels:

- one on one
- one towards many
- Many to many.

This development and transformation process plays an important role when it comes to video content, which until recently was reserved exclusively for film and television, where is used mainly unidirectional channel of communication (the one that goes from the sender and the content creator to audience). New media allows video content development at all three levels of communication, thus opening up space for a new video formats and genres [3].

Described development and transformational process of digital technology are extremely important. A term "digital", can refer to any system, linguistic, numerical or any other. In the last sixty years, it has become synonymous with technology that allows the use of most parts of the electronic computers. An expression "computer technology" and "digital technology", have become interchangeable to some extent. Computers are digital, because they store information in digital, binary form, as ones and zeros. Digital today means much more than discrete data or machines that use them. Talking about digital is to talk about the use of the whole network of virtual simulations, current communications, ubiquitous media and global involvement opportunities that are an integral part of the media company [4].

Digitalization is not just a technology and not just a new look of the media industry. Digitalization has a large role in the inclusion of all kinds, from education, including new forms and types of learning, to the development of cultural tourism or the adoption of new standards of conduct. Continuing education through the Internet and continuous digital communication require for cultural and scientific databases to become reality. Cultural and scientific heritage represent a unique set of intellectual values of a society, and digitalization is an essential step that generates an electronic concept of heritage. Digitalization is primarily a tool, but, considering what monitors her, she has become a phenomenological model. Digitalization is present in the presentation of collective and individual cultural heritage and diversity, and among the broad strata of citizens, it promotes an access to the inheritance.

Digital concept has greatly been driven by socioeconomic diversity and intercultural dialogue. As a consequence of creating a digital concept, multiculturalism and innovation projects are underlined. Digitalization can be defined in many ways. Among other things, it is the process of translation in pieces of information such as text notes, audio recordings, visual recordings and videos. However, this process is much more than that when we consider the steps that are part of it:

- creation - making of digital copies of analogue facilities and modifications of digital objects for the purpose of dissemination,
- dissemination - making of mechanisms in which target population of users accesses the collection of digitized material,
- organization - making of mechanisms which enhance searching and assistance in finding,
- mechanisms are created primarily for the user access to digitized material, and conventional facilities
- storing: making of mechanisms for saving digital copies, as well as making of sustainable media technology [5].

Obviously, the definitions are based on the technical details, such as: "the transfer of an analog to digital material and organization of the digitized material through the collections, which can be viewed and searched by the user" [6], by no means can not be comprehensive when considering the whole process of digitization. In other words, as far as machinery and technology can change the world of traditional media, changes and awareness of media professionals and with the end-users which are part of that, where, essentially, the profession and the science has not yet indicated the necessary attention.

2. A FEW CHARACTERISTICS OF THE PUBLIC BROADCASTING SERVICE OF VOJVODINA

The Public Broadcasting Service of Vojvodina broadcasts program on two channels. The first channel broadcasts in Serbian language with news, sports, cultural, educational, school, documentary, series and movie content. The second channel - broadcast programs of multicultural content. It consists of the most common programs of minorities in Vojvodina: a total of nine productions for minorities (Hungarian, Romanian, Ruthenian, Slovak, Roma, Ukrainian, Macedonian, Bunjevci and Croatian). Daily broadcasts of informative programs "News" and the weekly broadcast program "Good evening Vojvodina" and "TV magazine" in the native language, follow a current events of the minority population in Vojvodina. The goal of transforming RTV Vojvodina in the public service and its primary role is to report on and for the Vojvodina. Following the example of the BBC, who
recently turned 80 years, and which arose from the general social consensus where the community wanted a public television station that will serve the citizens and not to the advertisers or the government, there also arose a public service of Vojvodina. The Public Broadcasting Service of Vojvodina started in June 2010, with digital broadcasting of programmes on both radio and television studios, and in this respect there has been a transformation, both in terms of technical capacity for preparation, processing and finishing, as well as the transformation of production and journalistic approach to business. Public service has public revenue, it is under public control, and includes a set of values and institutional solutions based on political independence, financial independence and program diversity.

Digitalization, in which the public service stepped into, is an opportunity for employees to provide "more service" for its users, to modernize their offer, so in comparison to the market dominated by commercial television broadcasters, they could provide part of the area that will cover all the diversity of Vojvodina, as well as specifics that digitization brings.

The organizational structure of the television is traditional media structure and management structure is hierarchical. Management RTV public broadcast service of Vojvodina for years is facing numerous challenges, problems, and then with the establishment of a new organizational structure. Formal transformation of RTV Novi Sad in public broadcast service of Vojvodina did not bring a solution for a number of problems in the past. Total number of employees besides a social program conducted several times (the last one on December 2010) still exceeds the needs of a modern and stable public service. The average age of employees is 46.96 years. The transition to a digital broadcasting and the introduction of digitization in the production of programs indirectly shows an excess among employees and on the inadequately set organizational structure of the public service.

It is obvious that due to the program of employment in 2009. and 2010 the RUV broadcaster doubled the number of younger than 30 years (5.31%). Commendable is that it is now over five percent of employees with a university degree that is total of 45.60%. The number of unskilled workers decreased from 3.41 to 2.70%, and the number of employees who have over 30 years of service with the 27.69 to around 18%. [8]

Since the subject of our research focuses on employees in the production of a public service, here are a few basic organizational characteristics of public service broadcasting production of Vojvodina, without going into detail in the general characteristics of production in public services at home and abroad. Generally, television production is a broader process of planning, organization and implementation of media content, which relies on the social division of labor in the organization, but is also the reflection of culture, arts, education, education and many other social factors in one media organization. Each production process is characterized by a series of successive segments and a series of stages that is necessary to pass in order to from the idea of the project...
GRAPH NO. 1: Overview of the organizational sector "Production" in the RTV public broadcast service of Vojvodina

As already shown in the graph, at the head of television production is executive director, while television production is divided into three parts, consisted of sectors. Each sector has its own individual manager or chief, whose task is planning, decision making, leadership, in one word, management and deployment of all available resources (financial, technical and human). Hierarchical setting is the same in all sectors of the public broadcast service of Vojvodina, which means that the head of all editorial-sectors are executive producers and editor.

The producer is the person in charge for storing of information; he is the main coordinator in the communications with project stakeholders, external associates, TV crews in all areas and units, the principal, the brain which has a complete overview of the project. In smaller productions, the producer takes several other jobs, and this combination of multiple jobs is called a "producer director."

Some productions have the "associate producer's" (the organizer's), one or more of them, who makes shooting and working schedule for the team and generally assist producers in managing production. Frequently asked questions are about cooperation between contractors and employees, making the contracts, scheduling, procurement, contracting of equipment, payment, public relations, archiving and synchronization of material in production phase. With the help of writer or editor of the project, the producer makes casting, pre-calculations, gives suggestions, decides, and all strings are in his hands. He is the link between all sectors, teams and responsible characters.

Television producer has the task to ensure, control and actively monitor all operational technical and financial conditions necessary for the planning, preparation, implementation and completion of TV programs. In television systems, his primary task is to provide financial means, but he receives many other tasks that in our TV centers fall under the domain of the editor's task; in our TV centers producer is usually an immediate assistant to the editor, and linked to a particular redaction.

The production manager is the most responsible person in the programming section in terms of making decisions about the production and the concept of the program, the budget items and other processes in which he makes key decisions. He is the strength and will of the project. He starts it, gives it direction and extent. Producer is a team leader, a person who works with authors, writers, decides on key points, and hires directors, contractors and calls shots in the production. Knowing itself and learning skills for making correct choices are basic needs for a proper management of the manager.
“Organizational Politics” is a silent process by which some producers achieve their size, while others fruitlessly yearn for it. Analysts of behavior and business school

3. DIGITAL TV – INTERACTIVE SERVICE

We are on the brink of a new era of television. Does this mean that the old TV sets go down in history and that digital television brings something revolutionary new and what to expect from it? These matters are joining the dilemmas posed by the competitive market. Why would a traditional television have to think about its transformation and new program offering and who dictate trends in the media market in the digital age?

Answers to the questions concerning the development of digital broadcasting in Serbia was supposed to get by April the 4th 2012., when it was scheduled for shifting to a digital way of broadcasting. It was planned then for all analogue transmitters to be switched off and for all digital transmitters to be put in use. As it became clear that this was not a realistic scenario and that the new, digital television in households across Serbia will, nevertheless, enter gradually, the new plan is that it happens until June 2015. Until that time, questions from the beginning shall remain open for consideration for users and media professionals.

Digital television brings a new image format and its better quality. It has the characteristics of the new media, and can be distributed by cable and satellite, by internet protocol, and can be adapted for the reception on a mobile device. Modern information and communication technology allows users to converge services. This means that a user on one and unique way, by cable, wirelessly, via modem, gets a telephone, internet and watching TV service in one. Apart from that services are technically safer and better, they are faster, and leave the user with a possibility of personal choice, thereby leaving the moment of personalization contendent.

With digitization television becomes more than television. It becomes a platform for a digital interactive service. Although this step in traditional television in the world of new media, in the beginning, will not mean the use of all multimedia benefits offered by digital television, but a very possibility of interaction points to the obvious progress which digital TV offers over traditional TV. In this process, which is again in the function of personalization of information, program schemes suffer major changes, as users of the service can choose the programs they want to watch and when they want it. However, the real revolution brings the possibility of creating a program by the user. This idea is still in development and it is on different laboratories to decide what kind of range the viewer should have. It is now clear that in that process that entire user - production line will equalize. In fact, thanks to computers and the Internet, it is becoming more natural to users ability to do everything that program producers do. Decades of technological literacy, have made it easier for users to overcome all obstacles in relation to media construct and its placement.

And finally, in the digital era, we can expect a gradual abandonment of storytelling, or more precisely, a dissolution of the usual narrative structure as it was cherished by traditional television. What does that mean? The simplest way to explain this is through the parallel of using the Internet: for all who use Internet it means that, when you open a site, there are at least five parallel streams to choose, analyze, use, and distribute. The user then gives up a predetermined point, follows a series of sub-themes, new stories and information, and agrees to an infinite series, which has nothing in common with the classic narrative structure. This is the future of digital television and the user. Users will open newer and newer fields, to create, by themselves, their narration and to return to a new beginning. It will happen, by looking for an interactive television event carried by a multiple cameras that the viewer alone, via his remote control, will select position he wants to see. The viewer becomes an active mixer and video director. As a subscriber of cable television for example, a viewer can at a certain time to get some of the services (weather, a movie, a recipe ...).

Public services, although still working on an analog basis, they are very aware of all mentioned above. In order to avoid lose of a market competition, they are more and more oriented to the cables and satellite programming, as well as on the specialized channels. Traditional broadcasting is increasingly turning to digital methods of production and distribution.

4. MMIL – MULTIMEDIA AND INFORMATIONAL LITERACY

Moving to modern, digital television broadcasting, the use of all opportunities that digitization offers are a chance for promotion and raising the issue of multi-media and informative literacy of digital television users. Mastering these skills creates space for the possibility for establishing a better relationship between media and society. Back in December 2008, The European Parliament adopted a resolution in which they entered the recommendations in the report on “media literacy in a digital world” [10]. The resolution recognizes the importance of media literacy and recommends mandatory and regulated by law, inclusion of media modules in the
such as freedom of speech, freedom of press and right to be informed. We believe that the alleged here is of great importance for development of and media and society. We also believe that this concept needs to be supplemented and therefore we are talking about multimedia and news literacy. The new technologies are based on multimedia platforms, and opens up new users - multimedia features for users and media, both in creating media content and in its interpretation, placement, admission and again in the context of interpreting users. In other words, the discourse and the context in which media content is created, which is created, and from which it is distributed, and from which it receives and interprets - are mandatory part of every media messages and part of the user and the media image of the message. Therefore, we believe that the term "media information literacy" needs to be expanded, adding it a new layer and rename it to "multimedia information literacy."  

Foothold in our view can be found in the definition of multimedia literacy: "Multimedia Literacy is the sum of individual motives, knowledge, skills and abilities expressed with highly developed indicators (motivation, contact, content, perception, interpretation / evaluation, activity and creativity), which serve in the function of selection, use, creation, critical analysis, evaluation and transfer media content in a variety of forms and genres, while in the process there is a high awareness of the context in which the media operate and discourse from which they address to users."

Using of user-generated content, media and informative literacy are vital for the media, which have a task of fulfilling their demographic features and obligations to society. They provide a space to a public in order to express themselves and participate, giving her the tools, skills and capacity to participate in public debate. Finally, in that way, broadcasters provide citizens with the opportunity to fulfill their right for free expression. By promoting an informative multimedia literacy and user-generated content, broadcasters can help in accomplishing the following functions in the media:

- The media are channels for information and education through which people can communicate with each other,
- The media are (distributors) of stories, ideas and information,
- The media are corrective of "natural asymmetry of information" between the government and users, between the government and private distributors and users,
- The media facilitate management of useful debates between different social actors, encourage decision making among conflicting parties in the spirit of democracy,
- The media influences that society learns about itself and builds a sense of community that contributes to understanding the values, customs and tradition
- The media are carriers for all modes of expression in culture and cultural cohesion among nations.

Permanent feature of modern society is the active participation viewers, listeners and readers through the media in all public spheres. Requests of viewers, listeners and readers to participate, to discuss and comment through the media, have now become a permanent feature of society. Unless broadcasters do not learn, to use user-generated content in the effective way, the audience will be transferred to other media platforms which encourage active participation of the audience. Today that is a basic duty and right in the digital world and community service that promotes inclusion of all nations [10].

5. USE OF USER-GENERATED AND COOPERATIVE CONTENT

Research since 2008, conducted by the UNESCO and CBA between 72 broadcasters in the countries of the Commonwealth, which dealt with the use of user-generated content (UGC) in the media indicated that he still preferred the use of older forms generated content, such as letters and faxes. The "new" forms such as podcasts and social networking sites are not yet commonplace. Answering the telephone, letters, faxes, daily use more than 60% according to a survey of broadcasters, while 30% of broadcasters had never used blogs and website.

In the world it is common for the broadcasters to have trained producers responsible for checking and sorting of materials for UGC before broadcasting. However, mentioned research has shown that we often find little consistency in the way in which these producers are involved in various forms of UGC, and there are activities that go on the air without any editorial insight. Some broadcasters use delayed broadcast time, some of them, if it is necessary, assemble and use the material sent to moderators, while others refuse to even review the materials.

For broadcasters, the biggest benefit of the KGS is an access to the materials that otherwise would not be available. The most obvious examples of such a use are the use of images or videos for the stories where the program interrupts (breaking news stories). That enables the material to show for the most current news stories and news programs. For the audience, that is the opportunity to participate in the program, or even, to participate by generating research and journalistic stories, the ideas, material and provides insider knowledge and information. In these situations, the expertise and skills of the auditorium can be used as an aid in the development of any actual story. Audience can always ensure an

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1 Theoretical and empirical research conducted through the ex ante evaluation for the doctoral dissertation: Bulatović, Lj.Lj., 2012., Modeling of the curriculum for the subject multimedia literacy as a function of developing awareness of the processes of communication media, the Faculty of Management, Sremski Karlovci, confirm our claims.

2 The definition of media literacy is part of the scientific contributions in the above doctoral dissertation.
extensive range of content, from personal biographies to fictional stories. However, it remains an open question of expertise of the audience, and its multi-media and information literacy.

The benefits of broadcasting UGC are not drained only on the material submitted by the audience. Use of UGC strengthens a connection between the broadcaster and the audience. The research which parts we showed here, shows that even people who do not participate in the preparation of generated content, have a very high value for the emitter published content. Use of generated content provides to a broadcaster a competitive advantage. As the audience becomes a media and informational more literate, the greater is its capacity for objective approach and for providing an important contribution to a wide range of media-based UGC like Twitter or Wikipedia. On the other hand, strong mutuality of the process comes to the fore, as the educated authors of UGC have a higher expectation than traditional broadcasters. Finally, the broadcasters who accept and adapt to the use of UGC, will be very highly ranked on the highly competitive media market.

User-generated content is not exhausted here. There is a worldwide accepted form called cooperative or collaborative content which is commonly used in the news and in the public comments that were made public. It is about something more than mere "use" of content, as the broadcaster previously encouraged, gave suggestion, stimulated and educated his audience. The situation with the collaborative content was significantly different.

Collaborative content was much more intense, it's targeted and designed KGS, which applies to all formats, and it created it with the support of the public broadcaster. These contents were made in joint workshops or on the projects of digital storytelling. Collaborative content was defined as the way in which the generated content was produced, rather than the type of material that has been created. Experiences in the production of content in cooperation with broadcasters, authors and users are very highly rated. That can improve their opinion of the broadcaster and the changing attitudes of other members of the audience.

High level of broadcaster involvement in production of collaborative content from the broadcaster requires greater commitment than encouragement of other forms of generating content. The most important way is not only to help in managing this initiative, but also to produce an efficient design. All of this is collaboration with a number of institutions such as universities, NGOs, media, community groups and local media.

It is obvious that rapid technological changes affect on the newsroom to become smaller and more integrated. It is a time of more clustered and more versatile information because consumers want to get the information quickly, clearly, concisely and comparatively. A flexible way of news getting, leads to a minimization of accentuated needs for genuine reporting and analyzing of information. It happened that, under the influence of multimedia, journalists and producers become passive processors of already prepared published materials. All in all, it seems that the future of media, including public service depends on how much you will be able to know and to manage their media and information that are added, we will use the jargon of multimedia, web attributes. It includes everything except [11]:

- a new approach in the writing and presentation of news,
- presentation of a new model of narration,
- semantic enrichment of media content,
- optimization of the search,
- designed, planned use of UBC,
- designed and planned use of cooperative-generated content,
- employees prepared for the coming changes
- employees prepared to accept these changes and to participate in their implementation.

Digitalization implies a different approach to the job in media, journalism, producers and in every other, as well as a complex thinking about possible use of the opportunities which sets the digitization of media in front of customers and employees, and all that in the public interest. Interactivity, multimedia, hypertextuality, are the characteristics of the digital media and a huge advantage over traditional. Placement of information without intermediaries, and the speed or technology are simply pointing to the new and to the different angles from which certain information is interpreted and understood as a signpost for the changing of traditional media routines. Thanks to digital technologies, the media themselves are becoming a kind of navigator which led its customers through their own offer, but also opens to them the ways to the other and different "providers". Multimedia and informatively-educated people are becoming a kind of moderators who manage the whole range of news, views and reviews that are still growing and disseminate network of users. The audience should be transformed into active participants, able to create bridges between the real and the virtual world and to mediate in the process of informing and the media narration. This aspect of digitization process in the provincial public service seems to be not yet even begun.

statements focused on the attitudes of employees. Subject of research - examining the attitudes of employees in production of RUV RTV Vojvodina on digitization. Extensive research included the views of all employees in broadcasting (except managers), then journalists, workers in production and technology, but for this work we issue only the views of producers and organizers. The aim of
this study was to determine whether the transfer of public services to digital technology affects the programs of the public service. In part that we display, we discuss the results we obtained in the production sector. We were interested in whether and to what extent the change affects digitalization of traditional business concepts and do they change a traditional approach to the job? How digitization affects innovation in approach and work? For examination of the attitudes was used the five-level Likerts scale and the statistical data processing. The starting point of the formulation of the basic hypothesis was that the digitization is inevitable in all processes of production in the media industry, as well as that, the digitization becomes a new tool in journalism, production and the technical segment work performing in the public service of Vojvodina. The main hypothesis was: HO. We assume that the perception of the digitization process of employees in the media Public Service of Vojvodina is positive and represents a challenge for employees. Alternative hypothesis was: HA. We assume that the perception of the digitization process employed in the Public Service of the media is negative, although a challenge for employees.

Characteristics of the sample - in the part we display, the sample consisted of 93 employees in the PSB perform duties producer and organizer. Questionnaires were completed by 33.3% of women and 66.7% men. Most respondents, (25.8%) are between the old 45-55 years and 25-35 years, followed by those from 35-45 years (24.7%), and older than 55 years (22.6%), and at least the young people under 25 years old, only 1.1%.

<table>
<thead>
<tr>
<th>Gender</th>
<th>No. of subjects</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
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<td>66.7</td>
</tr>
<tr>
<td>Female</td>
<td>31</td>
<td>33.3</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 2: Sample characteristics by gender

In the sector of production, the most of the subjects had only a high school diploma (62.4%), a 31.2% with high level of education and 5.4% of master's degrees. Sector of production and manufacturing organization, we judge on the basis of the tested samples, no proper educational structure is necessary for the performance of complex tasks, especially in the digitalization process through which passes RTV Vojvodina.

Subject age structure

<table>
<thead>
<tr>
<th>Age</th>
<th>No. of subjects</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 25</td>
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<tr>
<td>25-35</td>
<td>24</td>
<td>25.8</td>
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<td>35-45</td>
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</tr>
<tr>
<td>45-55</td>
<td>24</td>
<td>25.8</td>
</tr>
<tr>
<td>55 and more</td>
<td>21</td>
<td>22.6</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
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</tr>
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</table>

Table 3: Subject age structure

Degree of education

<table>
<thead>
<tr>
<th>Degree of education</th>
<th>No. of subjects</th>
<th>Percentage</th>
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</tr>
<tr>
<td>SSS</td>
<td>58</td>
<td>62.4</td>
</tr>
<tr>
<td>VSS</td>
<td>29</td>
<td>31.2</td>
</tr>
<tr>
<td>MR</td>
<td>5</td>
<td>5.4</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4: Subjects degree of education

In the sector of production, the most of the subjects had only a high school diploma (62.4%), a 31.2% with high level of education and 5.4% of master's degrees. Sector of production and manufacturing organization, we judge on the basis of the tested samples, no proper educational structure is necessary for the performance of complex tasks, especially in the digitalization process through which passes RTV Vojvodina.

<table>
<thead>
<tr>
<th>Working experience</th>
<th>No. of subjects</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 5</td>
<td>7</td>
<td>7.5</td>
</tr>
<tr>
<td>5-10</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>10-20</td>
<td>26</td>
<td>28.0</td>
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<tr>
<td>20-35</td>
<td>34</td>
<td>36.6</td>
</tr>
<tr>
<td>Over 35</td>
<td>10</td>
<td>10.8</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 5: Subjects working experience

With a comprehensive survey of employee’s attitudes in the RUV RTV Vojvodina on digitization, its demands, opportunities, advantages and disadvantages, as perceived by the eyes employees, we have come to some interesting conclusions. Every sector of the public service has its own concerns, problems, and segments that do not cope. Ovde prikazujemo stavove zaposlenih u produkciji iz ugla ključnih reči u ovom radu. Već prostim uvidom u distribuciju dobijenih rezultata prikazanih kroz frekvencije odgovora iskazano procentima, uočljivo je da zaposleni u produkciji u javnom servisu nisu sasvim sigurni u to šta sve digitalizacija donosi. Uitsak je da se nalaze u nekom procepu između onog što jeste njihova stvarnost – tradicionalni način emitovanja programa, priprema pa u skladu sa tim i njihovog odnosa prema tom proizvodu. Nove mogućnosti, kojih negde jesu svesni, ipak kod njih još uvek ostaju na nivou mogućnosti, prilike i eventualno neke sutrašnjice. Sa druge strane, ni starosna struktura u ovom sektoru javnog servisa ne ide na ruku promenama koje slede.

Sledi tabelarni prikaz rezultata važnih za ovaj rad.
Table 6: **Production sector in the Public Service of Vojvodina is focused on interaction with the audience, not only on interaction with journalists.**

The largest number of respondents, 46.2%, partially agree with the statement that the production sector in the Public Service of Vojvodina focuses on interaction with the audience and not only on interaction with the press. 20.4% with this claim does not agree. Strongly disagree 8.6% of respondents completely agree 11.8% and 12.9% undecided. Based on these results distribution and of employees, we note that there is no united position on whether their job is to interact with the audience and the press. On the other hand, when we take into account the age structure of employees and then educational, we can partly explain the dominant attitudes. Simply it is the employees who have dedicated their life spent mostly in traditional media paradigm, as employed in the production primarily focused on the support of media content authors and do not see themselves as co-authors of the same content or even those who generate their own content.

Table 7: **Production sector in the Public Service of Vojvodina is competent to respond to the latest demands of digital television and radio production**

The largest number of respondents, 37.6%, only partially agrees with the statement that the production sector trained to respond to modern demands of digital television and radio production. A somewhat smaller number of respondents, 28.0% said they were not educated, 14.0%, even with this claim does not agree and those who disagree completely were only 10.8%. Percentage of undecided was 9.7%, except, that on the basis of these responses can be concluded that among employees there is no single opinion on whether or not they are sufficiently trained for digital production, so it is clear that the problem are younger employees as well as most of highly educated. It is more than clear that education in this sector is needed, and it would seem, by the response of distributions, that they are ready for it.

Table 8: **The use of new media for the production sector in the RUV, does not matter.**
Unlike the previous distribution of answers, respondents’ attitudes about whether the use of new media is important for a production sector showed a very high degree of consensus. Even 58.1% of respondents believe that the use of new media in the production of a very important and it is considered important to 24.7% of respondents. That it is not important at all considered 7.5% and not 4.3% is considered essential. Undecided was only 5.4%. Attitude on this occasion claim a high level of agreement of respondents, which again point out that education in the field of new media has been well accepted in the sector.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
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<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>2.2</td>
<td>7.5</td>
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<tr>
<td>Indecisive</td>
<td>18</td>
<td>19.4</td>
<td>26.9</td>
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<tr>
<td>Partially agree</td>
<td>39</td>
<td>41.9</td>
<td>68.8</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>29</td>
<td>31.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Valid</td>
<td>93</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 9: KGS I MMIP to Public Media Service of Vojvodina provide great opportunities, greater access to a diverse population, various facilities for program news

The statement that UGC and MMIP provide great opportunities to the public broadcasting service, greater access to diverse populations, different contents for the news program. Greatest number of respondents partially agreed (41.9%), completely agreed 31.2%, 19.4% undecided. With the statement disagreed 5.4% of respondents and 2.2%. In this case, among the employees in the sector of production of RTV is pretty widespread agreement in the responses, suggesting that there is awareness that the UGC are increasingly widespread in the programs, as well as the awareness that this is a way to attract the audience. On the other hand, these answers are inconsistent with the answers that follow.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
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<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>9</td>
<td>9.7</td>
<td>11.8</td>
</tr>
<tr>
<td>Indecisive</td>
<td>22</td>
<td>23.7</td>
<td>35.5</td>
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<td>Partially agree</td>
<td>37</td>
<td>39.8</td>
<td>75.3</td>
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<tr>
<td>Strongly agree</td>
<td>23</td>
<td>24.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Valid</td>
<td>93</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 10: Digital technologies have caused me to change my content production.

Employees in the production of RTV Vojvodina in 39.8% are partially agreed, strongly agreed are 24.7% with the statement that the digital technology have influenced to them so they could change the content production. Those who can not decide on its position regarding of this statement was a lot, approximately 23.7 %. Those to whom modern digital technology has not influenced to change the content of production in the total sample was relatively small, only 11.8%. When we compare these results with the previous ones, it is clear that even though they believe that they changed something in themselves have not done it in accordance with modern requirements, so they accepted UGC very poorly.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
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<td>29.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>27</td>
<td>29.0</td>
<td>58.1</td>
</tr>
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<td>Indecisive</td>
<td>19</td>
<td>20.4</td>
<td>78.5</td>
</tr>
<tr>
<td>Partially agree</td>
<td>17</td>
<td>18.3</td>
<td>96.8</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>3</td>
<td>3.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 11: Possibility of publishing KGS endangers professionals in the field of media production

There is a very high percentage of employees in the production who consider that UGC professionals in the field of media production, almost 58%. This data is encouraging, because it shows they are aware on how important are UGC for public service. On the other hand, 20.4% undecided and 18, 3% of those who agree with this statement, underscores that it needs to be done working to strengthen the attitudes of employees towards the popularization of digital technologies and the opportunities they offer.

Moreover, our reflection in the multimedia and informational literacy by examining the responses of
employees in the production, or in the public service gets a new dimension. In a new way is actualized issue, which was open in the science since eighties - Is it that someone is working in the media means that he is media literate?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
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<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>8</td>
<td>8.6</td>
<td>10.8</td>
</tr>
<tr>
<td>Indecisive</td>
<td>20</td>
<td>21.5</td>
<td>32.3</td>
</tr>
<tr>
<td>Valid</td>
<td>Partially agree</td>
<td>29</td>
<td>31.2</td>
</tr>
<tr>
<td></td>
<td>Strongly agree</td>
<td>34</td>
<td>36.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 12: **RTV Vojvodina does not fully exploited the possibilities of digital media online**

This claim among respondents RTV sector has a very high degree of agreement. In fact, that TV does not use in full capabilities of digital online media completely agree 36.6% of the respondents, partially agree 31.2%, which in total amounts to 67.8% of respondents.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
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<tbody>
<tr>
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<td>10.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>15</td>
<td>16.1</td>
<td>26.9</td>
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<tr>
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<tr>
<td>Valid</td>
<td>Partially agree</td>
<td>44</td>
<td>47.3</td>
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<td></td>
<td>Strongly agree</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 13: **I do not have enough knowledge in the field of production for digital and online media**

Most of the respondents from the sector's production of RTV, 47.3% of them, partially agree with the statement that they lack knowledge in the field production of digital and online media. Completely agreed 17.2% which in total amounts to 64.5% even respondents. With this statement does not agree 16.1% of respondents. Strongly disagree 10.8% which in total equals 26.9%.

Undecided was only 8.6%. This suggests that almost two-thirds of respondents believe that there is insufficient knowledge in the field of online media production, which again points to the need for employee training, changing a structure of employees as much as possible and finally to a serious problem that will only face the Public Service of Vojvodina.

7. CONCLUSION

Our alternative research hypothesis has been confirmed: **HA1 we assume that the perception of the digitization process of employees in the media Public Service of Vojvodina is negative, although a challenge for employees.**

Presented research has provided us with insight into whether the employees in the production of public service prepared to for transition of public service to digital technology, as well as whether they are aware of all the opportunities offered by public service employees in the production process of the transition to the new technology. We came to the conclusion that no matter how digitization affects changes in program content and mode of public service anywhere in the world, with the production employees in the Public Service still dominate positions that directed us to the conclusion that there is a consciousness.

Awareness that digitalization greatly affects on the changing of the traditional concept of producers tasks, is present with employees in the production of public service of Vojvodina , but still there is no power and determination for a work on changing the traditional business approach. If the process of digitization, which was largely begun, within productions in the Public Service of Vojvodina has no substantial influence on innovation in the approach and method of operation, It was clear from the responses relating to the use of user-generated content, as well as responses that are directly attributable to the segments focused on media and information literacy. It is clear that the need for this type of training in the Public Service of Vojvodina is a necessity with which we have a long overdue. Even the responses that indicate that there is an awareness that digital technology makes it easier to work in the productions sector, it will remain in the shadow of dominantly undecided when it comes to the use of new technologies and an understanding of its benefits.

Public media services and all the media are turning to the new approaches and ways of working. Thus, the Public Service of Vojvodina would have to see their own chance in the rapid inclusion into modern trends. As our research shows, employees in the production of public service
media of Vojvodina, have a high awareness of what digitization means. They are familiar with the processes that digitization involves, believing that it will easily, quickly and efficiently implement in the team, but still have the problem with the acceptance of some of the characteristics of new media.

The use of new media at all levels, for employees in the public service in all sectors, is an important creative activity that is reflected in all the concepts of media services. There should be mastering specific skills that include knowledge, such as user-generated content, media - computer literacy and knowledge of digital journalism pyramid. The media are source, channel and means of communication, whose capacities multiply second by second, and needs to be clever, quick and experienced to meet the demands of modern digital technology. Ideas and serious work for every single employee, influence development and progress at all levels of the public service, running all the mechanisms, opening up new horizons and introducing new public service in the modern world. World of new multimedia alphabet has long transcended traditional media paradigm. Public Service of Vojvodina has a great opportunity to modernize its concept. A condition the education at all levels and implementation of changes in the painless way. Processes in the public service are too slow, public service is huge, and traditional paradigm of management, over organizational structure, to the production of programs is a serious stumbling block for the newspaper and the chances that bears up digitization. One solution is education at all levels. Employed in production have shown good will.

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8. REFERENCES

THE USE OF MODERN MEDIA TECHNOLOGY AS THE QUALITY ASSURANCE OF HIGHER EDUCATION

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Abstract: When the higher education is discussed in the current context, which is characterized by reforms and development, when it tends to be defined and determined in light of current social changes, it is not possible to ignore or exclude the effects of technology and media on the entire society, including the area of higher education. In the situation of such development, it is reasonable to expect from modern technologies to take over a major role in the implementation of educational objectives, as well as to become a factor that permeates and connects every aspect of education. Therefore, today it is not possible to imagine a qualitative and competitive education which offers to students all necessary knowledge and competencies for the life in the 21st century, without including modern technologies and new media in such education. Recently, there are many discussions on the importance and quality of higher education, the current reforms, declarations and conventions, all of which aim to put higher education at the center of the social progress. Therefore, the paper specially emphasizes specific aspects which enlighten the use of modern media technologies, services provided to students, learning outcomes and competencies for 21. Century, applied teaching methods and resources, which aim is to point to their major impact on the provision of the quality education.

Keywords: technology, new media, higher education quality, teaching.
only monitor, but also initiate and lead the development is pointed out.

Projects that deal with the study and development of the necessary competencies for the future, by classifying skills for the 21st century, identifying the necessary basic skills and the ability to live and work in such a volatile environment, are being developed. All of them are seeking a foothold in education, because it can offer an answer and be reformed in accordance with the requirements of society and the growing needs of business and industry, and thus develop pupils’ and students’ competencies needed for such society.

Special expectations are formed from higher education, from which is more expected, because it has a set goal to develop and adequately place educated and skilled people, competent to work in varying conditions, the usage of information and communication technologies and adapting to new changes.

When we look at the flows and directions of development of education during the last decade of the last century, it is clear that the system of higher education in Europe faces great pressure of globalization and the development of new technologies, which undoubtedly resulted in major changes in this area.

As a cause of the large number of unemployment, in many countries the reason that is related to the exceptional contrast and disharmony between the output profile of professionals and industry demands is being stated. Therefore, the qualifications that professionals receive through the education at colleges are not in accordance with the needs of society. The educational system has failed to fulfill its role and offer the necessary professionals to the society, and it can be said that despite the great efforts and reforms that are taking place are still well behind the development that is happening in other sectors of society.

That kind of a situation is unjust and therefore it is resorted to the essential and crucial reforms of the education system in all European countries. Higher education has been under the scrutiny of the past decade, because it is more and more insisted on raising the quality of teaching and the services offered to students at universities throughout the Europe.

As a significant component of education which mostly needs to respond to the demands of modernity and current affairs, imposes the concept of quality. This is especially related to the field of higher education, whose main objective is the training and education of young people who are active in their own development, and contribute to community development.

A special aspect of the reform of higher education, on which we will in this paper put the greatest emphasis, is related to the development of modern media technologies, their use in higher education in order to improve the quality and benefits that that kind of teaching has for the development of the necessary competencies of students for the knowledge society and an era of information technologies.

There is no denying that our college campuses are filled with students who have grown up with technology and, as a result, have integrated technology into almost every aspect of their lives. These students—the Net Generation, Generation Y, Millennials, or digital natives, as they are often called—report having high levels of ownership and use of various technologies. According to a Pew Research Study (2010), Millennials are those born after 1980 and are, therefore, the first generation to come of age in the new millennium (Donovan L., Green T., Hansen E. L., 2011).

In the global information society, where information is in unforeseen speed transmitted in temporal and spatial dimensions, the application of modern information and communication technologies is becoming modern methodological and pedagogical determinant of the education reform. The education for the 21st century, education for the knowledge society is often mentioned in the literature, and it becomes not only the future of education, but its actuality, to which the related reforms of the education system are turned to. Therefore, this paper will point out the importance of the use of media technology in teaching and education in general because that kind of a paradigm is becoming the reality with which we are all facing, whether we like it or not.

Development of new information and communication technologies is so important that it represents a necessity and a challenge in all spheres of human life, in order to more adequately and better organize the life and work of each individual. Progress is so important that it can be spoken about a new revolution, which brings many benefits and facilitations which are necessary to be used in order to improve the work and life in society. Especially in the upbringing and education practices, that becomes the backbone of progress and direction of development of the individual’s personality. Therefore, the use of information technologies in the teaching practice is the necessity and need of modern education in order to be able to meet all the requirements placed upon it in terms of better quality of training the individuals for a successful life and development.

2. REFORM AND IMPROVEMENT OF QUALITY IN HIGHER EDUCATION

Higher education is an area that has, in the last decade, been the most vulnerable to changes and reforms, because, in proportion to the development of science and technology, it is also expected that the educational system provides different contents and ways of working, and thus qualify the students that will have the competencies for life and work in such a variable environment. It can be freely said that every aspect of higher education is somewhat modified, amended and reconstructed (Lungulov, 2011). All tendencies and changes that are taking place are aimed at improving the quality of education and teaching, the quality of the acquired
knowledge and developed skills and competencies in order to successfully meet the demands of a society that is constantly changing and evolving.

Intensive reform of higher education in Europe starts with the adoption of the Sorbonne Declaration (1998), and then signing of the Bologna Declaration (1999), which was so far accepted and signed by 47 countries, including Serbia, which was officially accepted into the Bologna Process at the Ministerial Conference in Berlin in 18th September 2003. Since then the major reforms started that have affected all universities in Europe.

The basic ideas that are promoted by the Bologna Declaration are relating to the unification of Europe and they include “creation of a European knowledge society”, which is based on two pillars - the European Research Area (ERA) and the European Higher Education Area (EHEA). Their implementation has a special strategic place in European integration (Komnenović, 2005).

The Reform movement has implied changes in the structure of the system and refers to the key factors that are the backbone of higher education, and mostly on the organization of the studies at universities throughout the Europe, including Serbia. They included a number of changes related to the old system of study, such as: the forming of three-cyclic studies, the establishment of the European system of transferring the points, the mobility of students and teaching staff, changes in the studies program, increasing efficiency of the study, updating curricula, teaching innovation, the use of modern technologies in education, formulation of new learning outcomes, defining the competencies of graduates, as well as many other.

The Bologna Declaration has defined several goals that universities should realize in order to establish the European area of higher education as soon as possible. Based on the analysis and review of the literature (Zgaga, 2004; Komnenović, 2005; Gajić, 2006; Kulić, 2008; Handal, 2003; Harvey, Askling, 2003; Kennedy, 2007) and different interpretations of the objectives defined in many official documents issued by the European Ministers of Education and other organizations (Bologna declaration - Joint declaration of the European Ministers of Education convened in Bologna on the 19th of June 1999; Prague communiqué, 2001; Berlin communiqué, 2003; the Bergen communiqué, 2005; London communiqué, 2007; Leuven & Louvain-la-Neuve communiqué, 2009; Bologna Ministerial Anniversary Conference 2010 in Budapest and Vienna, Budapest-Vienna Declaration, 2010) which regulate the reform and changes to the education system, we will present a synthesis of the most important goals that are defined in these documents:

- The introduction of the three-cycle system of studies (bachelor study for 3 or 4 years, Masters degree for 1 or 2 years, and doctoral studies for 3 years);
- The introduction of European transferable credits ECTS (each subject has a set number of points, based on which the recognition and equalization of passed subjects is facilitated, and thus the mobility of students to other countries in Europe and to other universities);
- The introduction of the Diploma Supplement, which contains all the necessary information about the achievement and the structure of the curriculum, as well as all the extra work during the studies;
- Increased effectiveness of studies (division of extensive subjects on single-semester and dimensioning of the content and subject according to the time needed to master the responsibilities and workload of students);
- Increased mobility of students, teaching and administrative staff;
- Introduction of continuous quality control, which includes internal and external evaluation of higher education institutions and accreditation, as well as participation of students in evaluation;
- Upgrading curriculum and its alignment with the needs of society;
- Different organization of classes, where previously dominant classes are being more replaced with mentoring forms of work, seminar and research papers of students;
- The use of modern teaching aids and technology in the class;
- Higher levels of student participation in their own education, student participation in the evaluation of faculty and staff work;
- Upgrading literature, content, equipment and facilities;
- Formulation of learning outcomes and development of students’ competence in accordance with the needs of modern society;
- Creating conditions for the development of possibilities for lifelong education and lifelong learning;
- The openness and accessibility of institutions of higher education for all, democracy and equal rights for all who wish to study (according to Lungulov, 2011).

Such demanded changes were related to every aspect of higher education, beginning with the very organization of universities and colleges, through the management and leadership systems, to the change of plans and programs, the need for continuous quality control, modernization of methods, assets, literatures, all the way to a different approach and greater involvement of students. Therefore it is particularly important to, as far as possible, overcome rigidity, conventionality, and the lack of preparation of the educational system for the changes, which occur under the influence of globalization processes (Kulić, 2008).

A lot has been done and changes and the effects of the reform in many areas are evident. The efficiency of studies is increased, the students quickly and successfully complete their studies, the strain on students is reduced, evaluation of students is included as a standard quality control procedure, teaching becomes more interactive, more important is the participation of students in education, the use of information and communication technologies is increased in teaching, etc. We can say that
the changes caused by aspirations to create a single European area of higher education have visible effects. They mainly include system solutions, organization and structure of the universities and of studies and that is what the objective of the reforms of higher education was by 2010.

Mentioned reforms that have affected all aspects of higher education have as a goal, but also as a consequence, the increase of the quality. The quality of higher education is a phrase frequently mentioned in the EU documents, conferences, declarations, and all the efforts are, in fact, directed to increase it. However, the term of quality is still not clearly defined, nor there is an exact definition of what it means. But there are different aspects that determine the quality and could significantly affect its increase. All these aspects are checked by established procedures of internal and external evaluation. Also, each program of the study as well as college goes through the accreditation process, where all the elements are evaluated, quality indicators that can be provided by a certain institution.

The main drawback, however, is reflected in a static set of norms, which are very difficult to change and adapt in relation to the changed conditions. Hence, the standards almost always lag behind the needs, so that higher education institutions are not encouraged to adapt to new circumstances, include new information in certain areas, and to increase their quality (The European University 2010?).

Starting from the premise that the way on which the quality is defined significantly affects the method of evaluating the quality, in the area of higher education concept of quality is usually grouped into several categories:

- **Quality as a measure of value** – This is the traditional understanding of the quality in the academic community which as a goal sets the tendency to be the best in relation to a set criterion. The initial assumption is that the achievement of quality is a core task of the academic community, and that it itself can best evaluate what at some point is the maximum quality. On this way, the responsibility of the academic community in the use of institutional autonomy and academic freedom is emphasized. The main drawback of this concept of quality is a difficulty to objectify it.

- **Quality as a measure to adapt to goal** – This is based on the idea that the notion of quality of a particular program of study depends on the ultimate goal of programs’ beginners. For example, one program can be very good for the education of researchers, but also extremely bad for the forming of experts for practical work. In other words, this perceived notion of quality is based on the needs of the “user”, whereby one should not lose from the sight that the very term of user of higher education is difficult to define. Students, employers, academic community, public authorities – as a representative of the society – they all appear as users with not always equally perceived need. Hence, with this kind of formulated concept of quality, evaluation focuses primarily on assessing the relevance of needs.

- **The quality as a measure of achieving the threshold** – The existence of certain norms and criteria – standards – is assumed, which are the quality threshold, so that all institutions that meet the threshold are labeled as “high quality institutions”. The undoubted advantage of this approach is that it is objective, easily verifiable and uniform over the entire system of higher education. The main drawback, however, is reflected in a static set of standards, which are very difficult to change and adapt in relation to the changed conditions. Hence, the standards almost always lag behind the needs, so that higher education institutions are not encouraged to adapt to new circumstances, include new information in certain areas, to increase their quality (The European University 2010?).

Standards and recommendations of the European Association for Quality Assurance in Higher Education (European Network for Quality Assurance in Higher Education – ENQA), are based on a few basic principles of security and quality assurance in the single European educational area of higher education. Among them the most important are:

- Higher education institutions have the primary responsibility for the quality of its services and for assurance and security of that quality;
- Through the quality and standards of higher education the interests of society must be preserved;
- The quality of academic programs must be developed and promoted for the students and other beneficiaries of higher education in the entire single European educational space;
- Efficient and effective organizational structure that ensures the quality of academic programs is mandatory;
- In the process of quality assurance important are transparency and external and expert evaluation;
- The culture of quality in higher education should be encouraged and developed;
- It is necessary to start the processes through which the higher education institution can demonstrate its responsibility, including the responsibility for the investment of public and private capital;
- Responsibility for Quality Assurance is fully compatible with quality assurance for general improvement;
- Higher education institutions should present its quality at home and abroad;
- Development processes should not threaten the diversity and innovation (according to: Ristić, 2007).

**Table 1. Bologna impact directions and goals of the reform of higher education in Europe** (according to: Scott, 2007) In order to more clearly indicate the changes and directions of the reform of higher education that are brought by...
the said declarations, we illustrate the goals in the table which summarizes the directions of the impact as well as the global importance of the reforms.

<table>
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<tr>
<th>Plans of action</th>
<th>European objectives</th>
<th>Global importance</th>
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<tr>
<td><strong>Bologna 1999.</strong></td>
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<tr>
<td>easily readable and comparable degrees / qualifications (and the Diploma Supplement)</td>
<td>– eases the exchange</td>
<td>European qualifications become compatible with global standards</td>
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<td>– eases the functioning of the labor market</td>
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<td>– highly trained workers</td>
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<tr>
<td>two-stage system of study (basic and master studies)</td>
<td>– encourages mobility within Europe</td>
<td>European programs are aligned with global standards</td>
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<tr>
<td>European credit system (based on ECTS of a credit transfer system)</td>
<td>– encourages mobility</td>
<td>ECTS system is similar to other credit systems and thus encourages a partnership of European and non-European higher education institutions</td>
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<td></td>
<td>– encourages the reform of the curriculum and allows flexible teaching</td>
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<td>mobility of students (e.g., Socrates, Erasmus Mundus, Tempus Projects, etc.)</td>
<td>increases mobility within the Europe</td>
<td>reinforces the internal labor market in terms of student mobility and thus encourages broader mobility/education outside the home country</td>
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<td>cooperation in quality assurance (through the European Network for Quality Assurance in Higher Education ENQA)</td>
<td>– ensures public confidence</td>
<td>strengthens the global confidence in the European standards and facilitates comparison at international level</td>
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<td></td>
<td>– encourages exchanges/partnerships</td>
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<td></td>
<td>– improves quality</td>
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<td>Welfare of the European Higher Education area</td>
<td>strengthens the solidarity between the European higher education institutions</td>
<td>creates a European brand of higher education</td>
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<td><strong>Prague 2001.</strong></td>
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<tr>
<td>Lifelong Learning</td>
<td>extends the reach of the Bologna process (not limited only to the traditional institutions of higher education), includes other educational organizations as well as businesses and other social/cultural organizations</td>
<td>expands the scope / definition of European higher education and makes it compatible with other systems of post-secondary / tertiary education</td>
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<td>involvement of institutions of higher education and students (through the European University Association, the European organization of institutions of higher education and the National Unions of Students in Europe)</td>
<td>– widens the circle of support to the Bologna Process from participating countries and the European Commission, to student organizations and institutions of higher education</td>
<td>strengthens the European institution / institutions of higher education and allows them to establish a better dialogue with the world</td>
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<td></td>
<td>– involves in the process the key stakeholders, ie. students</td>
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<tr>
<td>Promotion of European Higher Education Area (EHEA) by Erasmus Mundus program</td>
<td>– increases mobility</td>
<td>complements/enhances the reception of foreign students in European higher education institutions</td>
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<td></td>
<td>– promotes the Bologna brand</td>
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<tr>
<td><strong>Berlin 2003.</strong></td>
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<tr>
<td>inclusion of doctoral studies in the Bologna process and the connection and joint action of the European area of higher education (EHEA) and the European Research Area (ERA)</td>
<td>– extends the reach of European harmonization on the third stage of the study</td>
<td>increases the quality/global competitiveness of European research and doctoral</td>
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<td></td>
<td>– associates the Bologna process with the Lisbon declaration</td>
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<td><strong>Bergen 2005.</strong></td>
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<tr>
<td>– re-emphasizing the connection between higher education and research in social development</td>
<td>– points out ties of Lisbon agenda and the Bologna</td>
<td>– strengthens the competitiveness of European higher education</td>
</tr>
<tr>
<td></td>
<td>– social dimension (higher availability)</td>
<td>– points out the need that the European higher education be open, but to academic values be critical</td>
</tr>
<tr>
<td>– European higher education area and the world</td>
<td>– emphasizes the diversity of European higher education, ie. makes it less vulnerable to market laws</td>
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We see that all the goals and directions of impact relate to the improvement of quality of education, inclusion and greater participation of students, increase of mobility and improvement of study conditions, the creation of a single European area of education and research, but at the same time development of the specialist necessary to the knowledge society.

Starting from these goals and principles, the universities in Serbia have, by accepting the Bologna Declaration, took the road of reform and ventured into a very large and demanding changes and reorganization of studies, led by the need to improve the quality of higher education and certainly getting closer to the European educational space, “although the scientific community is still holding extensive discussions about its real goals and the ultimate end points” (Kulić, 2008, underlined by Lungulov, 2011).

3. COMPETENCIES OF STUDENTS FOR TECHNOLOGICAL AGE

When we talk about quality, we cannot ignore the final outcomes and goals of education, which offer an answer to the question of what it is that we want to achieve through the education, especially in terms of training students for life and work in the 21st century? What professional knowledge and skills, but also general skills and competencies we want to develop? What experts should we have when they finish their education? These are just some of the questions posed for which we are looking an answer if we want to improve the quality of higher education. But also the most important are starting points in the planning and creation of curriculum and study programs. According to that, we should take into account the needs of today’s society, because it cannot be expected from education to have the same organization, means and methods of work, goals and outcomes that it had decades ago.

From the perspective of the quality of teaching and education, the essence is in what the students get through higher education, which undoubtedly is the most important indicator of quality, as in every aspect and the factors that directly or indirectly participates in the educational process, so and the quality of the education policy. New time and new classes seek partners who participate, ask, think, criticize, research, collaborate, and in this way develop the necessary independence and competence.

During the planning and organization of learning, special emphasis and importance gets a new educational paradigm, in which learning is defined as an active process, and it is insisted on different work methods. Students are placed in the center of the educational process and it starts from their activities and involvement, the use of modern technology is emphasized, and the role of the teacher becomes the role of moderator and the role of counselor/mentor in the process. The whole teaching is based on learning outcomes and results to be achieved and based on them the curriculum is being created, ways of work are planned, forms and resources, content that will be processed and activities and tasks students will be realizing are being determined.

Such an approach to teaching includes the change of the paradigm of learning and education, and thereby the more emphasis is on the development of competencies. Information rapidly become obsolete, replaced by new, more modern, science and technology are developing, the whole knowledge of mankind is overwhelmingly increasing, what we knew yesterday becomes part of our history... Therefore, the acquisition of knowledge and ready information becomes outdated learning recipe.

Perceiving this kind of a situation it is completely unrealistic to expect that education as a carrier of social change, can provide an answer such as mere adoption and memorization of facts. Information becomes outdated so quickly, that their memorizing becomes inefficient. Therefore it should be taken into account the principles that bear a new educational paradigm and put in the center the development of capabilities, core competencies for life in a knowledge society. Too large textbooks, ex cathedra teaching and reproduction of content that teacher exposes (magister dixit), whereas the key competencies of students are understood as the uncritical acceptance of one truth, the ability to memorize and accurately reproduce the content, non-interference in their own education and learning, became long gone time.

It is necessary to realize that it can no longer be expected from students to learn and reproduce material, to uncritically approach to educational content and passively accept all of the information provided by the teacher or from the textbook. New time sets us new insights, perspectives, new expectations and aspirations that need to be achieved and realized so that we would able to meet not so easy demands of today.

When we look at the profession, businesses and professionals who dominate today’s business world, we conclude that to know where to find specific information is now more important than to be able to remember it. Given the speed of discovering the new and outdated of information in some areas, it is important to provide such working conditions for students that will allow them to discover new things, develop curiosity, independence, resourcefulness and initiative. Professionals with such general skills are required by today’s era. The quality of education is found in the competencies, developing therefore those competencies that will enable students to have active and quality of life in modern society. Thus we come back to the learning outcomes and the needs to during their formulation and planning of the educational process takes into account all the capabilities required by the conditions in which the economy, industry and society in general is developing.

According to the European Commission (2006), the competencies that are necessary for self-learning include disposition and ability to organize and control own learning process. Competencies include the ability of students to independently organize their time effectively, solve quests, reach, assess and acquire new knowledge, as
well as to apply that knowledge in different situations and different context. Special emphasis is placed on the responsibility and ability to devote time for learning. Characteristics that are also important include flexibility, adaptability but also autonomy and discipline, management of information in the process of learning, and development of critical thinking. It is necessary to possess the ability of successful communication, appreciation for diversity, as well as self motivation and confidence (Subotić, Gajić, Lungulov, 2011).

Also, according to the declaration by UNESCO (World Declaration on Higher Education for the twenty-first century: vision and action 1998.) universities have an important role and should meet the challenges of social progress and development. In this concept, a socially responsible university develops active and informed citizens who will make decisions and lead productive lives. It is expected from the universities to offer solutions to the problems of sustainable development, social inequality and other phenomena that have a key role in shaping the world of today; in one word to offer a vision of the future (according to Dolonec, 2008).

The Melbourne Declaration acknowledges major changes in the world that are placing new demands on education:
- **Global integration and international mobility**: this heightens the need to nurture an appreciation of and respect for social, cultural and religious diversity, and a sense of global citizenship.
- **Globalization and technological change**: the nature of jobs available to young Australians is changing faster than ever, requiring continuous learning and higher achievement levels than in the past.
- **Complex environmental, social and economic pressures**: to meet these challenges, Australians must be able to engage with scientific concepts and principles, and approach problem-solving in new and creative ways.
- **Rapid and continuing advances in information and communication technologies (ICT)**: these are changing the ways people share, use, develop and process information and technology. Young people need to be highly skilled in the use of ICT (Bowman, 2010).

We have seen that international trends in education point to moving of the focus of interest of the approach “the teacher-centered” to an educational approach that is more “oriented on the outcome”. This trend has given new momentum by the Bologna process, which places emphasis on the student-oriented learning and the need for greater accuracy and clarity in the design of the curriculum, as well as in terms of their content. It is obvious that the learning outcomes play a crucial role in ensuring the transparency of qualifications and qualifications frameworks, while they are also contributed to the appliance of numerous policies of the Bologna Process within the European Higher Education Area. (Kennedy, 2007).

A different approach to education as well as learning outcomes is mostly based on the needs of the labor market, as modern trends in industry, science and manufacture, set and initiate new challenges to education. Students are expected to have different, functional, usable, and applicable knowledge. Faculty, teachers, and other factors involved in the educational process, are expected to constantly raise the quality of teaching as well as the creation of study programs in accordance with the current needs of society and the labor market. Therefore, in the center of quality education, the outcomes and results of teaching are set, which on adequate way illustrate what the college is offering and what kind of professionals it can place in the work environment. Foothold for such determination of education, we can find in terms of “knowledge society” and the “learning society”, which have been, over the past decade, mentioned in professional and scientific circles, because they change the view of education and life in general. They set goals in which the emphasis is on the development of skills and key competencies for life and work. In such understood society the imperative of modern education is to develop competencies of students for independent orientation and learning during the studies and after graduation. When they leave their universities, their knowledge will have to be substantially upgraded, updated, modernized, and even abandoned. Therefore, they need to be able to actively use information sources, to reflect, analyze, enrich their experiences, critically evaluate and develop independence and competence in their environment.

It is important to emphasise those competencies in higher education need to be developed and acquired throughout the entire schooling. Therefore, it is important to be specified for each level of studies separately and for each individual subject. When designing competencies and defining of what is aimed to do with the study program, i.e. what knowledge, skills and abilities students need to develop, several factors should be taken into account. It is necessary therefore to consider all aspects of education that are relevant, and these are: the needs of society, teachers, students and employers. Because if we ignore any of these parties, we can be in the situation that developed competencies we cannot adequately use, or that there are not enough skilled staff, or that they do not meet the current needs of society, all of which results in a decline in the quality of higher education and its outcomes.

Competencies include a dynamic combination of cognitive and meta-cognitive skills, knowledge and understanding, interpersonal and practical skills, and ethical values. According to that determination, competencies developed during the study can be:
- generic or general (transferable to different areas of activity)
- domain specific (specific to a discipline or profession) (Tuning glossary, 2008, according to Vlahović-Štetić, 2009).

Generic or general competencies are considered those competencies that are applicable in a variety of professions. They were implied in higher education, so that they often were not specifically cited and singled out. Domain-specific competencies are those relating to the
immediate area and are the core of the educational program (according to Vlahović-Šteitić, 2009).

It can be said that the generic or general skills and competencies have recently gained an important place in education. This situation is a consequence of the big economic, social and technological changes, as well as the great requirement of possession of skill by society, economy and industry. Therefore, the new demands are placed onto the education, because the world is changing in such a way that it is demanded of higher education to enable the achievement of learning outcomes that include the development of general and specific competencies of students to an adequate level. When we talk about the general competence of students it is important to point out some important definitions:

- All students need a solid grounding in generic skills, in addition to discipline-specific skills, which will equip them for their various roles in the 21st century, both in the world of work and in society generally.
- These skills enable an individual’s potential to be realized in all aspects of life.
- The skills are required to perform all kinds of tasks.
- The skills are applied and performed in different combinations and at various levels, depending on the task.
- The skills are transferable from context to context.
- The skills are developed over a lifetime.

Generic skills development is the collective responsibility of schools, vocational education and training providers and universities, as well as businesses and the broader community and governments (Bowman, 2010).

One of the most important issues in planning the future of higher education is: What are the appropriate skills and competencies for students that they will require to work in the coming decades? What combination of knowledge and skills should be developed and predicted as needed outcomes of higher education so that they can be productive and contributing to the future? Global development, “smart” machines, new media, are just some of the indicators of how our view of the world and communication is changing, what implications does it have on labor and employment, and thus on people’s lives. The whole picture of the society is changing, and educational institutions need to consider how to better and more quickly adapt to changes.

New demands are being placed on education. The world is changing in ways that require education to ensure that students achieve a range of generic learning outcomes as well as discipline-specific learning outcomes. For example:

- Globalization and increased competition are intensifying the need for workers able to: engage with the organization’s goals; share information; work in teams; make appropriate decisions; and be enterprising – all with the ultimate goal of improving productivity.
- The shift to advanced knowledge economies has meant that the requirements for the information and knowledge management and communication skills integral to information and communication technology are changing.
- The complexity of economic, social and technical issues is heightening the need for critical thinking and problem-solving skills.
- The pace of change is intensifying the need for greater individual adaptive capacity and lifelong learning.
- Globalization and international mobility are highlighting the need to nurture appreciation and respect for social, cultural and religious diversity (Bowman, 2010).

There are many classifications and classes of indicators of quality where numerous aspects of education are listed, where significant place takes outcomes and results of studying. We believe that they represent the end product and result in which the effect of all other factors of the educational process is culminating. Therefore in the next part we will mainly focus on competencies that students need to develop, and the learning outcomes to be achieved, because we represent the position by which the graduate student, and what he got during the study, is the largest indicator of the quality of education.

Below we will list some of the most important concepts and categorizations of general abilities and skills. Some divide them in larger groups, while others give a detailed specification of properties that need to be developed by the students. In order to make more appropriate and more detailed classification, many international projects deal with the research of the needs of society and the economy for educated individuals and experts and based on that they create classifications of the most important skills that need to be developed by the students in order to successfully respond to the challenges of the growing needs of the community. It depends on the universities to take into account such systematization when they are designing curricula. In addition to domain specific, these general competencies are those from which one should start during the planning of the learning outcomes of each study program, study subjects, and even some teaching units and units, and they need to be worked and developed on the most during the studies at universities.

We note the example and recommendations of the Australian National Council (National Curriculum Board), where general abilities to develop each student are especially emphasized (The Shape of the Australian Curriculum, National Curriculum Board 2009).

- **Literacy**
  Students become literate as they develop the skills to learn and communicate confidently at school and to become effective individuals, community members, workers and citizens. These skills include listening, reading and viewing, writing, speaking and creating a print, visual and digital materials accurately and purposefully within and across all learning areas.

- **Numeracy**
  Students become numerate as they develop the capacities, confidence and dispositions to use mathematics at school, at home, at work and in community life. In the context of
schooling, numeracy is about students engaging with whatever mathematics they need within and across all learning areas.

- **Information and communication technology (ICT) competence**

Students develop ICT competence as they learn to use ICT effectively and appropriately when investigating, creating and communicating ideas and information at school, at home, at work and in their communities.

- **Critical and creative thinking**

Students develop critical and creative thinking as they learn to generate and evaluate knowledge, ideas and possibilities, and use them in combination when seeking new pathways or solutions. In the context of schooling, critical and creative thinking are integral to activities that require reason, logic, imagination and divergence.

- **Ethical behavior**

Students develop ethical behavior as they learn to understand and act in accordance with ethical principles. This includes understanding the role of ethical principles, values and virtues of human life; acting with moral integrity; acting with regard for others; and having a desire and capacity to work for the common good.

- **Personal and social competence**

Students develop personal and social competence as they learn to understand and manage themselves, their relationships, lives, work and learning more effectively. They learn to understand and manage their emotions, develop concern and understanding for others, establish positive relationships, make responsible decisions, work effectively in teams and handle challenging situations constructively.

- **Intercultural understanding**

Students develop intercultural understanding as they learn to understand themselves in relation to others. Students learn to respect and appreciate their own cultures and beliefs and those of others, and to engage with people of diverse cultures in ways that recognize differences and create connections between people (The Shape of the Australian Curriculum, 2010).

Based on the review of key competencies, the conclusion is that the success of every individual, now lies in the ability to deliver high-quality communication with others, to use information to solve complex problems, to be able to adapt to changes and respond to innovative demands and changeable circumstances, to be able to use the power and benefits of modern technology and to create and apply new knowledge and expand their personal potential and productivity.

Industry requires new graduates who are responsive to economic, social, cultural, technical and environmental change and who can work flexibly and intelligently across business contexts. They also require graduates to hold the practical skills that enable them to work effectively in their roles, while understanding the part they play in building their organizations (Bowman, 2010).

<table>
<thead>
<tr>
<th>Employability skills</th>
<th>Personal attributes that contribute to employability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication skills</td>
<td>Loyalty</td>
</tr>
<tr>
<td>Teamwork skills</td>
<td>Personal presentation</td>
</tr>
<tr>
<td>Problem-solving skills</td>
<td>Balanced attitude to work and home life</td>
</tr>
<tr>
<td>Self-management skills</td>
<td>Commitment</td>
</tr>
<tr>
<td>Planning and organizing skills</td>
<td>Common sense</td>
</tr>
<tr>
<td>Technology skills</td>
<td>Ability to deal with pressure</td>
</tr>
<tr>
<td>Lifelong learning skills</td>
<td>Honesty and integrity</td>
</tr>
<tr>
<td>Initiative and enterprise skills</td>
<td>Positive self-esteem</td>
</tr>
<tr>
<td>Teamwork skills</td>
<td>Motivation</td>
</tr>
<tr>
<td>Communication skills</td>
<td>Enthusiasm</td>
</tr>
<tr>
<td>Personal attributes that contribute to employability</td>
<td>A sense of humour</td>
</tr>
<tr>
<td>Personal attributes that contribute to employability</td>
<td>Adaptability</td>
</tr>
<tr>
<td>Personal attributes that contribute to employability</td>
<td>Reliability</td>
</tr>
</tbody>
</table>

Many of these skills can and should be developed during the education, through various forms of lectures, assignments, activities and facilities that are expected from the students. Only in this way will they be able to respond to the complex roles that employers are expecting of them and be competitive in the global market. To develop professionals with a broad range of knowledge and skills and a sense of social responsibility is a key role of universities.

Graduate attributes, as they are conceptualized in Australian universities, have their origins in the West Review. This review provided a framework of generic attributes that ideally every university graduate should hold (Department of Employment, Education, Training and Youth Affairs 1998, p.47). Universities have since developed their own sets of graduate attributes (Framework of generic attributes: West Review 1988)

- The capacity for critical, conceptual and reflective thinking in all aspects of intellectual and practical activity
- Technical competence and an understanding of the broad conceptual and theoretical elements of his or her fields of specialization
- Intellectual openness and curiosity, and an appreciation of the interconnectedness, and areas of uncertainty, in current human knowledge
- Effective communication skills in all domains (reading, writing, speaking and listening)
- Research, discovery, and information retrieval skills and a general capacity to use information
- Multifaceted problem-solving skills and the capacity for team work

Table 2. The Employability Skills Framework (Australian Chamber of Industry and Commerce & Business Council of Australia 2002).

As a result of the project that was realized by the Organization for Economic Cooperation and Development (*The Organization for Economic Cooperation and Development, OECD*), and which was related to the definition and selection of crucial competencies (*Definition and Selection of Competencies framework, DeSeCo, 1999*), another framework of qualifications and competence was obtained. The project was related to the analysis and separation of crucial theoretical assumptions on the basis of the work and research of various scientific disciplines, as well as the broader social and life context. The goal was to identify the crucial competencies/skills, because then the area was neglected in many countries but in the UK and Australia, and it was expanding to the United States. A classification that was then established is dividing the competences in three major categories.

**Table 3. The DeSeCo conceptual framework** (*OECD: Definition and Selection of Competencies framework, DeSeCo, 1999*).

<table>
<thead>
<tr>
<th>The ability to use tools interactively</th>
<th>The ability to act in socially heterogeneous groups</th>
<th>The ability to act autonomously</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to use language, symbols and text interactively</td>
<td>Ability to cooperate</td>
<td>Ability to defend and assist own rights, interests, needs</td>
</tr>
<tr>
<td>Ability to use knowledge and information interactively</td>
<td>Ability to manage and resolve conflict</td>
<td>Ability to form and construct life plans and personal projects</td>
</tr>
<tr>
<td>Ability to use technology interactively.</td>
<td>Ability to relate to others</td>
<td>Ability to act within the big picture</td>
</tr>
</tbody>
</table>

Projects of recent date, which are into research of necessary competencies, are mostly focused on the forecast of which competencies will be needed in the future. One of the most important is the project called “Competencies for the 21st century” (*21 century skills*, 2009, ATCS project), realized by a consortium consisting of the University of Melbourne and technology companies, CISCO, INTEL and Microsoft (*The Partnership for 21st Century Skills*).

**Table 4. ‘21 century skills’ (ATCS) project** (*The ATCS project’s conceptual framework of 21st-century skills, 2009*).

<table>
<thead>
<tr>
<th>Ways of thinking</th>
<th>Ways of working</th>
<th>Tools for working</th>
<th>Living in the world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity and innovation</td>
<td>Communication</td>
<td>Information literacy (includes research on sources, evidence, biases etc.)</td>
<td>Citizenship – local and global</td>
</tr>
<tr>
<td>Critical thinking, problem-solving, decision-making</td>
<td>Collaboration (teamwork)</td>
<td>ICT literacy</td>
<td>Life and career</td>
</tr>
<tr>
<td>Learning to learn, metacognition</td>
<td></td>
<td></td>
<td>Personal and social responsibility – including cultural awareness and competence</td>
</tr>
</tbody>
</table>

Based on the review of the above classifications, as well as the competencies that are set out therein, we can conclude that they include a wide range of properties that are related to all aspects of life and work. What is particularly important is that each classification states the ability to use information and communication technology (ICT). They are emphasized as very important and were mentioned in every division as important for employment. Indeed, at the present time we cannot imagine any professional of any kind of profile, which is not able to use a computer, to browse the Internet, use the electronic media to communicate and collaborate with others, to find adequate information and solve problems with the help of technology.

In professional literature and with numerous authors we encounter the use of different terminology, but regardless of the terms that are used, they all reflect the same meaning and substance. Some of the terms used are:

- Information and communication technology (ICT) competence
- Technology skills
- Technical competence
- Research, discovery, and information retrieval skills and a general capacity to use information
- Ability to use technology interactively
- ICT literacy (*Gourley, 2007*).

As one of the most important competencies for life and work in the 21st century, all the authors state technology literacy, the ability to use modern technology, knowledge of technological tools and new media, their advantages and limitations in use, but also the opportunities they provide. Modern technological advance can fit alongside...
the Renaissance and the Industrial Revolution in terms of
the unprecedented business challenges in a world in
which history seems to be accelerating, and time seems to
warp (Gourley, 2007).

4. INCREASING THE QUALITY OF
TEACHING THROUGH THE USE OF
MODERN TECHNOLOGY

The information age carries the potential of introducing
significant changes in higher education although it is hard
to expect that the basic functions of traditional academic
institutions will change. The revolutionary elements in
information technology, which also affect the
transformation of higher education, are the
communications, storage, storing and accessibility of the
information (Castells, 2000, according to Altbach, 2007).

Theoretical considerations, as well as the researches of
the influence of mass media and modern information and
communication technologies in the life of individuals and
society in general, are increasingly becoming important
and significant in the scientific community. Communication study as a science now becomes very
topical and more and more scientists are dealing with this
issue as it becomes an integral part of the social, as well
as the natural sciences. However, despite the large
number of researches, it still cannot be said that clear and
uniform results and theories about the impact of modern
means of communication in people’s lives exist. It can be
said that we still know too little about the interrelation
between the mass media and society, about laws of media
action and their impact on social reality. Although the
existence of a theory of the media, certainly seems like an
unrealistic request, because the media as well as their
contents are too different and the conditions under which
the media operate also cannot be assigned to one single
significant group.

A variety of functions that are assigned to the media are
significant as well. Their impact on people’s lives is
undeniable, but they, with their content and ways of
action may have different functions and effects.
Meanwhile, in the literature, a large number of listings of
mass communication functions can be found that are not
only heuristically important, but also serve as paradigms
for the eventual determination of the focus of the
research, and therefore in advance are structuring the
media-political discussions. Pointed out are, for example,
the functions of articulating opinion, the creation of
public, control of politics, of education and nurture,
political socialization, creation of focused public; and
thus, mutual communication groups, interest groups,
political parties and other. (according to Kunczik M.,
Zipfel A. 2006).

Modern life requires the individual to be informed,
obliges him to develop his communication skills by
turning on (off) the radio and TV or logging on (out) the
websites. That way it is achieved more dynamic and
flexible relation between the individual and society, but it
must not be forgotten that these mass communicators are
in great measure self-sufficient systems that spread
unrestrictedly, freely and very inappropriately.
Uncontrolled power of the media lies in the fact that they
even something insignificant present as significant, and
very few people are able to always have a critical distance
(Aćimović, 2009).

This is particularly referred to the most topical impulsions
in people’s lives, such as television, computers, the
Internet, newspapers, social networks, mobile phones and
other. Exposure to a various sources of information, the
never-ending influence of modern media culture, the
usage of different technical resources which are providing
him access to the Internet wherever he is located and in
any time frame, are leading to changes in the individual’s
life, the environment in which he lives, ways of work and
formation of new ideas and tendencies, different values,
higher needs, which is in the large amount affecting the
education as an important part of the progress of any
society.

A complex network of socialization agents receives,
through the media, a new dimension of meaning for the
development and growth of children. It is well known that
the family, school, peers and other factors in a great
measure determine the identity, role and position of youth
in society. However, television and other forms of media
culture in the area of socialization influences have
increasing importance in shaping the daily lives of people.
They are affecting ways of behaving, thinking and
forming images that we have about ourselves and others
(according to Đerić, Studen, 2006).

We can say that in the entire process of education, the
very important factors are the surroundings and learning
environment, acquiring experiences and how much does it
inspiring and stimulating effect it has on the development
of the individual and his potential, and that is especially
important to the students because their needs are even
more evident and because of that, therefore require
greater involvement of additional stimulants that will
have the stimulating effects and enable a positive
experience and stimulating environment for learning and
competence development. By realizing that today, the
environment of young people is mostly means of massive
communication, it is clear how big is their impact and
importance in education and skills development. Many
authors agree that the media today is more responsible for
the youth’s image of the world and that their role is more
important than the role of the family, school and other
institutions, that they, with their contents are shaping the
everyday life and affect the forming of viewpoints,
opinions, attitude and behavior.

In that way, the modern technology and media are
becoming a resource that is very important to use in
education. Currently that is their highest occupation, most
of their time they spend on the computers, using them for
learning, searching for information and it is very
important to emphasize all of the advantages of
technology and use them to get to the positive results in
the educational process and achievement of learning
outcomes. This will motivate students, improve teaching
contents, to innovate teaching but also with that student
will get the chance to, through the use of modern technology, develop the competencies needed to knowledge society and to train themselves for self-handling, use of information in problems solving and to develop a critical attitude towards the available information and sources.

The Melbourne Declaration states that, while literacy and numeracy and knowledge of key disciplines remain the cornerstone of schooling for young Australians, schooling should also:

- support the development of skills in areas such as social interaction, cross-disciplinary thinking and the use of digital media, which are essential in all 21st-century occupations
- include as a legacy for young people national values of democracy, equity and justice, and personal values and attributes such as honesty, resilience and respect for others (Bowman, 2010).

As it was mentioned in the previous section, the modern trends and changes brought by the Bologna Declaration are indicating to the change in the traditional paradigm of learning and education. Subjective position is assigned to the student, so that the focus is not only on teaching, but the emphasis is also on the competencies that students should acquire after the course is completed. So, the process of teaching is from the teachers, curriculums, moving onto the student, his needs as well as the quality of knowledge and skills he acquires during his education.

Higher education classes should be based on the principles of a new educational paradigm. All the principles mentioned do not have much significance if they remain declaratively said and written. It is necessary to practically apply and organize classes and studies according to these demands. Teaching represents a place for the exchange of experiences, ideas, critics, acquisition of knowledge, but also the development of important skills such as critical thinking, problem-solving ability, communication, teamwork, cooperation and respect and other.

Such a teaching implies teachers who are willing to cooperate, acknowledge other people’s opinions, who are open to suggestions, innovative and flexible. Teachers who are characterized by these and similar features would be willing to include new methods and forms of work, to organize classes in a different way, to implement adequate teaching materials and base lectures on the use of modern technology and media. In such work conditions, students are becoming more motivated, interested, active and creative. When we talk about cyber Bologna, we conclude that the investment in computer infrastructure will be crucial. In a world in which access to information is crucial, dysfunctional or outdated infrastructure which is used in the computer world will prevent any attempt of taking the leading position in the global context (Gourley, 2007).

It is important to specify the importance of applied principles as well as the work methods that must be planned and organized so that students can:

- acquire knowledge from the various fields
- link knowledge from different sources and access the information critically and independently
- actively participate in the planning and realization of courses
- acquire skills for the realization of researches and analysis
- gain experiences in methods that promote entrepreneurship on different levels
- have opportunities for esthetic expression
- analyze issues of professional ethics
- present the content and materials for different target groups
- work with and use the means of information technology and other teaching resources (Berg, 2006).

An important determinant of the quality of higher education from the aspect of quality of the study program at the European educational space, in addition to functional complementarities of a greater number of the “Bologna components” (objectives and learning outcomes, competencies, innovated content, pedagogical and methodological components, ways of monitoring students’ engagement during the teaching process, the new learning systems for students, the choice of primary and general literature, etc.), will be modularization of learning content. That kind of study programs could be recognizable in the European educational area and be initial, but also very important factor of harmonization of ours with the European system of higher education (Branković, 2007). Besides the academic programs, important factors of quality assurance of higher education are the quality and effectiveness of the teaching process, therefore the achieved outcome of learning, as well as the developed students’ competencies. (Gajić, 2009).

It is expected that universities offer different educational solutions and policy, which must be started from the changes of the curriculum and the assumption that the student is at the center of learning, which therefore encourages self-regulated and interactive learning. This opens the possibility of constructing the teaching goals that can be measurable learning outcomes, i.e. competencies which students will acquire. Such an approach also involves shaping the curriculum based on the competencies as a new paradigm in higher education, which seeks to achieve constructive connection of learning outcomes with the contents of academic disciplines and with approaches to learning and teaching, and student burden (Vizek Vidović, 2009).

Research of modern information and communication technologies shows that today it already has such possibilities and that it can, in large amount, simulate the natural course of teaching process, individual ways, forms and methods of learning and to create such an intellectual or a learning environment in which every student can progress as much as he is allowed by his intellectual abilities, motivation and prior knowledge.

Teaching technology provides:

- An objective and systematic control of success in teaching process;
Information technology is beginning to shape and create the new dimension to teaching and learning. Libraries which used to be the warehouses of books and magazines, now play an equal role on the Internet, publications are available on the website, users are accessing from different locations and use the virtual libraries as a great resource in learning and education, but also in researching. Scientists, researchers, professors, are more and more using available editions for help in their researches, but also for their academic promotion. The institutions themselves are changing their approach to education, they are evaluating the student’s initiative, search for new sources of information, students outside the university campus have the possibility of learning and the literature is available to them, they can listen to lectures, communicate with professors, organizational information, online examination, and similar.

Universities and other educational institutions in industrialized countries are beginning to use information technology offered by the academic programs in the world. A large number of them is focused on developing countries. Studying in areas such as economics can be attended via the distance education over the Internet, and many institutions that offer education are considering foreign markets as the key to their success... At some universities, foreign students can get their certificates over the Internet (Altbach, 2007).

Distance learning is rapidly growing and it is providing the democratization of higher education, because that way education is accessible to everyone, regardless of age, living conditions, employment and family situation. Many people, for different reasons cannot be at the university, attend lectures, and participate directly in the classes and campus life, therefore the distance learning is opening to them completely new possibilities. They can listen to lectures at home on their computer, or in local training centers which exist in many countries. Literature is available as well, and communication with teachers is provided over various websites, online platforms and social networks. Hence, a student, regardless of their physical distance from the university, can be completely equal to other students who are being educated in the campus and are directly attending classes. It is allowed to adapt his duties to his time, life and obligations, to approach the learning at a time when it suits him, schedule activities and tasks required of him in accordance with his obligations and achieve success, pass the exams and fulfill his objectives and learning outcomes the same way as students on campus. It is important to mention that in this way teaching and studies are not losing quality, all anticipated activities are processed, suggested literature is consulted, all prerequisites and test activities are finished and thereby learning outcomes of the specific subject is achieved.

Also, when we talk about democracy and education accessibility for everyone, it is important to point out the importance of information technology for teachers, associates and researchers that are involved in the educational process and are working with students. Scientists that are working at the universities where there

- Self-monitoring of learning outcomes;
- Individualization of classes;
- Active relationship between students during the teaching and learning towards the various sources of knowledge;
- Receiving feedback;
- Control of the student’s activity;
- Selection of a variety of strategies and presentations of learning material;
- Adaptation of the material to individual abilities etc. (Danilović, 2010).

However, it is important to mention that there are some authors who emphasize the negative impact of modern technology on the educational process. Here are some important arguments, which Professor Brenda M. Gourly stated in her speech at the opening of the London Conference of Ministers responsible for Higher Education in the Year of 2007.

- Amateurs today put the contents on websites that are created by them for free. Because of this trend many critics are referring to current age as the age of creative equals.
- Some of the most successful Internet companies use the business models that are more or less based on the contents which are designed by the very users (Wikipedia, MySpace, Facebook, YouTube and other).
- Mass collaboration, form of creation of equals completely changes our business model. If creativity of equals is one of the most powerful industrial forces of our time, we who work in higher education, have to wonder about the creation of some of our educational materials, not only because our work model is expensive, but also because it becomes too slow in a world that is used to quickly fulfill the needs of customers.
- Scientists are accustomed to cooperate in the research process, and they will now have to accustomed to the teaching process. We alone cannot offer our students such opportunity of choice, that we could offer in cooperation with related universities.
- Mass collaboration on the Internet is dramatically changing the research area. A phenomenon known as “usage of crowd’s services” emerged, where companies describe the research problem and put it on the Internet so that it can be solved by whomever (according to Gourley, 2007).

The question is what all of this has to do with education? Correlation is twofold. First of all institutions of higher education will probably have to behave more like private sector businesses and consider the possibility of buying some companies from the educational innovation field. We do not have to invent everything by ourselves. Also, cooperation must be at the heart of the changes affecting the European area of higher education as we will only by cooperating be able to use all resources of a large society of students and scientists and therefore share our common goods (Gourley, 2007).
are no adequate and quality libraries, the Internet greatly eases the access to the necessary information. The researches, scientific publications, important international academic journals and books that are helping them in the realization of their own research and improvement of the quality of higher education are available to them over the Internet. Also it is possible for them to have the establishment of contacts and cooperation with researchers and scientists from other institutes and universities which they can work and realize researches and significant projects with. In that way it the mobility of teaching staff can be organized, visits to other universities, visiting lectures, which certainly has a great positive impact on students as well, contributes to the exchange of experiences, examples of best practice and improvement of the entire educational process at universities.

This is particularly important for developing countries, and they have succeeded to use the benefits offered by information technology in higher education. For example, most of the major universities, which are using distance education, are located in developing countries. The African Virtual University was created as a result of efforts by a number of African countries in the use of the Internet and other information technologies to satisfy their own needs. The success of that university has been somewhat limited, and many study programs and courses are based on the curriculum of the North. E-mail has a significant impact on improving communication among scientists and on the creation of networks in developing countries. Although it cannot be expected that the information technology will transform the higher education, nor can it be a universal solution for the needs of higher education in developing countries, it is one of the key elements of globalization in higher education (according to Altbach, 2007).

It is also important to point out the important setting, and that is that with all the positive examples and the effects of the use of new technology and media, they need to have a role of a partner in the discussion, to be carriers and a source of information ie public educators and communicators, and to easily and successfully be used for educational purposes. However, often it is not like that, so it’s an important task to train a young person to develop his own attitude, personal responsibility and critically access contents that he see and hear, and not to accept uncritically all the information available to him, but to take an active approach and take responsibility for own education, entertainment, and life in general.

The results of many studies have shown that the current generations are computer and technology literate, that they easily handle computers, use the technology and use it in everyday life, but that they are not IT literate. Appropriate use of computers and the Internet does not automatically mean an understanding of the content, messages, assessment of quality of information, understanding of the meaning, awareness of the dangers and possibilities of manipulation. Also, there is no developed awareness of the legal and ethical dimensions of browse the internet, because today we have the need to talk about the respect of Internet ethics. Therefore, it is important to direct the attention in the family and the school on the development of information literacy and media education in the direction of developing a critical attitude of youth towards the contents they are exposed to, and assessing the quality of these products, so that all their benefits could be used in the educational process and thus contribute to its quality.

5. CONCLUSION

Life of today, which is characterized by an abundance of novelty, changes and different demands, implies special sensibility and success in adapting to the demands of modernity. The changes are reflected in all aspects of life and the reality of the individual and therefore they require him to have speed and a willingness to change. In a world where information travels at an incredible rate and become publicly available to everyone, means of mass communication represent an important aspect of the life and work of every individual. Mass media and modern information resources are the basis of communication and are crucial in the transfer of information and thereby gain great and important role in the lives of all people regardless of where they live, nationality, race, religion, social status. Information becomes publicly available to everyone and the flow from one end of the globe to another occurs in fractions of a second. Everyone is able to see and hear everything. This opens the possibility to set up global markets and global polygon of information which everyone can use. In this fascinating and turbulent era, find yourself, form your own view of the world, be yourself, develop critical thinking, to make a distance, becomes the goal of every individual in which each of us survives and copes in different ways. Therefore, the objectives to be set up in all the aspirations of society and especially in the field of education imply different formulations.

In such a situation of rapid development and progress is utterly unrealistic to expect that the education can offer such response as mere adoption and memorization of facts. A new educational paradigm must put in the center the development of capabilities, core competencies for life in a knowledge society.

In order to develop such, crucial competencies necessary for today’s society, it is necessary to stress the importance of an adequate formulation of learning outcomes which contributes that the students are clearly notified of what is expected of them, the level of expectations is ranked, according to that the teaching methods are prepared, but also the methods of monitoring progress of students and evaluation of their work. It is very important to accurately express the desired activity of students that will demonstrate their knowledge or skills, and this is particularly true for those activities that will be followed on the basis of which the teacher will assess student’s achievement.

The key objective of the University Strategy for skills for learning is to ensure that all students are supported in developing the skills they need to maximize their use of
the opportunities offered by undergraduate and/or postgraduate studies in order to achieve their full potential. To this end we aim to:

- Ensure that skills for learning are embedded in the curriculum of all programs
- Build in the early diagnostic assessment of student skills which would enable appropriate action to be taken
- Provide a range of opportunities outside main programs where students can address gaps in their skills
- Integrate the development for learning and employability skills within the PDP/T system such that appropriate ongoing support is provided to students throughout their university career.
- Award credit for skills attained (Individual Faculties and departments may wish to award credit for skills attained within discipline modules or modules designed specifically for skills development) (Learning and Study Skills Strategy, 2008).

The reform that has changed and is still changing higher education system implies that the quality of education is set as a priority and therefore all efforts, changes, be focused on answering the question: How to increase the quality of higher education? In addition to the many factors that influence the quality we believe that the learning outcomes and competencies that students receive during the studies and after graduation are one of the key indicators of quality.

The needs of the present, the present situation, as well as predictions about the development of society and the future, represent the main strongholds that dictate the educational goals and outcomes, based on which should be further designed the whole educational policy, curriculum and study programs. Competencies that we want to develop in students represent the most important indicator of income based on which the quality of an education process can be adequately evaluated. Study program, the output profiles, subjects within the program, contents covered, teaching methods, everything should be organized and planned in accordance with the objectives and learning outcomes.

In addition to the many functions that the media have, it can be freely said that they as the dominant medium become the bearers of an entire culture. More frequently we can hear phrases such as: media culture, media literacy, media education, which define aspects of life and work imbued with the media. Media becomes part of reality and an integral part of one’s everyday life. Therefore it is impossible to omit their influence and importance of the social norms, values, systems, but also on personal principles, worldview, moral principles...

Educational technology has become an interdisciplinary field, the field of work and application consisted of a variety of scientific disciplines and knowledge domains such as instructional design, development and implementation of media, computer and information science, telecommunications (distance learning), innovation, and especially the psychology of learning and pedagogy. Exactly now it must be understood in such manner, and its previous definition should be expanded. It initiated the appearance of ideas of establishing in Europe a “European Television University”, “European Institute for the promotion of distance education”, “University of the people of Europe”, “European Association for distance learning”, “Dutch Open School,” or the world “Media University” (Canada), “Heavenly Teacher” (India), etc., which says everything about its possibilities and importance for the realization of the upbringing-educational process (Danilović, 2010).

It can be concluded that the objectives of the reform are clearly formulated, to proclaim the significant ideas and in a way that their realization would certainly lead to a significant improvement of education, and thus society in general. However, many of these goals remain only an ideal to which we aspire, which we are yet to adopt, accept and implement, in order to be able to talk about the importance and success of the reform of higher education.

**LITERATURE**


THE ROLE OF MEDIA IN ELECTION CAMPAIGNS

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Abstract: Today it is almost impossible to imagine a campaign without the role of the media and its technological features that convey to his audience the necessary information which affect them, create their awareness and help them to decide on the choice for a particular political party. The question is whether it is possible to talk about the media have, or at least should, unbiased attitude towards political parties, which would objectively inform and represent candidates. Media experience various trials, but their role remains crucial in informing about the progress of election campaigns. However, they are often politically visible, especially financial impacts resulting in an imbalance of media coverage. Today, modern man is constantly bombarded by information from printed or digital media, and this attack of information is especially evident during the election campaign. What is easy to see that daily politics is slowly crawl in the media which is entertaining or educational. Be informed, be active politically, has been crucial for the business and private life. However, a major case of abuse of the media, its space, manipulation, where it creates a false argument that contributes to their interests. Good condition for democracy, free media are bearing the imprint of the nature, character and features of a society..

Keywords: election campaigns, media, political marketing.
regarding the selecting options that will lead to a future society.

The era in which we live is undoubtedly historic time of change in all spheres of human life, so we may say that the phenomenon of globalization is not tied to any nation and territory, but also touches on any individual on the planet. Quiet political restructuring, and economic, cultural, religious, security and other power takes place under the cover of a variety of communication forms and content, thanks to the mass media, which made the transmission of values and social dominant paradigm. In the universe, each system works within itself, but also by the pervasive with others, producing a variety of events, processes and their meaning, which then define a social perspective.

Political focus is turned more on the candidates and less on the political parties. How will the public perceive the candidates, largely depends on how they are represented in the media. Changes in media technologies were accompanied by changes in party activities. Instead of direct meetings with voters, politicians are determining to gain the prime time on prestige TV channels.

2. POLITICAL MARKETING

Campaigns are becoming more expensive, large funds are spent for buying minutes on TV channels, hiring experts and media professionals. This phenomenon is beginning to constitute a separate discipline, called political marketing. There is no doubt that people during the elections, make their choice based on the information they got from the media. But media content, however, isn’t received uncritically. Those contents go through many filters, the number of possible interpretations and meaning. Media contents, for example, have the potential to be read affirmatively and oppositional.

Medias are the most important interface between politicians, political parties and voters. The parties are trying to run campaigns, so they can match the topics that voters consider important. In accordance with theory to establish the agenda (agenda-setting theory), medias are not successful when it comes to tell people how to think, but are effective when need to tell them what to think (Bačević, 2004). They cannot impose certain public positions, but by focusing public attention on specific topics successfully directed reasoning audience.

The media is now understood as a complex institution that selects, events compare them gives then different level of importance, classify and gives them value and meaning. Thus, the media are not mere purveyors of reality, they are its performers. The meaning and significance of media discourse are deeply immersed the cultural and social referential frame (Milivojevic, 1992). During the election Media campaigns are faced with more demands - fair, balanced and impartial report, giving lots of space for representation - but at the same time provide voters with a critical and analytical look at what they have been offered from political leadership elite. The dominant influence of media content on the election choices of voters was already visible in the first multiparty elections in the beginning of nineties. Political and social context that emerged after one party system, has largely contributed media interference in the election process and that role became bias. In one party system, reporting is characterized by disregard for basic democratic rules, intolerance, and bias, lack of ethics and lack of opinion. This system has been more useful to political parties than voters, and journalists turned into passive messengers. Extensive media production did not allow voters to understand the differences between electoral participation and messages that they sent.

3. FAVORIZED PARTY

Media, especially public media, favored only one party, assigning that party a dominant role. Dictating media agenda from one center, offering topics that had no basis in reality and public speech full of stereotypes and discrimination, supported the authoritarian political system and undemocratic political culture. The system was designed to benefit the ruling party, and not the pluralism of opinions and ideas. Election laws require the same media treatment of all participants, the fair, balanced and impartial reporting and, in general, democratic public dialogue. Law is prohibited libel, defamation, contempt and abuse of office in the election campaign. However, the transformation of the media system in this direction is implemented neither easy nor fast as expected. It can be said that the media, like society, is still in the process of reform and transition to a modern and democratic principles.

4. MEDIA REGULATION

Because of the great persuasive and manipulative power of the media, media coverage of the elections is regulated by various regulatory and professional standards. "Media regulation, in one hand, should provide better education of voters, informing them about the campaign theme, the party deals with fundamental differences in what is the name of offering - how to make good choices about who will lead the country in the future, on the other hand, the same opportunities electoral participants to convince voters to their political advantage over its competitors" (Matic, 2003).

Regulations regarding to the press coverage of the election was not specific. There are valid general freedom and the limitations of those freedoms. Once there, the rules relating to elections apply only to state-owned newspapers. Basic "freedom" are valid for the press. Freedom of speech is planned national constitutions and international conventions (Universal Declaration of Human Rights, the International Covenant United Nations Convention on Civil and Political Rights, the European Convention on Human Rights, hereinafter ECHR). Freedom of the press is mostly under national laws on the press. Finally, the freedom to disseminate information, but includes and the right of citizens to be informed. Some countries have a law on information and access to Information.
These rights are not unlimited. All countries have laws that protect the rights of the individual and prohibit abuse of freedom of speech. These limits are usually related to defamation, invasion of privacy, racial discrimination, national security etc.. Appropriate provisions may be contained in the law on the press, special laws on libel and respect for private life or in other laws, such as, for example, the laws of criminal or civil law. International Convention, however, also include restrictions on freedom of speech. For example, the ECHR provides that freedom of expression

"... May be subject to certain formalities, conditions, restrictions or penalties as are prescribed by law and measures that are democratic society necessary for national security, territorial integrity or public safety, the protection order and the prevention of crime, protection health or morals, for the protection of the reputation or rights of others, for preventing the publication confidential information or maintaining the authority and impartiality of the judiciary. 

In practice, freedom of expression is often limited by the need to protect reputation and rights of others - especially the regulations on private interests, rights individual, written or oral defamation and privacy. It is undisputed that in modern democracies, electoral campaigns equated with a media campaign, and the voters in their choices, balance between governmental and media information. The media should maintain a careful balance of citizens interests and to provide fair and unbiased reporting to ensure that all participants in the electoral process can present their projects to the public. In addition to the basic role of the media, the media should also enable the public to assess the behavior of candidates in order to rationally opt for one of the available options. It is the duty of journalists in the pre-election period is to help voters navigate the labyrinth of election, without favoring any of the participants.

With respect to the regulation of the media in election campaigns, there appears to be no clear norm about what should be and should not be done:

- In the case of the specific measures that we have examined here, at least, countries seem to be split down the middle, more or less on half adopting such legislation and the other half not adopting it.
- The only exception is more apparent than real. Only a minority of countries explicitly establishes a ceiling on advertising expenditures but this is because some of them simply ban advertising while others regulate total expenditures rather than advertising as such.
- Not only do we find a great variety of approaches but it is seldom the case that more democratic countries go in a particular direction. On three aspects out of four there is just no correlation between the degree of democracy and the propensity to regulate the use of the media in election campaigns.
- The only exception and this is tellingly a case for which no legislation is usually required, concerns televised debates, which are more frequent in more democratic countries.

We have observed some regional variations in the use of these four measures but they have not proven to be huge. Region seems to be less important than colonial legacy. Former French and British colonies emerge as systematically less prone to regulate the media than other countries.

Republic Broadcasting Agency (RRA) was accompanied by electronic media during the campaign silence. Other media were out of control, because there was no Supervisory Board. Republican Election Commission (REC) can only react if a participant in the electoral process, violat electoral silence. The pre-election silence implies prohibition of election propaganda through the media and public meetings and publication of the election results to assess the polls closed. REC has not taken a firm position on the media, websites, and text messages that are sent to voters. The Commission can only react if someone challenge a breach of electoral silence. Public display of party symbols can be interpreted as a breach of electoral silence, although coverage of this meeting is not prohibited. In reporting can be given by one party, the speakers who are not members of political parties, but they must be given in its symbols - flags, emblems, banners and badges. During the election campaign, the Supervisory Board shall supervise the conduct of political parties, candidates and electronic media.

5. STATE BROADCASTING

Special influence, on the behavior of electronic media, was made by restrictive general binding of user behavior in the election campaign, provided by State Broadcasting Agency that required from the media "to ensure equality in information on all electoral lists and candidates on those lists." On the other hand, the media are expected to uniformly report on the supply of all the electoral lists, and on the other, the parties did their best to present their campaign activities as credible. None of the TV stations or Radios, beside all the available teams, could capture all the events in the campaign.

Industry Influence: IDAHO STATE BROADCASTERS ASSOCIATION by Year, Political Affiliation

Television stations solved the problem by broadcasting the video, which they have been submitted their own party. Representation of political rivals on television, depend not only from the schedule of activities in the campaign, but from the timeliness of the election headquarters updates.

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3 ECHR, Article 10.2.
6. ELECTION TIME

The parties have a decisive influence on the tone of the image due to the citizens. The only way it was possible to meet the requirement of giving equal publicity, to all participants for parties. Broadcasters, during the campaign, played a passive role of mediator between the party and the voters, relatively unbiased, but without any critical stance.

In the context of elections, the media news service is usually even better, is the foreground of attention, not least the question relation to sufficiently balanced, impartial, unbiased whether the electoral chances of the same political forces that fight for an appearance before the elections. Particularly conspicuous is the question of public service media in relation to both the Radio and Television role on both the public's expectations. The problem of media impartiality sensitivity indicates that the elections frequently appeared in public in views and opinions, before and during the campaign in one or other source.

“Media are the prime source of information we have about political candidates. How media portray candidates and political issues can elect or defeat leaders. Over history, new technologies have changed the way election campaigns are conducted and even how people vote. Researchers in the 1940s found that the factors affecting voter choice (in order of importance) were: party affiliation, social group allegiance, the candidate’s personality and consideration of the issues. Today, this order has been reversed. Social science research indicates that the candidate’s personality, their position on issues, party affiliation and group membership are now the deciding factors. Many scholars attribute this reversal to the influence of media that allow candidates to communicate directly with voters and of media reportage that concentrates on the candidates’ personalities over other issues.

Although it is not the only factor that influences voters, political advertising is also an important component of modern elections. Political advertising may sway voters in favor of one candidate or another. As of 1996, the average cost of winning an election was $3,765,000 for the Senate and $675,000 for the House of Representatives.

Candidates of all stripes spend increasingly significant portions of their campaign budgets on advertising, ranging from bumper stickers and billboards to print and television ads.

Table 1: contributions by political affiliation from 2004 to 2012

<table>
<thead>
<tr>
<th>Party</th>
<th>Records</th>
<th>Total</th>
<th>% of Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democrat</td>
<td>1</td>
<td>$500</td>
<td>7.94%</td>
</tr>
<tr>
<td>Republican</td>
<td>18</td>
<td>$5,800</td>
<td>92.06%</td>
</tr>
<tr>
<td>Nonpartisan</td>
<td>0</td>
<td>$0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Third Party</td>
<td>0</td>
<td>$0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ballot Measures</td>
<td>0</td>
<td>$0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Political advertising allows candidates and their supporters to provide information, make arguments and raise issues relevant to their candidate and the election. Political advertising may not influence people with strong opinions for or against a candidate, but it can be a deciding factor among undecided voters. In presidential races where less than 1% of the electorate can determine the outcome of elections, this influence can be significant. Political advertising may be even more significant in lower profile races, such as congressional or local elections, which garner far less mass media coverage.

4 “(The Teaching Educators about Media (TEAM) Project, housed in UT's Radio-TV-Film Department, designed these lesson plans and resources. Project Director: Laura Stein, Ph.D. http://utopia.utexas.edu/explore/team/)
The election game is due to a lesser extent, carried on between the political parties and their electoral programs, and much more from experts on marketing and advertising agencies hired by political parties. Among the political elite of Serbia prevailing belief is that the clever marketing campaign is not only necessary but also the most important condition for mobilizing and winning voters. The media, legislation and social reality in Serbia went into the hands of such an understanding. The promises offered by the party to the voters, were in fact campaign creators recommendations and perceived wishes of the target group, so far from the most important social problems facing Serbia.

The media in countries in transition, such as Serbia, finds media as an important element of democracy. Election time is a time when their role was evaluated in the context of democratization and respect for democratic procedures. Presented monitoring showed that the quality of the media depend to a greater degree than the very strict regulations that would oblige them to provide equal time to all parties, and in far less the degree of professionalism of journalists and editorial policy.

Due to restrictive regulation - that discourage the media to use the critical and analytical approach - the question is whether, in a given social political context, in a market characterized by fierce competition and are always possible political pressures, unrealistic to expect the media and journalists, a higher level of professionalism? The research conducted has shown that the media are no longer dealing with biased reporting and supporter typical of the nineties of the past century. But, subject to political and economic pressures, they are in the election campaign did not ask the right questions and create real problems, but they were mere intermediaries between voters and parties. They carried mainly partisan messages and promises to the public, without any critical questioning. Under the described circumstances, the media "agenda" established a party, not a journalist. In addition, the party created by the amount of exposure of a large number of leasing terms and paid promotional programs, which are edited independently of the media.

7. ELECTION CAMPAIGNS AND MEDIA EFFECTS

For most people living in established democracies and societies that are in transition to democracy, election campaigns are primarily experienced through the media. Politicians know that far more people turn to the media for information than turn out for political rallies in local town squares. The daily campaign activities are thus primarily designed to meet the constraints and deadlines of the major news outlets. Therefore, there are two important contexts to consider when thinking about the effects of the media in election campaigns. One is the context of the campaign or the potential media effect on the campaigns of candidates, which can be described as the institutional level of media effects. The other is the context of the potential media effect on individual voters or citizens, which can be described as media effects at the individual level.

8. INSTITUTIONAL CONTEXTS AND EFFECTS

The institutional effects of the media on the campaigns of candidates may vary depending on the type of electoral system, the rules and regulations governing campaign coverage, and other institutional characteristics of the political and media systems. In the United States, for example, where the race for the presidency begins a year prior to the election with candidates declaring their candidacy and then moves into the primary season when Republicans and Democrats vote in each state to select the ultimate nominees for the parties, the media play a very important role in shaping expectations and judging outcomes.

In the year leading up to the actual election, the media pass judgment on the viability of the candidates based on the indicators that the media decide are important.

One of the most important indicators has been the amount of money a campaign has raised, and another is the professional background of the candidate's campaign managers. These two factors have led to some candidates withdrawing from the race even before the primary season begins, so voters are never even given a chance to pass judgment on those particular candidates. In the 2000 race for the presidency, money raised was used as the major indicator of the viability of George W. Bush, and any challengers on the Republican side were considered to be marginal until the primary season began. The surprise victory of Senator John McCain in the 2000 New Hampshire Republican primary was all the more powerful because it exceeded expectations, and momentum provided by that win generated more than six million dollars in campaign donations via the Internet.

The Internet has made campaign donations much faster, and its use in campaigns may further fuel the momentum provided by unexpected outcomes. In other countries where money is not an important indicator of candidate viability because of different campaign finance rules, or where the professionalism of electioneering is a more recent phenomenon, there may be less opportunity for media to have an effect on the campaigns of parties and candidates.

The shaping of expectations is very important—sometimes more important than actual outcomes. In the New Hampshire primary in 1992, for example, Bill Clinton finished second after Paul Tsongas. That fact is difficult for most people to remember because the media coverage of that primary named Clinton the real winner because he did much better than expected. As this shows, one does not have to win a primary in order to be labeled the winner.

New media have abolished the traditional boundaries of national reserves, providing a communication platform for global debate and dialogue. Their power lies in selecting high and processing of media content, and time selection space that will be present in the public sphere, the method of presentation, personal choice, style of
representation and communication, discourse and culture of public performance, effectiveness that will remain in the memory of the audience. Society is at the crossroads of centuries and millennia bomb-ed series media. Political spectacles are specific forms of symbolic representation of life experiences. This means that in addition to informative intentions in communicating messages have expressed an aesthetic dimension to target at an emotional layers awareness of recipients.

Media coverage, of course, is not determined by journalists alone. It is a product of the efforts of politicians and their advisors, the so-called spin doctors who talk with journalists. To what extent do politicians have control over the news agenda? A comparative study of news coverage of elections in Great Britain and the United States in the 1980s and how it was produced showed that British politicians had considerably more opportunity to influence television news coverage than U.S.

Politicians did and that U.S. television journalists exerted considerably more discretion in shaping the news agenda than their British counterparts did. Holli Semetko, J. Blumler, Michael Gurevitch, and David Weaver (1991) provided evidence for this conclusion with a variety of content analysis indicators. These indicators included the following:

- the amount of space used in the main evening news program for coverage of election news (more in Great Britain than the United States),
- the amount of news devoted to politicians' "sound bites" (considerably more in Great Britain),
- extent to which the main topics of news stories were initiated by politicians or journalists (more party-initiated news in Great Britain, more media-initiated news in the United States),
- the proportion of political stories in which politicians or parties were the main focus (greater in Great Britain than the United States), and
- extent to which reporters offered evaluations of political participants (more in the United States than in Britain).

Whereas British reporters were more likely to offer only descriptive comments on politicians' activities on the campaign trail, U.S.

Reporters were more likely to evaluate candidate performance. The only instance in which politicians in both countries were on equal footing in terms of their ability to influence the news agenda was in the domain of visuals. Politicians in both countries initiated the majority of key visuals in election news stories, and the vast majority of these visuals were favorable. In the United States, however, positive visuals were far more likely to have been accompanied by critical voiceover commentary by reporters; in Great Britain reporters were more likely to describe the scene in a neutral way. A look at television coverage of elections in the two countries in the 1990s suggests that while British reporting may be moving in the direction of the U.S. coverage, there is still some gap between the two.

Other institutional contexts of importance include the balance between public and commercial (private) broadcasting, the political autonomy of broadcasting from government and political parties, the rules and traditions that surround party access to broadcasting, and the extent of partisanship in the printed press. In theory, television (whether the channel is public or private) is expected to provide impartial coverage of politics, and this is deemed to be of particular importance at election time.

Public information are transferred, exchanged and suppressed, and they can shape the public sphere, constructing a dynamic political and media by selective mechanisms power.

Social problems are constructed stifling conflicts of interest among different ideological centers or masking other problems of the state. Media exposing them to mobilize public action, implying possible solutions and to create opportunities for communication maneuver. The aim is that the individual rob opinions, leaving the authority to create and offer views solutions Policies and ideas of all more are in the context of the strategy of the dominant elites in order to obtain electoral power, and the public is naive object only as an important voice that inserts Slip. Democracy is becoming increasingly vulnerable because under the influence of global media pictures less critical audience considers the world around them, not realizing that the subject artificially imposed prejudices, stereotypes, negligence, and even manipulation. Hence the presidential teleshopping products as candidates, election campaigns as slick Hollywood Movies, and political capital as a result of applying the methods of corporate communication.

While public opinion and paintings deals with imposed solutions behind the scenes political leaders solve problems of vital concern relieved the pressure the wider community. Public attention strengthens or weakens, the media constructing asymmetric problems, shading and events focusing on different aspects.

The big problem can be relativized as small, and vice versa! Political leaders and stakeholders and interest is politicizing issues, not hesitating even create pseudo achieve dramatization. Pumping problems, the dosage of reality shock and spinning techniques are just small part of the rich instrumentation that managed mass audience. After some time, when the audience Related products saturate imposed a new, more spectacular, more seductive, unusual, and so on. One problem replaced by another, pushes a new image, a daily requirement for news to satisfy the information blizzard. Crisis and resolve problems and make people, including the political system can be viewed as scene created by the will of the invisible rulers. Each message transmitted mass media is part of the symbolic presentation of reality, a world of complex characters, icons and images communicability function is realized without a spectacle that would have political power.

The mass media as time dragged into a vortex of information dependency primarily from the state or
government ministries and departments and numerous agencies Public Relations. Of course, government institutions hide their influences, but in rare moments, citizens find the way to find out on what is money wasted. The media represent public using different technologies and ideologies, putting the interests of the real correction their masters. The myth of journalistic independence and freedom only ideal that a free society should strive for as a public communications strongly influences social processes, forming the current roles, rules and norms. Shadowy is redesign concepts of international law, ethics, justice, nation, gender, human rights and freedoms, and in their place come new concepts, enough broad to justify their existence.

World democracy shape the media, but it is wrong to think that the only power in their hands. Communication hurricane trying to make media market modeled on the capital market, controlled by the owners who decide what is good and what is evil? The number of media does not mean that it is adequate and that they represent the plurality of opinion.

9. CANDIDATES AND THE MEDIA

It is not entirely fair to blame news organizations for issue avoidance. Office seekers themselves are often all too eager to duck controversies and show off their personalities and images instead. Many of them, along with members of the press corps, do not believe that voters are knowledgeable or interested enough to care about specific policy questions. Candidates do much better, they tell each other, to speak in easily understood symbols than to deal with the complexities of the economy. They also obscure their positions on contentious issues because of their fear of alienating potential voters. Whatever the reason, Richard Joslyn, a political scientist and student of the media, found, after carefully analyzing hundreds of spot advertisements, that relatively few ads disclose candidates' stands on issues. In fact, many candidates and their staffs believe that the media should be used mainly to promote and advertise campaigns, not to inform or educate the electorate. If any law of politics is true, it is surely that unmanaged news is the politician's worst enemy. Campaign strategists work with three principles in mind: First, because they know that people lean heavily on television to learn about candidates, television exposure outranks substance in importance. Second, due to space and time constraints, television news shows "stories" that can be told in one or two minutes and that depict people doing something visually exciting. Finally, newscasters hate "talking heads"—speakers droning on and on about some complex issue. What they want, instead, are short, pithy statements—sound bites, professionals call them—that can be aired in 30 to 45 seconds. An example: While criticizing his opponent's allegedly soft stand on defense, Bush told audiences, "I wouldn't be surprised if [Dukakis] thought that a naval exercise is something you find in Jane Fonda's workbook."

Short and to the point, the remark could easily be squeezed into any broadcast, however brief.

Integrating this knowledge into their campaign strategies, office seekers attempt to manipulate press coverage for their own purposes. What is surprising is how successful they are. By carefully staging the location, timing, and context of their appearances, presidential candidates can virtually dictate how they will be reported on the six o'clock news. Former President Reagan was the master of this art, but his successors quickly caught on. Perhaps Bush's most brilliant effort to maneuver the media to his advantage came early in the 1988 campaign. In what CBS admitted was a "floating political theater," the vice president sailed around Boston Harbor, the very heart of Dukakis's turf, pointing out to hordes of reporters, camera operators, and photographers all the trash and slime in the malodorous water. Then the sound bite: "My opponent's solution—delay, fight, anything but clean up. Well, I don't call that leadership, and I certainly don't even call it competence."

As Bush's advisers confidently predicted, the three networks dutifully aired the event on their evening news broadcasts; only one, ABC, tried to explain the extremely complicated history of the mess in the harbor and that Dukakis might not be totally to blame for it.

Although Bush's advisers may have been superstars in this game, they are certainly not its only players. Pseudo-events—staged visits to nursing homes, polluted beaches, orphanages, slums, drug rehabilitation centers, factory gates, and toxic waste dumps—are the lifeblood of electoral politics. They are popular with candidates precisely because everything is supposedly under their control; the "image" is not disturbed by placard-waving protestors or tricky questions from hostile reporters. This is how the game is played, and the press knows it.

Given this knowledge, however, one wonders why the news media go along. Speaking of President Reagan's ability to stage campaign events to suit his needs, Tom Brokaw of NBC said, "He's the best I've ever seen." David Brinkley conceded, "He certainly tries to use us, because he is so good at it—and he knows it. But we know it." Despite this awareness, the networks generally report campaigns as the professionals want them reported. In an article entitled "How Television Failed the American Voter," David Halberstam summed up the media's acquiescence:

If they covered professional football...in the same way it would go something like this: During the season they would not cover any games live but would instead give

5 Richard Joslyn, "The content of Political Spot, Journalism Quarterly, 57
6 Quoted in Jack W. Germond and Jules Witcover, Whose Broad Stripes and Bright Stars?
7 Quoted in ibid., p. 404
75-second reports on the previous day's game. This would continue right through to the Super Bowl. Nor would they deign to cover the Super Bowl itself. After the game, however, they would cover--live and in color--the three-hour champagne celebration in the winner's locker room.9

10. MEDIA IN ELECTION CAMPAIGNS

Political parties and candidates tend to find the media, and in particular television, more and more important for campaigning and seek to appear as much as possible on the television. Television is widely regarded as the most important instrument for campaigning and communication to the voters in countries with widespread coverage and audience.

If there is to be some regulation of what the media may or may not do during an election, then logically this is likely to apply to a specified campaign period. There is usually a period of official campaigning during which the regulations will apply, while otherwise normal practice will prevail.

The official campaign period is a period just before an election. Nevertheless, campaigning for public office usually takes place for a longer period of time than the "official" campaign period specified in the electoral calendar. In some countries, there are also regulations specifying a period of "campaign silence", a time frame or a certain number of days immediately before the elections during which no campaigning at all is permitted and there are strict limitations on what the media may write or broadcast.

In established democracies, broadcast journalists whose medium is often mandated to provide impartial reporting of politics at election time are confronted with the problem of balance when reporting election campaigns.9 Balance is problematic to define yet remains an assumption behind allegations of political bias in the news at election time. If the principle of balance in reporting on contending parties and candidates is strictly adhered to, then it conflicts with the journalistic principle of objectivity which drives story selection. News values provide objective criteria by which editors determine what stories end up in the news. If television news is responsible for presenting a range of political voices at election time, then normal news values will need to be suspended to some extent in order to accomplish these objectives. Research on television news has shown that the principle of balance, while applied during election campaigns in a number of established democracies, has been operationalized quite differently.

Some of the earliest research on media and elections in the U.S. stemmed from a concern about media bias having an impact on electoral outcomes, as it had in Nazi Germany. Paul Lazarsfeld and his colleagues compared radio and press reporting on the presidential candidates in the 1940 U.S. election, and found that Roosevelt had a visibility advantage in the news by a margin of 3:2 in quantitative terms, but the tone of the news actually favored Wilkie by a margin of 2:1, illustrating the independence of measures of degree and of direction of attention, as noted above.10 This early research illustrates two important dimensions to assessing balance in the news, visibility and valence or tone.

An example of what can emerge from conducting systematic content analysis at each election campaign with respect to visibility and valence of parties and issues in the news is in Figure 1 which is taken from my research in the U.K. with Margaret Scammell on television news on the main evening flagship news programs on BBC and ITV over a number of general elections.11 These programs traditionally reach the largest number of viewers, and undecided viewers, of any outlet during a general election campaign. Figure below displays three graphs on how the visibility and tone of the news developed from one election to the next, taking BBC and ITV together, for the three main political parties, in 1992, 1997 and 2001.

From the figure, it is obvious that coverage on the main evening news of the three main political parties has moved from more unfavorable to more favorable over time. And party access to the public via the news, as measured by the total amount of time given to party spokespersons via soundbites in the main evening news, has declined considerably over time as indicated by the size of the bubbles. This is just one slice of a study that enables us to say more about the window for political news during British general election campaigns, how it has developed over time, balance in election news among the main political parties, and what is displacing political news on main evening television news programs. The charts in Figure show these developments in relation to the opportunities accorded to political parties to get their message across in their own words in the news.

Looking at these main evening flagship news programs as a whole, this research on British general elections shows that over time there is a declining percentage of stories devoted to political news. The decline in political news is accompanied by a growth of non-political stories that...
are increasing over time. Within the shrinking window for political news, it is also evident that journalists are deciding to include more non-party sources in political stories rather than main party spokespersons. These developments speak to the changes over time in journalistic culture and, in this case, these changes appear to be occurring simultaneously on both BBC and ITN, the public service broadcaster and its main competitor.

It must be remembered that the backdrop against which these changes are occurring is one in which many additional information sources have emerged on television and on the internet, but those newer outlets may be more likely to reach citizens with strong political opinions or preexisting political interests. Although this paper is not designed to attempt a systematic study of election news reporting in the four country case studies that follow, attention will be given to the kinds of data that are available in each country, conclusions to be drawn from those data, and potential for future comparative research.

Britain also has a large community of scholars who study elections and work with both the British Election Study data and the publicly available data from polling firms and content firms that capture the public mood and the media coverage during elections. Media coverage of elections is also a highly visible story itself in the media during campaigns. There is in fact no lack of interest on the part of pundits, citizens, and scholars in the day-to-day events of British general election campaigns and what they might mean for the election outcome. The fact that content data is available over a period of decades indicates that it is possible to look at the characteristics of political reporting and how it has changed over time, and assess whether these changes are emerging primarily from enhanced technology, party professionalism or some measure of both in addition to other influences. In a cross-national comparative context, the Britain’s first-past-post electoral system may indeed be the basis for expecting more similarities among those countries with similar electoral systems.

Television news about the election campaign on BBC and ITN flagship evening news programs moved from more negative and more voluminous to more positive and less voluminous over the course of three consecutive general elections, 1992, 1997, 2001.

11. ROLE OF MEDIA IN ELECTIONS CAMPAIGN

The media has a role to inform the citizens about the competing political parties and their programs and candidates, and to contribute to the formation of opinion of the electorate. This may include formal voter education material provided by the electoral management body; alternatively or additionally, the media themselves may produce their own voter education materials.

The overall aim of media coverage during elections campaigns in democracies is fair and objective reporting and information dissemination. This can, for instance, be achieved through measures such as a just allocation of broadcasting time between all the competing parties and candidates, (voluntary) agreements on fair news programs, reports, and non-news programs, or debates between party leaders. It is crucial in the first instance to ensure that every party and/or independent candidate has access to the media, in particular radio and / or television, since most voters gain their knowledge about politics via the media. That means that a broadcaster is not entitled to influence the public opinion by different treatment of one or another candidate or party. But still it is often the broadcaster who decides who is gaining access to the debates and discussion programs.
Media is sometimes manipulated by the governing party (especially if the media is state-owned) to report in their favor. Manipulation can take place during the designing of the programs, reports and news, discussion programs, and even non-news programs, such as pure entertainment shows and movies. Propaganda may be disseminated under the guise of objective public information by the government. The danger of misuse of government power for campaigning purposes can be limited if laws and regulations are in place to regulate the role of the media in the elections campaign.

The modern mass media are thought by some to have an immense effect on modern government and politics, but the nature of these effects are controversial. Some claim that their effects on democracy are malign and have coined the term 'videomalaise' to encapsulate the argument. [1] It is claimed that market competition and the search for bigger audiences and circulation figures force the media to dwell on dramatic news, especially bad news about crime and conflict, death and disaster, political incompetence and corruption, sex and scandal, anything else that is sensational. [2] If there is little conflict, the media will exaggerate what exists, or try to create it. [3] 'Attack journalism', said to be more common, undermines politicians and political institutions, [4] and encourages politicians to campaign negatively by attacking their opponents, not stating their own case. [5] This combination of bad news, attack journalism and negative politics tends to create a pervasive sense of cynicism, distrust and suspicion of modern politics and politicians. 

Laws and Regulations concerning the media in elections campaign may define:

- If parties and candidates are allowed free political advertisement
- How time or space will be allocated to candidates and political parties
- Whether paid political advertising is to be permitted
- If election expenditures that affect advertising campaigns are limited
- Whether time and content of electoral broadcasts is to be restricted
- What duty the media has to carry voter education material (Link to Regulation of Content of Direct Access Material)
- Whether there is to be a right of reply to factual misrepresentation in the media
- If opinion poll findings are to be published.
- What the regulations should be about policies on "hate speech" and defamation.

The public media are thought to have a special duty to publish or broadcast more often statements of the parties and candidates they prefer.

**12. 'CORPORATE IDENTITY'**

A successful election campaign consists in large part of successful advertising. With it goes the whole show, especially a unique visual identity of the parties, in order to achieve the effect of recognition.

Mainly are used sentences and slogans with which people can identify themselves as the party and its core competencies.

Unique advertising thread is easy to follow in the posters, brochures and advertising, party materials and marketing materials on the candidates and the Internet page.

The use of a common identity at the polls it is important from the following reasons:

- Unique painting party in the state who provides her greater presence.
- Belonging to the uniformity and that way the impressively documented.

The visual identity of a party, may be, for example, consist of the following:

- logo
- font
- paints

Logo provides a unique appearance and is flexible enough to support creativity and local specificities. Participants in the campaign for local elections using his identity party which has been successfully introduced in the campaign at the national level. Current identity is on the website and available to party members.

**13. NEW DEMOCRACIES**

The new democracies of Central and Eastern Europe in relation to democratic consolidation, social transition is a key question to the voters what extent and under what conditions, and what considerations apply along the support of the functioning of democratic institutions, and basically developed the system on itself. To the number of citizens in the process of political experience significantly tied to the media can be obtained through knowledge, information.

The media is also of vital importance to both directly and indirectly part of the consolidation process, the sequence of transformations, mainly because it is a very strong theme of power. This subjects fast expanding potential, finds its strengths in one or another political or economic interests of the elite group of state or around the opposite orientation.

In so called new democracies, voters lack a functioning political system of direct, personal experience, and only a relatively short period of experience can shape their views. In these circumstances, the dominant negative approach to the media, the scandals, tensions, conflicts of interest, are highlighting the “quasi” dominance of the political life of public distrust and alienation helps.
As a part of this new democracy, the situation must be considered from both sides. The main question remains: does mass media “democratize” the flow of political information, social and educational path for all regardless of status broadcast them. The new democracies, the media will undoubtedly apply a kind of educational role, but the question here is that how its content is negative communication that role. The optimistic approach is to select the most unfavorable news and critical view of political actors rather seems to suggest that it is one that the functioning of democratic institutions emphasizes the functional, rather than emphasize its flaws.

14. POLITICAL CAMPAIGNE ONLINE

There is an increasing use of social networks for political campaigns and its promotion. Based on a study conducted by Politics on Social Networking Sites, a new study from the Pew Internet and American Life Project, result is extremely interesting. Democrats are more likely than Republicans and Independents to say that social networking sites are important. They also claim that become more active politically because of their interactions on social media sites.

Overall, 74 percent of those who call themselves liberal are using social networking sites, compared to 70 percent of moderates and only 60 percent of conservatives. And those social media-using Democrats are more likely than Republicans and Independents to say that social sites are important for things like debating political issues and recruiting others to get involved in political matters. Almost half of liberals surveyed said social media is important for keeping up with political news, compared to about a third of moderates and conservatives.11

The fact that 16 percent of social media users changed their political views is not to underestimate, photos, videos, promotional material which are shared on Facebook have high impact on someone’s opinion.

A portion of social networking site users say the sites are important for some of their political activities and the way they decide how to engage with campaigns and issues. At the same time, most users of the sites say they do not use the sites for political purposes or debates.

A nationally representative phone survey by the Pew Research Center’s Internet & American Life Project finds that:

- 36% of social networking site (SNS) users say the sites are “very important” or “somewhat important” to them in keeping up with political news.
- 26% of SNS users say the sites are “very important” or “somewhat important” to them in recruiting people to get involved in political issues that matter to them.
- 25% of SNS users say the sites are “very important” or “somewhat important” to them for debating or discussing political issues with others.
- 25% of SNS users say the sites are “very important” or “somewhat important” to them in finding other people who share their views about important political issues. The political conversation on Twitter is in full swing with nearly two million Tweets sent about the presidential candidates every week. That’s a significant increase in political Tweets since the last presidential election. In fact, the total number of Tweets sent on Election Day 2008 represent only about six minutes worth of Tweets today.

11 http://pewinternet.org/Reports/2012/Politics-on-SNS.aspx
15. DEBATE

Debates have advantages and disadvantages, but, on balance, positive. As far as their negative side, it can be argued that mandatory limit debate freedom to run the campaign the way they want, that is not always possible to bring the leaders of all parties to participate in the debate. On a positive side, debates allow candidates to directly address the public. This increases the interest of citizens for the elections, as well as their level of awareness, public can directly compare the candidates and, as such, it is useful complement. To ensure the fairness of organized debates, decisions are needed related to their form, participants, duration, and their number.

There should be rule for the number of participants, it is clear that if all candidates are invited to participate in the elections, in most countries will create chaos and will confuse viewers instead of informing them. Especially in the countries of Central and Eastern Europe and the former Soviet Union was a show which involved to many speakers (30 or 40). Viewers were confused and could not remember who said what.

Therefore, when the number of potential participants in the debate is so large and escapes from control and when there is a real risk of confusion or misunderstanding, it should be resort to some kind of selection principle. It can be implemented on the basis of previous elections, the results of a candidate, the number of signatures and reliable results.

Generally speaking, this principle leads to a balanced coverage of the election - essentially equal reporting on key candidates and parties, and recognizing that that the marginal candidates can not claim parity. When there are 25 parties participate in elections, usually allocates four or five.

It often happens that it is not possible to gather all participants at the same time because of the problem of "favorites". The candidate who leads in polls refuses to participate in the debate, since it cannot account more to lose than to gain.

Mandatory participation in the debate is not really viable option - the politicians have the right to campaign the way they want. It seems that therefore, the best option is to organize a debate, even if some candidates refuse to participate in it. Whatever ensuing, those who have reason to Favorites fear that their refusal could be turned against them.

16. MEDIA IN ELECTION CAMPAIGN IN SERBIA

The report of Limited the OSCE mission said that the Republic Electoral Commission done work professionally, and that the government and the Assembly, contrary to the request of the REC and the Law on the Election of Deputies, they formed a supervisory board to monitor the behavior of the media, political parties and other participants in the electoral process during the campaign. The OSCE also noted that the campaign themes have not changed. Kosovo issue and relations with the European Union remained the subject of controversy DS and DSS, the radicals have continued to seek the suspension of the extradition of Serbian citizens to the Hague tribunal, Tomislav Nikolic has stepped up calls for the formation of a post-election coalition with DSS, as he says, in defense of national interests. Leading politicians during the campaign continued with personal accusations, using the sharpest tongue, and the reaction of the public and the media is missing.

"Analyzing the media, the OSCE said that the first channel RTS has 37 percent of the time devoted to coverage of the election campaign, the coalition led by the list of DS, 24 percent of the list of DSS-NS, 15 percent of SRS, 13 percent of the LDP and 11 percent list SPS-PUPS-JS. As far as private TV stations, the OSCE as an example the B92, which is, as they say, devoted 39 percent of their coverage of the election campaign DS, 29 percent of the DSS-NS, 13 percent of SPS-PUPS-JS, 12 percent of the SRS and seven percent of the LDP. TV Pink has devoted 47 percent of reporting DS, 32 percent of the DSS-NS, eight percent of SPS-PUPS-JS, seven LDP-six percent of the radicals. Print media is separated only Kurir, which was said to be 49 percent coverage devoted to the DS in a negative tone, while the overall tone of the media coverage of the monitored remained largely neutral."

Monitoring the media, which was taken by the Media Center and NUNS during the early parliamentary elections in May 2008 year, aim was to show the way to represent the electoral lists and candidates, as well as equality in access to the media. Specifically, conducted qualitative and quantitative content analysis was to demonstrate the main features of the pre-election reporting, compliance with journalistic standards, the quality of information available to citizens, trends in election reporting and the role of the media in election campaign cycle. The research team followed the last week of the campaign, and the observed sample included all television stations with national coverage (within 18 to 24 hours), as well as eight daily newspapers, different per profile and editorial policy.

12 Taken from Tanjug
Surveys of all television and radio stations with national frequency and eight daily newspapers show that: television were influenced by commercial and promotional programs of the political parties, there has been little analytical program, this was a negative campaign, the media transmit offensive and tactless attacks for electoral participation, the general tone of the news program neutral, but very presence of the ruling party in their state functions.

17. POLITICAL PARTIES IN SERBIA

At the consultation the Belgrade Media Centre, organized by USAID, IREX and OSCE, discussion participants noted that the main changes compared to the previous 2011 election campaign that the media are faced with an economic crisis often forced into servitude to ensure its financial survival. Media are easier pickings because of the crisis centers of power and influence, but also believes that the media, which are financed from the budget - "did not work" - are also forced to work "as they were told." Monitoring of six domestic television (RTS, Pink, TV B92, first, Broadcasting and Studio B) showed the dominance of negative campaigns, and prominent journalists inertia of self-censorship. "The behavior of journalists have confirmed once again that the evaluation profession is frightened, without power and reputation, and that the inertia of self-censorship by journalists expression of existing and future preventive censorship by government" (Radojkovic, 2012)

Print media during the election campaign did not address "big issues", such as economics, economy, European integration, Kosovo and pension funds, and even then, when they were mentioned by some politicians themselves, are not coming out of the frame political propaganda.

The main theme of the print media were mathematics and a post-election potential coalition parties. In the period from April to May, and dailies Blic Press were extremely biased and much more space devoted Democratic party than the other participants in the elections. "As positive example, the newspaper today, which is on "election" site presented the program of each party, their election budget, number of members and the number of seats in the previous Parliament.

The tabloid Kurir "said humor" because, during the pre-election silence, the news of the opening of a roads, but the faces of politicians were present blackened.

As an example of "unacceptable journalism," the question was how to win a DS votes in the election.
"It should be in journalism schools mentioned as an example for something that is unacceptable, and as a simple matter, let alone the campaign put such a question to one of the highest Officials of the ruling party, " (Skrozza, 2012)

The media today looks very different than eighteen years ago when it introduced a multi-party system. Then there was no Internet, television stations were rare, there was no cable system, there were no public opinion polls conducted, and there was no way to communicate with voters. Political parties gave the task to their talented members to organize the campaign, and they undertook the actions as they thought they should.

Pre-election slogans of political parties in the 2007 election.

PARTIES slogan

- VP: Some new tulips. Vojvodina, go ahead!
- The only real power of Vojvodina is without a boss in Belgrade.
- G17 +: Expertise before politics! Serbia has to go forward faster!
- DZS: You know everything - you have a choice!
- DS: For a better life! Because life can not wait!
- DSS-NS: Long live Serbia! Serbia above all divisions! The people know best!
- KAPD: for a better life of Albanians in the Presevo Valley!
- LDP-GSS-SDU-LSV: It depends on us!
- LZS: Sandžak in European Serbia! We win, everybody wins!
- PUPS-SDP: experience and energy! We will not let down our heritage!
- PSS: Serbia has strength!
- RS: Knowledge is power!
- SVM New Chance: (Uj Eselli).

Different and equal on the European road.

- SD: For order, work and responsibility! It's not too late! It's not impossible!
- SPS: Decisive for Serbia! Serbia, keep your chin up!
- SRS: 50% + your voice. Let’s make it better today! Time for a change!
- Stop corruption, stop crime!
- SPO: It’s worth the fight!
- UR: Humanity is man’s greatest achievement.

Looking at the main slogans of the party, you can see that the emphasis shifts to everyday life, to basic family and social issues. The greater the promise, the lesser is the credibility. Man can hope, but preference is given to reality. One gets the impression that citizens are fed up with the various election promises and that they have become more rational, objectively perceiving political situation, so it is possible that those who share unreasonable promises end up having bad results at the elections. Smaller parties are promising a lot, but becomes a bit slow and the major parties have been deceived. The public believes that political parties can do much more than they do.

14 Vice president of the Independent Journalists Association of Serbia Dragan Janjic.
Voters are more likely to believe in real promises, over the three dinars bread, because experience taught them so. Just before the elections there was a lot of research done by various agencies about voter sentiment. Published through the media almost every day, the results were dramatically different, and thus the public was often entertained by that.

December 2006 TV Pink’s National news broadcasted public opinion polls from Barometer agency:

- SRS would be supported up to 34% of the parliamentary election, 24.30% DS, DPS 15.70% of voters.
- The Parliament assembly would be a coalition led by the Liberal Democratic Party with 6.40% and Power of Serbia Movement, which supports 5.30% of the voters.
- The limit of 5% threshold to enter parliament is met by the G17 and the SPS.
- Research shows that 39.60% of the voters will surely vote, and
- 34.70% of them will not surely vote.
- Respondents evaluated the work of the Government of Serbia and have graded them with a one to five grade system.

The highest average rating of 3.60%, the government received for the cooperation with the ICTY, while the lowest evaluation of 1.30% was received for the economic situation. This study was conducted from the first to fifteenth of December, as a field survey in the territory of Serbia without Kosovo, on a number of 1,200 respondents.

CESID had assessed on the basis of how people felt at a certain point of the campaign. To know how many will eventually actually go to the polls, public opinion researchers would have to predict other people behaviour. And that's not possible. It all depends on whether people will be willing to invest in their lives about ten minutes. CESID’s assessment at the beginning of January was that more than a million people are undecided, and that 3.15 million people know who to vote for. Others are still thinking about the possibility of going to the elections. It was expected that the turnout will be above 50%.

CESID believed that the results of public opinion polls influence the voters, so they didn’t want to go public with the estimates of the current rating of political parties just a few days before the elections. The election results, according to the research, were very uncertain about which party will enter the convention, and in which order the parties the parties will enter. “Each vote will be very important” – they were saying, so that's another argument in favour of voting power. CESID has had 5,000 of its respondents.

Research shows that 39.60% of the voters will surely vote, and
- 34.70% of them will not surely vote.
- Respondents evaluated the work of the Government of Serbia and have graded them with a one to five grade system.

The printed media “Danas” on 18th January 2007., by Danica Vučenić. The caller was Marko Blagojevic, program director of CESID.

Report on the work of the media during the election campaign

In early January, the Independent Association of Journalists of Serbia (NUNS) reported that the Media Center to monitor electronic media coverage of the election campaign and the activities of political parties before the parliamentary elections on 21st of January 2007. Media analysts from NUNS and Media Center will follow the lead news and political shows of three most watched TV channels: RTS1, TV Pink and B92, as well as three national radio stations: Radio Belgrade, Radio B92, and Radio Focus. The main subject for round table held on 6 February was the presentation of research: behavior and the role of the media in the election campaign. They talked about the lack of analytical journalism, lack of professionalism in media and parties, hiding of the price list for paid events. Snezana Milivojevic, from the Faculty of Political Sciences, said that the media gave lots of their own space to the political parties, and it is therefore necessary to improve the quality of the media, and reduce political influence.

The study lasted one month in order to quantitatively show coverage, positioning and frequency of parties and high-ranking officials in the media. Subject to monitoring were all primetime shows in prime time on the six broadcast media. Jovanka Matic, researcher at the Institute of Social Sciences, spoke on several issues reported: the contentious spirit of the campaign regulation, control of media behavior, media presentations of government functions, the absence of analytical journalism, and equal distribution of time on RTS.

The media are an integral part of the election and the fair conduct of the media is inseparable component of a fair election. However, the National Assembly in the 2007 did not appoint the Supervisory Board, the body authorized by law to monitor media coverage during the campaign and during the election silence. Republic Broadcasting Agency (RRA) monitored the broadcast media in the election campaign, but the print media remained outside the scope of this control. It is therefore not possible to determine whether the media, particularly print, treated equally all participants in the election. Although the law provides penalties for breaking the rules on equal treatment of participants, those sanctions can not be applied consistently to all potential violators.

The parties are investing a lot in the campaign for the participation in the National assembly, as reflected in the media, numerous billboards, posters, videos, and pamphlets. Parties do not spare any money, or energy. The printed media “Danas” on 18th January 2007., published a study on how much will the expensive and lavish campaign have an impact on voters and their political orientation in elections on the 21 January 2007? The poll was conducted by telephone and field testing and monitoring campaigns through electronic and print media. The author is a political analyst from Ljubljana Rudi Meršak, the associate of Public Relations LEX. Results
show that the election campaign will not have impact on
the nearly two-thirds of voters:
• 33.50% of the voter is certain that the campaign will not
affect their opinion;
• 21.50% of voters say that the campaign probably won’t
affect them;
• 17.20% of the voters does not have an opinion about the
campaign;
• 19.30% of voters think that the campaign is likely to
affect them;
• 8.50% of the voters is certain that the campaign will
affect their choice.

It is suspected that some agencies and parties manipulate
the results to win voters. This opinion causes the
difference in research results which then comes out of the
domain of error. This prompted the RRA to prohibit
publication of results of research of this type by the
Broadcasting national television without specifying the
agency, the client and the sample on which the test was
done. The press, however, is not subject to the ban, so it
happens, as in the examples presented Scan and Medium
Gallup agency, that the results published in the
newspapers are very different. Researchers defence from
the doubts that the results fitted in order to improve the
ratings of the parties is to overestimate the impact of
research. Agencies say that they can not influence the
voters’ choice to the extent that presented in the public.
These are often the raw data leaked to the public and are
used for manipulation. For these reasons, researchers
from CESID never say that a party has four or six percent,
but that it is close to the threshold.

18. CONCLUSION
The bias of the state media and broadcast spots refusal of
some opposition parties was often the case of nineties.
Making its educational function, the media openly favor a
particular party (government - the governing, private -
parties that are friendly) since the introduction of
multiparty. The media have imposed a certain value (the
ruling party state-building, the opposition parties are the
usual culprits). Manipulation of public opinion is reflected
in the strategy of creating a distorted reality. Rather than
present reality, the media is constructed. In these
conditions, it is necessary to open, but also strengthen the
already existing, so-called independent media over whom
the governing party have full control. Political parties are
in a constant struggle for power and they forgot that the
development of a society is based on cooperation and
consensus, although the mean differences of opinion.
Among the political parties is more antagonism than
cooperation.

The study of electoral matters, the electoral system, the
regularity of elections, relations between the political
forces, the development of the party system, as well as
socio-economic and social context, is an important
indicator of the quality and direction of social change in a
country. The media are the guardians of the public, so
they need not determine on and behave unprofessionally.
They often use the campaign just to sell more terms for
propaganda. The main function of the media is to inform
the public and because they are an important factor in any
campaign. Seduction and manipulation by the public
opinion is conducted by reporting occurrences, people and
events. Informed voters a basic prerequisite for the
functioning of democracy, and the regular news programs
precondition of political communication. The simplest
type of manipulation is a selection of information,
suppression, agenda setting.

Many believe that the participants in the race have equal
treatment and open advertising space in electronic media.
Print media, however, aligned to individual parties and
thus participated in the dissemination of hate speech.
Some newspapers acted like tabloids that publish
disinformation to achieve better rate parties. "The
importance of the media in the electoral process has long
been recognized, and this time not even the biggest parties
and their campaign headquarters spared neither money
nor effort. The media are, for the most part, followed,

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without critical deflection, using ready-made party material. Thanks to them, the campaign was long and exhausting, but never boring. Even when you are avoiding to face the problems of society and citizens offers a genuine political choice, party activists were full of negative words on their opponents, and the tabloids are always open for them to offer a space for yourself or encourage them always new scandal”.

There is a cyclical relationship between the media, the government and the public and while the media can occasionally shape public opinion, it has a greater influence in communicating to voters what issues are important and less of an influence in convincing them what to think about those issues. The media works more effectively by placing a spotlight on certain issues they feel the public should be concerned with.

LITERATURE


15 Affairs, marketing and public rented terms - Conduct media campaign for the parliamentary elections in 2008. year - Snjezana Milivojevic, Bojan Klačar Ana Nikolic. affair
Project Management in Digital Economy

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Abstract: Conducting business in the digital economy means using software tools in order to enhance an organization’s operations. Today, more and more organizations conduct their business activities through projects. The intensity of changes both in the company and in the business environment leads to increased scope and complexity of projects. Effective and efficient management of such projects is difficult, even impossible, without the support of software tools for project management.

This paper presents a research, which was conducted in Serbia in 2011 with the aim to determine whether the software tools for project management are being used, and if they are, which are the most frequently used. It was found that over 70% of respondents in their work does not use any software tools for project management, although it is clear that by not doing so they directly reduce the quality of project management process, which has negative effects on the project results. Also, the connection between the usage of software tools for project management and success of projects have been researched.

Keywords: project management, digital economy, software tools for project management, project success.

1. Introduction

Digital economy is the modern way of doing business which relays on usage of information and communication technology (ICT), especially the Internet as a world (global) computer network. It is the convergence of economics, computer science, communications, computing, and digital electronics. Digital economy fundamental shift is from an industrial economy to an economy characterized by information, intangible assets, invisible value, service, and a new form of organization and institutional forms.

It is based on intangible assets, information, innovation and creativity, and optimal development of the economic potential. The essential elements of digital economy are digitizing and powerful use of information and communication technologies, as well as knowledge codification and information conversion, together with the new way of organizing the economy, business transactions, labor and production. The traditional

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1 Ovaj rad nastao je kao rezultat naučno-istraživačkog projekta „Digitalne medijske tehnologije i društveno obrazovne promene“, finansiranog od strane Ministarstva prosvete, nauke i tehnološkog razvoja Srbije u periodu od 2011. do 2014. godine.

2 This paper is a result of a scientific research project “Digital media technologies and socially educational changes”, which is implemented with the financial support of the Ministry of Education, Science and Technological Development of the Republic of Serbia for the period 2011-2014.
business is based on the use of paper documents and universally accepted communication between stakeholders in the business. Business in which business transactions are primarily achieved electronically is known as electronic business (e-business).

From different viewpoints, e-business can be defined in different ways. From the standpoint of communication, it is the submission of information, products/services, or payments via telephone, computer network, or any other means. From the standpoint of business, it is the application of new digital technology on already automated business transactions. From the point of service, e-business is a customer service tool that gives information on companies offering services and better insight into the offer, faster and cheaper. From the standpoint of on-line perspective, it gives the opportunity to buy and sell products and information through the Internet and other online services. E-business projects differ from other projects because they include integrating diverse data, IT systems, architectures, protocols and standards across disparate organizations. Conducting projects in digital economy is hardly imaginable without adequate software tools for project management.

2. DIGITAL ECONOMY

Thirty years ago, electronic calculators were beginning to penetrate mass markets in rich countries. Today, around half a billion people are using machines that can store entire libraries of books, music, and video material, vastly extend their capacity to process information, and entertain with virtual realities of astonishing realism. Thirty years ago, long-distance communication was mainly via mail carrier and to a lesser extent the telephone. Today, much of the world is connected via sophisticated networks that allow volumes of text, images, sound, and video to be exchanged in an instant. The pace of innovation and adoption of information and communications technologies (ICTs) has been, to say the least, astounding. Innovation related to ICTs has continued on many levels: basic science, engineering, manufacturing, system integration, and new applications. Adoption has gone hand in hand with innovation, giving rise to a steady and growing flow of income to invest in further progress. The institutional and societal framework in many rich countries proved very able to support sustained innovation and adoption of ICTs. The important role that ICT-enabled products and services have come to play in modern economies gave birth to the idea of the „digital economy“, suggesting a transition to a new set of rules for how to succeed [1].

The digital economy has been in the limelight of public interest since the 1990's. Digitalization of goods such as written work, music, games, and movies implies that these information goods can almost costless be moved from one party to the other. This has given rise to new business models and strategies used by firms operating in these markets. The development undergone by the ICTs or digital technologies during the last decades and the innovations in business associated with them have defined an economic space which is known by different names, including post-industrial society, knowledge economy, innovation economy, online economy, new economy, e-economy and digital economy [5]. The digital economy is a complex and emerging phenomenon, related to microeconomy, macroeconomy and the theory of organization and administration [6].

For almost thirty years, project management was solely related to the particular types of industry, such as aircraft, defence or construction industries. Although these industries were often project - oriented, project management was used only to respond to the customer needs. Project management was considered as something nice but not necessary. As a result, best practises in project management were not considered essential. In the last two decades, project management has evolved in the management process, which is mandatory for the sake of long-term survival of companies. Project management is now a necessity rather than luxury, and permeates all aspects of business. As companies begin to realise all good aspects that project management has on profitability, the focus is shift on achieving professionalism in project management. This paper will briefly describe phenomena of digital economy and project management, and will present research about the use of software tools for project management, as the basis for project management in the digital economy. Usage of software tools in different organisational structures or industry types will be discussed, together with connection between usage of software tools for project management and project success.

The first references to the digital or new economy are found in Tapscott [2] and in the report The Emerging Digital Economy prepared by the US Department of Commerce [3]. The digital economy defines a new socio-political and economic system, characterised by an intelligent space, which is made up of information, instruments of access to and processing of the information and capacities of communication [4].

According to Zimmermann & Koerner [7] and Zimmermann [8], the digital economy is based on the digitalization of information and on the respective infrastructure of ICTs. This concept is the one which best defines the global impact of ICTs (not only the Internet) on the economy. From a point of view that is as much macroeconomic as microeconomic, the intersection between the technological advances and the innovations in the business processes in the firms is considered [9]. On the other hand, according to Kling & Lamb [10], the digital economy is an economic sector that includes the goods and services which development, production, sale or supply depend in a critical way on digital technologies. At present, we can speak of a new or digital economy as ICTs, especially the Internet, which are changing and will continue to change in the future the direction and organization of firms and the competition among them [5]. The digital economy is affecting the firms and organizations, the decisions of location, size, organizing structure and relations with other firms, the structure of markets, the prices of...
goods and services and the characteristics of the labor market, among other factors [11]. In fact, the impact of the digital economy on firms and their environment (general and specific) can be considered starting from the analysis of the characteristics of the digital economy.

The world's biggest socio-economic transformations show that the appearance of new technological elements significantly changes production relations and also modifies social, cultural, and political relationships. These changes will be even greater in the near future. Today we live in a world of convergence of information and communication technologies where the network acts like a global brain. This linking of individual brains is similar to a self-organizing mechanism whose main task seems to be the upgrading of humankind's collective intelligence [12]. This new kind of society acquires characteristics of its own, which are first evidenced in a different way of perceiving and understanding topological properties of the new space-time, especially the irrelevance of distance. This gains fundamental importance in the modification of the spatial organization of social relationships. Space and time connect with each other, and make each other relative. As a result, space today does not restrict the flow of information, ideas, symbolic contents, and an endless range of human interactions. It is here where mental distances determined by actors themselves become relevant for their capacity to interact with other people, even those unknown to them [12]. The new information and communication technologies integrated into the world network generate a global culture with a strong scientific basis that threatens to homogenize and probably eliminate the identity of local, national and regional cultures. Their survival is not guaranteed by their mere resistance to technological changes. Thus, it becomes crucial to know, in this kind of society, that the ideal of free trade can be carried out with little control and regulation. This is a new economy founded on knowledge [12].

In discussing the new (digital) economy, it is necessary to distinguish between information and knowledge. Information may be defined as a collection of data, whereas knowledge can be defined as a structure (theory or hypothesis) that makes it possible to organize and interpret information [14]. Thus, in the old economy, information flow was physical: cash, checks, invoices, bills of lading, reports, face-to-face meetings, analog telephone calls or radio and television transmissions, blueprints, maps, photographs, musical scores, and direct mail advertisements. In the new (digital) economy, information in all its forms becomes digital—reduced to bits stored in computers and racing at the speed of light across networks. The new world of possibilities thereby created is as significant as the invention of language itself, the old paradigm on which all the physically based interactions occurred [2].

3. PROJECT MANAGEMENT

In everyday economic and social life the term „project“ is widely used. Whether it's about winning a new product, the reconstruction of production facilities, the without preconceptions, the new reality so as to redefine our role and make the cultural universe a fertile soil capable of nourishing different identities [12].

Interpreted in this way, the new or digital economy is about dynamics, not static efficiency. It is more about new activities and products than about higher productivity. While economic growth can be described at the macro level, it can never be explained at that (macro) level. Economic growth results when a variety of actors create and use new technology. New technology is the result of new combinations of ideas. When connectivity increases, the number of possible new combinations increases also [13].

There are three dimensions to technological innovation systems [13]:

- a cognitive dimension defining the clustering of technologies resulting in a new set of technological possibilities; this identifies the relevant knowledge base or „design space“ of the system;
- an organizational and institutional dimension capturing the interactions in the network of actors engaged in the creation of these technologies; and
- an economic dimension consisting of the set of actors who convert technical possibilities into business opportunities.

The economy has reached a new age: the age of an industry which is not based on an innovative businessman's technological, commercial and financial skills, but on the intellectual ability of all the members of the company, regardless of their positions and duties construction of a new factory or about a particular research effort, it is always being talked about planning and implementing a project. That means that almost every set of extensive and complex activities within an organization can be labeled and treated as a project, which has certain characteristics and a different level of importance in each organization. Project is a unique endeavor to produce a product or service, with a clearly defined time frame and budget, and with a given quality.

Project management has evolved from the principles of general management, adopting the most important subprocesses of management - planning and control - to manage the implementation of various projects. Also, the project management uses certain methods and techniques that have been developed in management and other related disciplines, such as - Gantt charts, network planning techniques, methods, operations research,... Project management means the application of knowledge, skills, tools and techniques to project activities to fulfill requirements of the project [15].

Project management is the discipline probably as old as the world itself. People carry out projects for millions of years, from the earliest days of organized human activity. Prehistoric man going hunting can be seen as a temporary activity directed toward a common goal, in this case the supply of meat [16,17]. Also, there have been large and
complex projects that have lasted for decades. The construction of the pyramids, the Great Wall, Hadrian's Wall and Roman waterworks were all „projects“ of the time. Tarnow [18] argues that all of them, despite regional and cultural differences, share a common practice of project planning, implementation and achievements. He believes that the implementation of these projects was under the guidance and direction of a main building master, supervisor, or someone who oversaw the entire project, and that the success of these projects, is the direct result of good project management.

Project management, in the sense it have today, appeared after the Second World War. Operational research has investigated the role of decision-making, which resulted in the optimization of effort. Systems analysis was able to simplify the complex and difficulty which were introduced by the new systems [16]. Project management has traditionally been enforced in construction, architecture and engineering professions, where it was necessary to manage large and complex projects [17]. Then the knowledge related to project management focusing on the „core“ skills, such as the calculation of the budget, scheduling of activities and allocation of resources, and this was done by using management tools such as Gantt charts, resource availability graphs, charts, schedules, ... Most of the tools and concepts of project management that are used today were created then, in response to operational problems. At the end of the eighties the last century, project management has evolved into a separate management discipline [19].

Modern project management began to spread to other industries, strengthen and develop its capabilities by developing new tools and techniques for project management, as well as the establishment of a variety of training and education in this area [20,21].

Some authors believe that project management developed from research based on mathematical algorithms and techniques of planning [22] and set aside in a separate management discipline in the late fifties and early sixties of the last century, with the development of techniques of PERT (Project Evaluation and Review Technique) [23]. PERT technique and CPA method (Critical Path Method) have been developed for the Polaris program of U.S. government. Polaris program was so large and complex that a special computer program had to be developed to monitor its development. The U.S. aerospace industry, the Ministry of Defense and a wide variety of construction companies contributed to the development of project management during this period. The focus was on improving profitability, while at the same time, new technology was being developed [23, 24]. These techniques and methods are also included in many computer programs that are used to manage projects in the today's time [25,26].

At the end of the fifties, the U.S. aircraft industry and the industry of defense were faced with cost overruns for certain projects to the amount even 200-300% greater than planned [17, 27]. Kerzner [27] believe that this happened because of faulty implementation of project management principles, and the fact is that the problem was in not being able to predict the development of technology, because these projects lasted for 10 or 20 years. At the beginning of the sixties, weaker growth and a lack of acceptance of project management was evident [18]. It is assumed that this happened because the techniques and project management methods were not fully understood and accepted, and this has created fear among managers to use them [28,29]. However, in the late sixties, the managers started to search for new techniques of management and leadership that can be applied quickly to a changing environment [17]. More complex tasks and faster changes in the environment affect managers to increasingly turn to the application of methods and techniques for project management [30, 27, 18]. From the eighties onwards rapid development of project management is evident [31, 27]. During the nineties, the companies really began to realize that project management implementation is the key, and that is not the question whether to apply project management principles or not, but how fast it is possible to implement them [31, 27].

Today, project management is an area of interest to many individuals and organizations. Projects are everywhere: in public and private organizations, in profit and non-profit organizations, large and small companies, and their presence is expanding [32,33]. Although the interest in project management came more out of necessity than out of desire, it is growing in recent years. Projects are often the best way to successfully complete tasks that could not be successfully carried out using traditional methods. Using the concepts and methods of project management becomes prevalent, critically important, and more and more company relies on it in the process of achieving success [34, 27, 33]. It is considered that the development and importance of project management has increased, especially in multinational organizations [35, 27, 36].

Project management can be seen as a management tool, the tool which is used for managing the projects so that activities will end on time (or even ahead of time), project will stay within a budget constraints and a tool that will help the project team to meet customers’ requirements [15].

The essence of project management is that projects bring change in a given period of time, and often this is all about „entering into the unknown“ [37]. Nowadays organizations survive by using opportunities in the spectrum of uncertainty, and the projects are being started to take advantage of these opportunities [38].

Project management is an universal discipline which can be used in almost all areas of business and industry. It is very efficient and effective, and proved to be a good management tool that is globally available and applicable to all kinds of industries. Project management is crucial for managers in any type of organization anywhere in the world and an understanding of project management principles contributes to a better understanding of the competencies that the project manager and team members must have, and thus contributes to the success of the project [22].
The field of project management continues to grow, and there is no evidence to suggest that it will reduce or become less complex. As the number of specialists who are becoming new project managers continues to grow, and many of them have no experience in the application of tools and techniques of project management, chances for great success are being increased, but, unfortunately, both chances for large and costly mistakes. As a result, there is a growing need to study competency and skills to successfully characterize project managers and successful project management [39, 33].

4. PROJECTS IN DIGITAL ECONOMY

The United States Census Bureau (October 2000) defines e-business as „any process that a business organization conducts over computer-mediated network channels.” In order to reflect current and emerging developments this definition of „e-business” is expanded to include „all business activities utilising all forms of ICT and digital technology”. E-business includes collaborative commerce which uses ICT to enable collaborative relationships along a value chain and knowledge flows among distributed participants engaged in various joint activities [40].

E-business has strategic importance to government and business internationally. E-business is considered so important it is measured by national statistics organizations using standard indicators developed by the OECD (Organization for Economic Cooperation and Development) [41, 42]. Provided e-business implementation is successful, benefits include increased international competitiveness, reduced costs, improved profitability, and enhanced quality of service.

E-business projects differ from other ICT projects because they include integrating diverse data, IT systems, architectures, protocols and standards across disparate organizations. The ICT used for e-business is an add-on to existing technology [43]. Organizations are required to interface their internal ICT systems and interoperate with partners via communications infrastructures that often include the internet. The nature of the ICT involved means that e-business cannot be implemented without cooperative effort.

Conducting business in the digital economy means using web-based systems on the Internet and other electronic networks. Corporate success in the 21st century requires business adaptability and durability [44]. E-business initiatives are thus going beyond their current strategic importance to one of enabling corporate survival.

Today’s e-business initiatives are technically oriented. Requirements are technical, not business, not process, and not social [45]. They emphasize transactional workflows and transaction codes [46]. However, workflows and transactions may or may not fully address system integration points. Their designs addresses how the e-business solution will operate, but they often do not address organizational change issues or stakeholder and teaming complexities [47]. Even though their solutions are holistic and often contain a number of complex system integrations, e-business projects often lack a distinct deployment stage, a comprehensive training plan, and a post-implementation learning stage [46].

Today’s e-business plans also lack robust planning, tracking, and control throughout the entire solution development life cycle [44]. The complexity of an e-business solution requires its project plan to be based on constraints, assumptions, and risk, a work breakdown structure (WBS) instead of just a task list, and time or cost estimates based on the WBS [48]. The plan also needs to define specific change control activities to occur in each project phase, with project earned value computations at phase end points, and regular project status meetings and reports [49]. In addition, an e-business project needs a set of well-defined change control procedures – one procedure for each of its key elements: scope, schedule, cost, quality, and risk, with defined closure points for project phase [15].

The success of an e-business initiative depends on many key factors. Solution scope must be defined before project planning begins [50]. The project must tightly manage each area where errors can cause failure: requirements, design, technology integration, testing, training, and deployment [51].

E-business projects are absorbing more of the IT budget [52], so firms are using disciplined programs to implement these initiatives [53], especially through the expert application of project management [54]. E-business project success also requires balancing imagination and methodology [55], while providing tight coordination and control among many participating organizations to reduce risk [56]. For contract labor management, project timelines are short and fixed, the project focus is the outsourcing agreement, and the implementation requires heavy coordination from a single person with external oversight responsibility. Such projects succeed or fail based on following [46]:

- Risk definition - Roughly half of all e-business projects fail, even though 75% of all projects track risks. Successful e-business projects keep a very tight watch on the risk factors, especially the project constraints and assumptions [57]. Part of this monitoring requires an analysis of project atmosphere, stakeholders, and centers of influence [58]. Therefore, prior to project planning, all project constraints and assumptions must be defined, plus the methods for monitoring them.
- Comprehensive plan - Prior to project commencement, all elements must be clearly defined. This encompass: goal, scope, messages, personnel, time frame, cost, payback and communications [59].
- Adequate resources - e-business pressures projects to create a cohesive and interdisciplinary team [60]. E-business pressures project managers to be flexible in light of the large number of project stakeholders [61]. E-business forces project teams to attend to the project’s relationship with the organization, and to how well the project manages itself [62].
- Accurate estimates - When a very large project is successful, it often refines its estimates [63]. Proposal estimates have a +/- 100% accuracy. Early planning estimates have a +/- 25% accuracy. Deliverable estimates have a +/-5% accuracy. Good project managers maintain strong control over estimates [64] by reviewing them weekly with the project team, and reviewing daily during the deployment phase.
- Estimate tracking - Tight control of results is accomplished via a project plan where estimates are fixed [63]. This baseline plan becomes a visual control that enables regular evaluations to show progress in order to identify variations [64]. Without a baseline, project status reverts to people’s opinions about due dates, which too often are optimistic and lack grounding in reality. Without a baseline, schedule slip is almost unavoidable.
- Project repository - The nature of an e-business project requires it to constantly provide information to its team [66, 67]. This is best accomplished via a web-based project portal [68].

5. SOFTWARE TOOLS FOR PROJECT MANAGEMENT

Conducting projects in digital economy is hardly imaginable without adequate software tools for project management. Project management is the application of knowledge, skills, tools and techniques to meet the requirements of the project. As the projects requirements become more complex, it is necessary to take into account the large number of data, often simultaneously, and monitor their values. If these data are displayed graphically, this greatly enables the analysis of the critical path, situation time frame and, in general, the structure of the project. Software tools for project management are based on that idea.

Software project management tool is any software that allows you to track the project from start to finish. This type of software usually allows acquiring continual and constant information about the disposition of resources, tasks assignment, the flow of documentation and financial management, together with time and quality management of the project. The goal of software project management tools is to increase project efficiency by making the development cycle of the project more accessible to all team members, so that they could be more involved in the project.

Like any other topic imaginable today, project management has been both simplified and complicated by the influence of information technologies. Thanks to the such features as improved ease to use, integration capabilities across the company, web-enabled functions, what-if modeling, and much more, software tools for project management provide great assistance for project management assignments. However, the capabilities of today’s software tools can give users the sense of false security. These tools are just tools, not project managers. They can be useless, even detrimental, if they are not applied by people skilled both in project management and in using these tools [69].

The most important advantage of these tools is that they allow an individual or entire project team to collect and process data, search them, monitors and updates, and in a word, follow the project from its beginning to its end. There are few projects with small number of data where it is not necessary to use the software at all stages of the project cycle. In addition to this, other advantages of the software tools for project management are as follows:
- Communication - the software project management tools enable team members to communicate no matter where they are located.
- Cooperation - project team members usually receive individual tasks, which are only part of what the project aims. Project management software gives employees the opportunity to improve their cooperation by sharing documentation, adjust deadlines for completion of certain tasks and feel like a part of the team.
- Responsibility - the team members are simply forced to be more responsible in carrying out their duties, because their progress is visible to all other members of the team.
- Transparency - the software project management tools allow greater transparency in the project because all actions are recorded in the system. This provides an objective review of the project, from start to finish.

Of course, not all software tools are suitable for all kinds of projects. Each tool follows a specific methodology for projects management, and in accordance with that methodology, the type and scope of the specific project, software tool should be chosen. Software tools for project management can be a desktop or network-oriented, designed for a single user or multituser, completely free or the extremely expensive. The most famous is certainly MS Project, then Primavera, Basecamp, Redmine, dotProject, @ project, etc.

In the literature related to project management, software tools have long been considered to be a crucial for planning, organizing, controlling, reporting and decision-making [70]. Despite the theoretical and practical importance of software tools for project management, there are few studies that examine the application of these systems. These researchs usually deal with the evaluation of specific applications concerning planning, communication, reporting, risk management, cost estimates and managing documents.

The business environment of today is very complex. Managers need to make decisions quickly, efficiently
allocates resources, and always to have a clear focus. In organizations that perform a number of projects at the same time, management is faced with many challenges [71]. Project leaders manage projects that are different in size, complexity and deadlines and this can create some problems. These problems may be associated with inappropriate use of resources and the given deadlines to complete a project [72, 73]. Inadequate allocation of resources often creates additional pressure to the organization, which leads to poor information flow and longer duration of the project [71]. Interdependence and interaction between projects [74] as well as the information overload for the leaders of the project [75, 76] also presents unique challenges. Project leaders can be overwhelmed with the quantity of information they receive in order to make decisions, and then drop out of sight truly relevant information.

Using project management tools has a positive effect on project management because it contributes to better decision making and influence the success of the project as a whole [77]. The application of software tools for project management in multi-project environment can help meet project tasks and be an effective strategy for managing multiple projects at the same time [78]. Also, if it comes to projects that have a high level of complexity, software project management tools make it easy to manage such projects [79].

However, project leaders who led a project in less complex environments are less willing to use software tools for project management, because the time they spend updating the system exceeds the benefits they get from using the system [79]. When it comes to managing larger number of projects in a less complex environment, software project management tools contribute to adequate decision-making in such environment, and provide insight into the relationship between the quality of the information received and project manager satisfaction when using certain software tool [80].

Project management is a complex field with many variables. Although needs and solutions vary, there are several elements that should be considered, when choosing the right software tool for project management [69]:

- **Role based tools** – because many people within the company are affected by a project, a „one-size-fits-all“ solutions rarely applies. Different levels as well as types of users must be able to access the specific information they need to do their jobs. Executives, for instance, need an elegant summary view of project portfolio. They need information on how projects are performing against budget and time lines. Full time project managers must be able to model different scenarios to finish projects faster. Workers need simple web-based timesheets and to-do lists, and to receive updates and assignments. A multiproject, multisite project management tool must be able to provide a project manager with in-depth project modeling features, flexible what-if analysis, and sophisticated reporting options while giving many people in the company project information tailored to their unique needs.
- A **hierarchical structure** – all of company’s projects should be planned, analyzed and controlled from a single framework or hierarchy, from inception to completion. The software tool for project management should provide top-down as well as bottom-up planning, and should compare the perspectives to ensure that tactical plans are in line with higher-level objectives. A company-wide project management software tool should let everyone look at projects using a hierarchy that makes sense to him. For a Chief Financial Offices it means viewing projects by cost and accounting structures, with appropriate links to corporate systems. For the project manager, it means analyzing the project according to work-breakdown-structure of its deliverables.
- **Optimisation of limited, shared resources** – for many companies time is, not capital, the scarcest resource. Assigning the right person to a task and making the most of those involved in a project, regardless of where they are located, are essential to successful project management. A software tool for project management should be able to help project managers decide who should be working on which project, as well as to plan resource assignment based on the role. For example, the project manager should be able to identify instantly when key resources will be freed up for the project.
- **Real-time communication** – software tool for complex project management should provide top management with timely feedback about projects and project portfolios. At its heart, project management is communication. With traditional project management tools, however, by the time a decision-maker sees the data, the ability to change directions may be gone. Project management in the internet era must give access to project information in a real time. If something is going to take longer then planned, management needs to know about it immediately, not a week or two latter. Project management software tool should also provide managers with insight into strategic vision of the business as it is set by the senior executives or strategic planners. It must give them a sense of ownership. Middle management is then better prepared to respond quickly to changes and communicate those changes to subordinates for follow-up. Software tools for project management should bring front-line workers into the communication process. Workers need to be informed about changes in priority so that they are always working on the most important tasks. The communication loop must be closed-up by a real-time mechanism that lets these workers acknowledge what has been completed, and, more importantly, what remains to be done.
- **Visible project performance** – companies that employ performance measurement techniques are more likely to achieve leadership positions in their industry type. A comprehensive software tool for project management must include a strong focus on project performance measurement. Project performance
project management is as follows [81]:

- Built for integration – as software tools for project management takes place beside other corporate systems, these software tools must be able to integrate with accounting and other company-wide information systems. Whether it is accomplished through preconfigured or custom build interfaces, integration ensures consistency of project-related information throughout the company. As project change, other departments will be able to see the consequences, including the impact of schedule changes.

- Computer-based project management can save the user time and promote effective leadership by providing tools to simplify a variety of complex tasks. Although project management software tools offer many features, they are not panacea, and they can not turn inexperienced project manager into a good one [69]. Correct way to implement software tool for project management is to firstly identify the specific problem, then evaluate tools which can solve that problem, not the other way round.

Short description of main types of software tools for project management is as follows [81]:

- Free/Open Source - Project management software market encloses a lot of products. From all these, the free or/and open source are considered to be a special category, being perfect for small businesses. A reason is the fact that such businesses actually do not need to buy huge project management software tools, but to understand the value of a well-founded project management. This free software generally provide only basic functionality such as time lines rudimentary or Gantt charts. In terms of cost accounting line their offer is slight, particularly for risk management and customer support.

- Client / Server – Some client-server software tools for project management are more specialized in niche areas. They are more targeted to desktop software and offers rich features such as the Gantt charts, risk management, Critical Path Analysis, accounting, and resource utilization.

- Online / Web-based - Sophisticated online web-based company-wide project management software tools allow project members to report task evolution, and report the details of their progress online. This, in turn, allows the project manager to understand the status of the various participants and to focus on the issues that are most important. The web-based solutions can be operated from anywhere in the world, whether on an intranet or internet. This means that everyone from top management to the frontline workforce can access project-related information anytime. Among other modules, usually considered useful are the timesheet modules, project calendars and email notification. All these help the manager to monitor and to be proactive about both costs and time deadlines.

- General Software Tools for Project Management – Some tools such as Microsoft Project and Visio are examples of applications well rated among project management software tools. They do everything fairly well, but nothing tremendously.

6. RESEARCH METHODOLOGY

Managing large projects which involve different groups of people and complex tasks can be challenging. The solution is to use software tools for project management, which allows a more efficient management of projects. This research was carried out in Serbia in 2011 with the aim to establish are software tools for project management being used, and if yes which are being used the most. Together with this, different indicators for successful projects were defined and assessed, and connection between usage of software tools for project management and project success is explained.

The study was conducted using a questionnaire placed on the Internet (www.surveygizmo.com), and only fully completed questionnaires were processed, partially filled ones were not taken into account. By placing the questionnaire on the Internet, process of gathering responses was made easier for the respondents, because they were able to fill it when it suits them. Also, the processes of data collection and processing the data were made easier, as well. When setting up a questionnaire on such sites respondents are not able to skip questions (because all questions are marked as required) thereby placing the questionnaire on the Internet improve the quality of the collected data and reduce the number of incomplete questionnaires. While designing online questionnaire, a number is assign to each response, by which the Internet site automatically performs encryption of data collected, which facilitates further processing of the data in SPSS, or any other package for statistical data processing. Basic statistical analysis can be performed on the collected data on the site, and data can be exported in the form of a table which is suitable for further statistical analysis. Questionnaires were distributed to people active in project management, either as project managers or as team members. Apart from filling in the questionnaires, they were asked to forward it to their colleagues, also active in project management area. In that way a sample of 407 respondents in more then 11 industry types distributed across 30 companies was created.

When success of the project is in question, research conducted White & Fortune [82] showed that three the highest ranked criteria by which the success of the project can be measured are the components of the „iron triangle” of quality (to satisfy customer requirements 970 points), time (finish on time and on schedule 850 points) budget (stay within the budget of 766 points). It is important to note that, according to this survey, the following ranking criteria, after these three, got only 188 points. Furthermore, a study conducted in 2010 [83] showed that about two-thirds of the researches that has dealt with the
success of the project, define and measure the success by satisfying these three criteria.

Main goal of this research was to connect, if possible, software tools usage with success of projects. Respondents were asked to measure success of projects against three criteria – weather projects were completed in time, on budget and fulfill all specification from the customers. Above all this, respondents were also asked to judge overall success of their projects, including and project implementation as well.

7. RESEARCH RESULTS

Respondents were evenly represented when it comes to gender structure (Table 1). When it comes to the hierarchical representation of respondents in the company, the smallest number is of the highest-ranking employees - top management (11,5%), followed by respondents who occupy middle management positions (29%), while more than a half of respondents are direct perpetrators of work (59,5%), which corresponds to the hierarchical structure of most companies (Table 2). Such distribution provides the best insight into the actual amount of software tools used, because in the sample are represented both ones that should use those tools, and ones who should oversee the usage of them. Most respondents are members of project teams (48,4%), but a sufficient number of them are project managers (34,9%) and some of them are managers that cooperate with a project team (16,7%) (Table 3). Software tools for project management, if used, are used mainly by project managers and members of project teams, so taking into account the aim of this research, this distribution is justified.

The respondents come from companies that differ in ownership structure (Table 4). The state-owned companies include public and local government, and all those companies that operate with funds of the state and whose establishment and termination is decided by the state or authorized government body. A private company is one which operates with the funds that are privately owned, and the establishment and termination of such a company is decided by founder and owner. In the sample are represented both companies in domestic and in foreign private ownership. Privately owned companies represent half of the sample, state-owned companies represent little over 40%, and the rest of the sample is made of NGOs. In the presented sample, respondents are distributed across 11 industry types, however, not all industries are present enough to be able to perform statistically significant analysis, so those industries were grouped together in the „other“ category (Table 5). When it comes to the size of the company, companies of all sizes were represented (Table 6).

<table>
<thead>
<tr>
<th>Table 1: Gender structure</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>188</td>
<td>46,2%</td>
</tr>
<tr>
<td>male</td>
<td>219</td>
<td>53,8%</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2: Position in the company</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>top management</td>
<td>47</td>
<td>11,5%</td>
</tr>
<tr>
<td>middle management</td>
<td>118</td>
<td>29,0%</td>
</tr>
<tr>
<td>direct perpetrators of work</td>
<td>242</td>
<td>59,5%</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 3: Role in the project team</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>team member</td>
<td>197</td>
<td>48,4%</td>
</tr>
<tr>
<td>project manager</td>
<td>142</td>
<td>34,9%</td>
</tr>
<tr>
<td>managers that cooperate with a project team</td>
<td>68</td>
<td>16,7%</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4: Ownership structure</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>state-owned companies</td>
<td>167</td>
<td>41,0%</td>
</tr>
<tr>
<td>private (domestic owned)</td>
<td>102</td>
<td>25,1%</td>
</tr>
<tr>
<td>private (foreign owned)</td>
<td>99</td>
<td>24,3%</td>
</tr>
<tr>
<td>NGOs</td>
<td>39</td>
<td>9,6%</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 5: Industry type</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT</td>
<td>89</td>
<td>21,9%</td>
</tr>
<tr>
<td>Petroleum, petrochemical and gas industry</td>
<td>71</td>
<td>17,4%</td>
</tr>
<tr>
<td>Education and Scientific Research</td>
<td>63</td>
<td>15,5%</td>
</tr>
<tr>
<td>Finance, Insurance, Banking</td>
<td>45</td>
<td>11,1%</td>
</tr>
<tr>
<td>Arts, Culture and Media</td>
<td>42</td>
<td>10,3%</td>
</tr>
<tr>
<td>Food Industry</td>
<td>38</td>
<td>9,3%</td>
</tr>
<tr>
<td>Health and Pharmaceuticals</td>
<td>27</td>
<td>6,6%</td>
</tr>
<tr>
<td>other</td>
<td>32</td>
<td>7,9%</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 6: Size of the company</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50 employees</td>
<td>100</td>
<td>24,6%</td>
</tr>
<tr>
<td>51-200 employees</td>
<td>91</td>
<td>22,4%</td>
</tr>
<tr>
<td>201-1000 employees</td>
<td>102</td>
<td>25,1%</td>
</tr>
<tr>
<td>more then 1000 employees</td>
<td>114</td>
<td>28,0%</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>100,0%</td>
</tr>
</tbody>
</table>
Graph 1: Number of projects completed on time

Graph 2: Number of projects completed within budget

Graph 3: Number of projects that fully meet requirements and specifications

Graph 4: The assessment of overall success of projects, including the implementation of the project
The success of the project, for the purposes of this study, was measured as an estimated number of projects completed on time, within budget, meeting all requirements and specifications, as well as by assessing the overall success of projects in the organization, taking into account the implementation of the project. Respondents were asked to estimate the number of such projects as a percentage, which was during the statistical analysis converted in marks, and the average mark of success was calculated for each of the four success criteria.

When it comes to the number of projects that are completed on time, most of the respondents believe that number is slightly more than half (16.5% of respondents) (Graph 1). A little over 5% of respondents believe that in their company all projects are completed on time (5.4%), while less than 2% said that almost none of their project is completed on time (1.7%). It is interesting to note that there are 14.3% of respondents who do not know the answer to this question. Average number of projects completed within the stipulated time frame was 55.1%.

Most respondents believe that in their company almost 90% of the projects remain within budget (14%), while 9.1% of respondents believe that is the case with all projects performed (Graph 2). A number of respondents did not know whether their projects remain within budget (15.5%) or not, and the average number of the projects that satisfy this condition is 56.8%.

The minimum number of projects, on average, meet the requirements and specifications in full, only 51.4%, while even 23.3% of respondents do not know the answer to this question (Graph 3). Little less then 8% of the respondents believe that their projects meet the requirements and specifications 100%.

When an assessment of the overall success of the projects is in question, respondents were asked to grade it with the grades ranging from 1 to 10, on a poor-moderate-good-excellent scale (Graph 4). Most of the respondents assess the success of projects as good, with the grade 8 (20.9%), while the average score is lower (6.29).

None of the respondents rated the overall success of projects with 1, while 1% give it a grade 10.

The main objective of this study was to review the usage of software tools for project management. Although the initial assumption was that software tools are not used in the amount they should be, the results obtained were disappointing. Most of the respondents (more then 70%) do not use software tools (Table 7).

Table 7: Do you use a software tool for project management?

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>117</td>
<td>28.7%</td>
</tr>
<tr>
<td>No</td>
<td>290</td>
<td>71.3%</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Research is continued in the direction of discovering which software tools are being used the most. Respondents were asked to choose software tool they use from the list of offered tools, or to indicate that they are using internally developed software tool for their company. From listed official software tools most respondents choose MS Project and other tools were present enough to be able to perform statistically significant analysis, so they were grouped as „others” (Table 8). Internal tools are also being used.

Table 8: Which software tool do you use?

<table>
<thead>
<tr>
<th>Software tools</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS Project</td>
<td>44</td>
<td>37.61%</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
<td>28.21%</td>
</tr>
<tr>
<td>Internal tools</td>
<td>40</td>
<td>34.18%</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The analysis of the software tools usage by the companies was continued and the responses were analysed from the point of ownership structure of the company (Table 9).

The goal was to find out whether certain types of companies use software tools more then the others, especially to find out if private companies use them more then state-owned ones. The results showed that this is not the case. NGOs category differ significantly from the other categories, but state-owned companies do not. Software tools for project management are not being used enough in Serbia, no matter what is the ownership structure of the company.

Table 9: Software tools usage distribute across ownership structure

<table>
<thead>
<tr>
<th>Ownership structure</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private (domestic owned)</td>
<td>46</td>
<td>56</td>
<td>102</td>
</tr>
<tr>
<td>(11.30 %) (13.76 %) (25.06 %)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private (foreign owned)</td>
<td>33</td>
<td>66</td>
<td>99</td>
</tr>
<tr>
<td>(8.11 %) (16.22 %) (24.33 %)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State-owned companies</td>
<td>38</td>
<td>129</td>
<td>167</td>
</tr>
<tr>
<td>(9.34 %) (31.69 %) (41.03 %)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGOs</td>
<td>0</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>(9.58 %)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>290</td>
<td>407</td>
</tr>
<tr>
<td>(28.75 %) (71.25 %) (100 %)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis was continued in the direction weather size of the company have any connection with software usage. Results showed that this, as well, is not the case. No matter how big or small the company is, software tools for project management are most often not being used.

Table 10: Software tools usage distribute across size of the company

<table>
<thead>
<tr>
<th>Size of the company</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50 employees</td>
<td>16</td>
<td>84</td>
<td>100</td>
</tr>
<tr>
<td>(3.93 %) (20.64 %) (24.57 %)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The assumption was that certain industries use software tools for project management more than the others. This proved right, since Finance, Insurance and Banking use software tools in almost all instances and Food industry doesn’t use them at all. IT use software tools for project management in a little more than half of the cases, which is surprising, having in mind their field of work. However, software tools usage is on the low level generally, no matter that certain types of industry use them more than the others.

Table 11: Software tools usage distribute across industry type

<table>
<thead>
<tr>
<th>Industry type</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT</td>
<td>33</td>
<td>56</td>
<td>89</td>
</tr>
<tr>
<td>(8,11%)</td>
<td>(13,76%)</td>
<td>(21,87%)</td>
<td></td>
</tr>
<tr>
<td>Finance, Insurance, Banking</td>
<td>42</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>(10,32%)</td>
<td>(0,74%)</td>
<td>(11,06%)</td>
<td></td>
</tr>
<tr>
<td>Health and Pharmaceuticals</td>
<td>8</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>(1,96%)</td>
<td>(4,67%)</td>
<td>(6,63%)</td>
<td></td>
</tr>
<tr>
<td>Food Industry</td>
<td>0</td>
<td>38</td>
<td>38</td>
</tr>
</tbody>
</table>

The success of the project was measured as number of projects completed on time, within budget, meeting all requirements and specifications, as well as by assessing the overall success of projects in the organization, taking into account the implementation of the project. The main objective of this study was to review the usage of software tools for project management, since hardly any project in digital economy can be managed without them.

More then 70% of the respondents do not use software tools for project management at all. Taking into account that software tools provide excellent assistance for project management assignments, this can hardly be enough.

8. DISCUSSION OF THE RESULTS

In order to determine connection between software tools for project management usage and success of projects, t-test for independent samples was carried out (Table 12). Results showed that apart from performance indicator „Number of projects completed on time” for all other indicators there is significant difference in project success whether software tools for project management are being used or not. Closer look at the results show that average mark of project success (M) is significantly higher if software tools for project management are being used. This is especially the case for the performance indicator „The assessment of overall success of projects, including the implementation of the project” where average mark when using software tools for project management is 7,15 and when these tools are not being used is 5,95.
being used in slightly less percent. From the project management point of view, this is very good, because internal software tools usually have certain type of official software tools as a base, and then company shape it and redesign to fit it's own purposes and needs better. This can be a signal that company values project management skills higher then other companies, or at least that it has taken project management skills under closer consideration.

Research then continued to discover whether software tools usage differ in regard to the ownership structure of the company. The results showed that this is the case only for NGOs. Research also showed that software tools usage do not differ in regard to size of the company. Only industry type in which more respondents use then do not use software tools for project management is finance, insurance and banking. This is probably because these type of industry is foreign owned, and owners impose software tools usage in all branches of their company. Big surprise was low usage of software tools for project management in IT industry.

Results clearly show that software tools usage is connected with the success of the projects, across all four success criteria. Success of projects when software tools are not being used differ significantly in three criteria. This shows that software tools are important factor when it comes to project success, which should not be neglected. However, software tools for project management in Serbia are not being used as much as they should.

9. CONCLUSION

Today’s business environment is competitive, globally oriented and profit driven. Where the new technology will lead us is still unknown. It goes far beyond the imagination of those who develop these new technologies. The impact of new technologies has always been higher than that expected by their authors.

Software tools for project management are not a „magic wand“ or a replacement for knowledge and experience. Although software tools for project management provide array of outstanding possibilities to facilitate the process, decisions must still be made on the basis of overall project environment, not merely on what is seen on the computer screen. Project management software tools will not initiate, accomplish or complete a project. They are only tools designed to help the user and to save time.

Despite all the benefits, software tools for project management are not being used in Serbia enough, and this is showed in presented research. Slight differences are noticed between software tools usage in companies with different ownership structure, industry type or size of the company. However, not big enough to implicate that any type of companies use software tools for project management in sufficient number.

Selecting a software tool for project management require close examination of the skills set a project team needs to be successful. All kind of software tools are available to meet almost every need, from simple planning and scheduling of a single project to complex modeling of multisource, multisite, multiproject endeavors.

The people who manage projects must be more knowledgeable then the software they use. To make project management effective, project manager needs to have processes, procedures and commitment. Firstly, one must understand the concepts of project management, then take time to define the requirements, and only after that select a software tool that matches that job. It is the process that is still lacking in Serbia.

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COMPATIBILITY OF MEDIA STUDENTS’ ATTITUDES WITH THE PRINCIPLES OF MULTIMEDIA LITERACY

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Abstract: In the 21st century media culture, five central concepts and five key questions of media literacy, founded by the Center for Media Literacy (CML), are set as “leading” questions that help us discover what hides behind the media content that surround us on daily basis. The goal is to understand media messages, find out why, who and to what purpose sent (multi)media message that came to us, in order to avoid the manipulation that awaits us at every corner today.

A study that aims to check the media literacy of students of the media in Novi Sad has been carried out, as well as the presence of media literacy throughout the study of these examinees.

Research has shown that the tested students know the basic principles of media literacy, but they use them “properly” to a lesser extent. In essence, every college and study analyzed treat the media literacy program differently, the reason being the output profiles of students -the media and media literacy are not as much taught in general.

In order to become more media literate, it is necessary to include the process of media education, which should be introduced in primary schools as well, even as a single subject -Media Literacy.

Keywords: Media, Media Literacy

1. INTRODUCTION

"The media are modern means of mass communication, such as television, film, radio, press and the Internet. Each of them individually is called a medium or medium. (Babac M., 2002)"

"Media literacy is an approach to education in the 21st century. It provides a framework for access, analysis, evaluation and creating messages in a variety of forms - from print media to the Internet. Media literacy builds an understanding of the role of media in society as well as essential skills for their questioning and self-expression that are necessary to citizens in a democratic society. (Bulatović Lj., Bulatović G., 2011)"

Our selection of keywords is not random.

Today, the world would be unimaginable without the media. They surround us daily and slowly but surely, wriggle under our skin. They educate, entertain and inform us. They are that much present to affect our consciousness, attitudes, decisions, procedures, affect our views of the world and impose certain discourses. The media have the power to manipulate.

Regardless of the fact that, primarily thanks to new technologies, we can choose information that we need, the information that have occurred shortly before anywhere on the planet, yet we are daily surrounded by those media content that only they (the media) want to sent us. We are, of course, consciously or unconsciously, receiving them.

The question is whether this information is true? The question is whether this information is objective? The question is whether this information are wrongly represented? Whether each of us will individually to understand this information solely in his own way? Whether it can come to confusion? Are we informed enough? Does someone want to send us information to manipulate us and that information is not accurate or ethically acceptable? Does someone want to persuade us that a lie is actually the truth (or vice versa)? On the other hand, do we pose the right questions?

Being media literate is the only way of defense. The only way to protect ourselves is to critically read media messages so that we could understand them. Only then will we be able to “unpack” and analyze those messages and to finally discern the “desirable” or “undesirable” ones, those that “wish us well” and those that “wish to harm us”, those that are positive and those that are
negative to us. Only then the media will not be able to manipulate us.

Media literacy builds for us the skill of perception and no wonder it is becoming „the approach to education in 21st century“: Media literacy helps us to ask the right (good) questions, to reach the discourse helping us to deconstruct media contents.

2. FIVE CENTRAL CONCEPTS AND FIVE KEY QUESTIONS OF MEDIA LITERACY

The Center for Media Literacy (CML) is a leading educational organization providing public education, specialization and educational resources on a national and international level. It supports and promotes media literacy as education and as a frame for the approach, analysis, estimation, participation and creation of media contents. CML helps citizens, especially the young, to develop critical opinion on media contents surrounding us in the 21st century.

The Center for Media Literacy team, MediaLit Kit, has adopted five commonly known leading questions (5W) to which each good news should answer:


By the principle of inverse pyramid (having two functions: to directly an teh evry beginning provide the most important facts to a newspaper reader, radio listener or television viewer that are always in a hurry; and to enable the editors if due to pressure of short time or small space they need to summarize their texts, abridge the news from the end so that the most important data are not lost) and if there is room for it, the question “How” is also answered. These principles of writing are basic for every media.

**Figure 1:** Inverse pyramid

![Figure 1: Inverse pyramid](image)


The authors’ researches (Bulatović Lj. Lj., Bulatović G., 2008.; Bulatović Lj. Lj., Bulatović G., 2009.; Bulatović Lj., Bulatović G., Arsenijević O., 2011.; Bulatović G. Bulatović Lj., Arsenijević O., 2011.) show that these five questions (5W) are generally known by our pupils and students in secondary schools and faculties, as the questions to which the journalists should answer during constructing media contents.

Is it sufficient to make us media literate? Are we with the cognition protected from daily „attacks“ of media content that are often trying to manipulate us?

The proponents of education for media literacy believe that it is possible to succeed when all participants graduate with the knowledge, ability and skill to routinely implement the Five key questions of media literacy to their daily media experience (consummation of media content). Five key questions that relate to the concept of developing media literacy are directly developed form five central concepts of media literacy developed by media workers throughout the world (Aufderheide, P., 1997.; Postman, N., 2003.; Fedorov, A., 2005.) in order to develop five analytical constructs behind media messages. The key words making a short outline of analytical concepts are (www.medialit.org):

1. author (constructivity)
2. format (and production techniques)
3. auditorium
4. content (or message)
5. motif (or purpose)

Further on we will state where from does each Key question originates and the connection with the Central concept as stated by Tessa Jolls, the President of CML (http://www.medialit.org/). Key words with the addendum Guide of questions set a model for modern way of acquiring knowledge and asking the right questions on media contents.

**Table 1:** Five central concepts and five key questions of media literacy according to CML.
MediaLit Kit represents Five central concepts and five key questions of media literacy as "the guiding questions" or questions that lead to other questions that eventually lead to "Aha!" effect (the moment of insight and understanding).

Five central concepts and five key questions of media literacy serve together as "great ideas" or "permanent comprehensions" that are needed to the media contents users in order to quality manage their lives as the citizens of 21st century, the century of media culture. Together, they give a unique contribution in education of 21st century.

Over the years, the ones practicing media literacy throughout the world have adapted and observed this analytical synthesis to today's indirect "texts" (media contents) – from television and films to the advertising panels (buildboards), magazines and even the stickers on cars and T-shirts. These theorists (Goodman, S., 2003.; Fedorov, A., 2004.; Avramović, Z., 2005.; Suzić, N., 2005.; Miliša, Z. and Ćurko, B., 2010.), instructors and practitioners in the area of media literacy have established the grounds on which practical pedagogy for learning and education of media culture in 21st century is built on.

Thus, Central concepts and Key questions serve to "continual learning and understanding" of the media. They will help to the users of media messages to find their way through life as citizens of global media culture. The pair, together makes a unique contribution to 21st century education and represents a powerful tool for preparation of future citizens to understand, care and contribute to all public debates in the society.

"Learning, practicing and mastering of the Five central concepts and five key questions of media literacy – over time – is what leads to deeper understanding about how media are created and what is their purpose, with the acquired ability to accept or reject both explicit and implicit messages".

Tessa Jolls, President of CML, (www.medialit.org/sites/default/files/mlk/01_MLKorientation.pdf)

### 3. RESEARCH METHODOLOGY

#### 3.1 RESEARCH SUBJECT:

The research subject is media literacy through theoretical studying of Five central concepts and five key questions of media literacy and through empirical research of the concepts by the analysis of the level of media literacy of students of first or final years of studying in three analysed study programs in the area of medias at the faculties in Novi Sad.

#### 3.2 THE RESEARCH PROBLEM:

The research problem comes to the following research questions:

- To what extent do students of first and final years of study, at three analyzed study programs in the area of media at the universities in Novi Sad know and...
implement Five central concepts and five key questions of media literacy and

- To what extent are the students of final years of study, at three analyzed study programs in the area of media at the universities in Novi Sad more literate than he students of first year at those faculties?

3.3 THE RESEARCH AIMS:

The following theoretical and practical aims have been set:

- To examine the knowledge of Five central concepts and five key questions of media literacy among the students of first and final years of study in three analyzed study programs in the field of media at the faculties in Novi Sad.

- To investigate the implementation of Five central concepts and five key questions of media literacy among the students of first and final years of study in three analyzed study programs in the field of media at the faculties in Novi Sad.

- To investigate whether there is any progress of media literacy during studying at three analyzed study programs in the field of media at the faculties in Novi Sad.

- To investigate whether there is a difference in making ones media literate at the three analyzed study programs in the field of media at the faculties in Novi Sad.

3.4 THE TASKS OF THEORETICAL AND EMPIRICAL RESEARCH:

The following tasks have been set in the research:

1. To explain the media literacy importance

2. To explain the importance of Five central concepts and five key questions of media literacy;

3. By the analysis of a short feature film „Crossword“ to show the function and implementation of Five central concepts and five key questions of media literacy;

4. To determine whether the students of first and final years of study in three analyzed study programs in the field of media at the faculties in Novi Sad know the principles of media literacy (operationalized through claims 1, 2, 3, 4 i 5);

5. To establish whether the students of first and final years of study in three analyzed study programs in the field of media at the faculties in Novi Sad, implement the principles of media literacy (operationalized through claims 6, 7, 8, 10, 11, 12, 13 i 14);

6. To establish whether there is a progress of making media literacy during studying in three analyzed study programs in the field of media at the faculties in Novi Sad;

7. Determine whether there is a difference in making literate mong the analysed students from different study programs in Novi Sad;

8. to determine whether the students of the first and final year at three analyzed study programs in the field of media at the faculties in Novi Sad are active consumers of media content (operationalized through claims 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38 i 39);

9. to determine whether the students of the first and final year at three analyzed study programs in the field of media at the faculties in Novi Sad themselves construct their own media content (operationalized through claims 19, 20, 21, 22, 23, 24 i 40);

10. to determine whether the students of the first and final year at three analyzed study programs in the field of media at the faculties in Novi Sad, decode media messages using their own discourses (operationalized through claims 9, 15, 16, 17, 18, 25 i 26)

3.5 THE RESEARCH HYPOTHESES:

Based on the previously formulated subject of the research, tasks and aims of the research, we have set the following hypothesis:

$H_0$: The students of the first and final years of study at three analyzed study programs in the field of media at the faculties in Novi Sad, know and apply Five central concepts and five key questions of media literacy, but with different levels of knowledge.

$H_1$: We presuppose that the students of final years of study at three analyzed study programs in the field of media at the faculties in Novi Sad are significantly more media literate than the students of the first years of study at the faculties.

$H_2$: We suppose that there us a high level of knowledge on Five central concepts and five key questions of media literacy among the students of the first and final years of study at three analyzed study programs in the field of media at the faculties in Novi Sad.

$H_3$: We suppose that there us a high level of application of Five central concepts and five key questions of media literacy among the students of the first and final years of study at three analyzed study programs in the field of media at the faculties in Novi Sad.

$H_4$: We suppose that there are differences in knowledge and implementation of Five central concepts and five key questions of media literacy among the students of the first and final years of study at three analyzed study programs in the field of media at the faculties in Novi Sad.

$H_5$: We assume that students tested are active consumers of media content.
We assume that the students construct their own media content. 

We assume that students decode media messages with their own discourse. 

We assume that the tested students from the Faculty of Philosophy, in relation to the the other two faculties, during the studying have advanced more in the field of print media, i.e. rhetorical and journalistic skills. 

We assume that the tested students from the Academy of Arts, in relation to the the other two faculties, during the studying have advanced more in the field of film and film language. 

We assume that the tested students from the Faculty of Management - F@M, in relation to the other two faculties, during the studying have advanced more in the field of general media knowledge and are more active consumers of different media messages. 

**3.6. THE RESEARCH SAMPLE:**

The total number of respondents, male and female students in the field of media at the faculties in Novi Sad was 153, of which 104 were female respondents and 49 male respondents. Included are all male and female students who in school year 2011/2012 attended classes at the courses Journalism (Faculty of Philosophy in Novi Sad), Production of audio-visual media and Multimedia Directing (at the Academy of Arts in Novi Sad), and Media Management (Faculty of Management-F@M in Sremski Karlovci). 

1. At the Faculty of Philosophy in Novi Sad, surveyed were total of 82 students, male and female, from the study group of journalism, of which 48 (38 female students and 10 male students) from the final year of study, and 34 (29 female and 5 male students) from the first year of study. 

2. At the Academy of Arts in Novi Sad, surveyed were total 27 students from two study programs (Multimedia Directing and Production for audio-visual media). Since in the school year 2011/2012 there are no female and male students at these two programs, we did not want to deviate from the idea to check the progress of media literacy in this school, and we have conducted the research on students of the second year, instead of the first year of study. Of all respondents, 12 male and female students (6 female and 6 students) is from the final year of study, and 15 students (6 female and 9 students) from second year of study. 

3. At the Faculty of Management in Sremski Karlovci, surveyed were of 82 students total, male and female, from the study group of Media Management, of which 22 students (13 female and 9 students) from the final year of study, and 22 (12 female students and 10 students) from the first year of study. 

In order to enter the into the research corps all students of media in Novi Sad, we wanted to interview the students from the Faculty of Technical Sciences, from the course Engineering and Media management. However, we found that this section is realized only through the electoral profile of master study and all through three media subjects, so we abandoned the original intent, since such a sample can not be valid for our research.

**4. THE RESEARCH RESULTS**

**4.1. THE RESULTS ON A SAMPLE OF RESPONDENTS OF FIRST AND FINAL YEARS OF STUDY PROGRAM JOURNALISM AT THE FACULTY OF PHILOSOPHY IN NOVI SAD**

The results show that two claims are singled out from our questionnaire that are statistically significant to us, such as claim 12 (During the consumption of media message I am thinking about life styles that are represented or excluded from this message.) And claim 21 (In designing and creation of media content I apply rhetorical and/or graphics knowledge).

**4.1.1 CLAIM TWELVE: DURING CONSUMING A MEDIA MESSAGE I AM THINKING ABOUT LIFE STYLES THAT ARE REPRESENTED OR EXCLUDED FROM THIS MESSAGE**

In Figure 1, we see that there is a difference in the responses (attitudes) of first and final year students of Journalism at the University of Novi Sad. We see that almost two-thirds of the first year students responded with "Basically true" and almost a third of the final year students with "Not sure", which may lead to the conclusion of slower progress of media literacy during the study.

One possible reason for such a distribution of results is the fact that the emphasis in journalism studies is largely on the craft, the skills relevant to the construction of media texts, rather than on the principles and key issues that develop media literacy.

![Graph 1](image)

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study, but the sample is insufficient to make such conclusions.

Since the chi-square ($\chi^2$) shows the value of 0.040, we consider the claim to be very important, but it is not to be interpreted as an improvement of media literacy in the study, but as the development of critical thinking among students and female students during their studies.

4.1.2 TWENTY FIRST CLAIM: IN DESIGNING AND CREATION OF MEDIA CONTENT I APPLY RHETORICAL AND/OR GRAPHIC KNOWLEDGE

In Graph 2, we see that there is a difference in the responses (attitudes) of first and final year students of Journalism at the Faculty of philosophy in Novi Sad. We see that almost a third of first year students responded with "I'm not sure", and exactly half of the final year students with "Basically true", which suggests that there is progress in media literacy during the study.

Graph 2, it is clear that the answers are fairly divided without major quantitative differences, while there is a noticeable grouping of responses "Mostly true" for final year students.

4.2 RESULTS using a sample SECOND AND FINAL YEAR PROGRAMME DIRECTOR AND MULTIMEDIA PRODUCTION IN AUDIO-VISUAL MEDIA ACADEMY OF ARTS IN NOVI SAD

Distribution of results shows that only one claim singles out, which is statistically significant for us, and that is the claim 33 (I analyze the media content in films by perceiving the style of film language).

4.2.1 THIRTY THIRD CLAIM: I ANALYZE MEDIA CONTENTS IN FILMS BY PERCEIVING THE FILM LANGUAGE STYLE

In Graph 3, we see that there is a difference in the responses (attitudes) of first and final year students of Journalism at the University of Novi Sad. Half of the first year students responded with "Basically true", and three thirds of final years studied responded "Completely true", which obviously suggests that there is progress in media literacy during the study.

We assume that most students during their studies learn most about film and film language, that by the film analysis they improve their skills and also build their own opinion, and studying helps them in it.

Given that the analyzed female and male students are from the study program Journalism, it seems that the rhetoric of knowledge is more represented in their curriculum. On the other hand, this generation has been growing up with the expansion of new media and is more informed in the form and nature, and it is thus possible to describe the distribution of the existing results. It is very important that with this we prove that the students during their studies learn to construct media messages and that they use and improve the skills and knowledge learned during their studies.

It is evident that significant progress is media literacy exists, and the value of chi-square ($\chi^2$), which is 0.047, proves the significance.
4.3. THE RESULTS ON A SAMPLE OF RESPONDENTS OF FIRST AND FINAL YEARS OF STUDY PROGRAM MANAGEMENT IN MEDIA AT THE FACULTY FOR MANAGEMENT IN NOVI SAD

Distribution of results shows that two statements are singled out which are statistically significant, although not are the only important for us, and those are claim 5 (I think that most media messages are sent to ensure a profit or power.) and claim 33 (I analyze the media content in films by perceiving the film language style).

4.3.1 CLAIM FIFTH: I THINK THAT MOST MEDIA MESSAGES ARE SENT TO ENSURE PROFIT OR POWER

In Graph 5, we see that there is a difference in the responses (attitudes) of first and final year students of The Faculty for Management - F@M in Sremski Karlovci. We see that half of first-year students responded "Completely true", whereas half of final year students responded "Basically true", which does not specifically indicate the progress of media literacy during the study, but it can be interpreted as the development of critical thinking among students during the study.

We note that the students in the first year already are familiar with the basic principles of media literacy and that the information is "fresh" to them.

Students have gained a good basis for further studies. The difference in the responses is also a confirmation of the level of media literacy. Specifically, at the students in the final year there is a critical questioning, they have developed a critical attitude towards claims imposed by the media, and thus the claims that we have offered. Critical questioning is one of the basic principles and the most valuable principle of media literacy in general. Of course, it would be wrong to claim that it is the only reason for such distribution of results.

Chi-square ($\chi^2$) clearly shows the value of 0.048, indicating that there is a significant difference in the attitudes of these two groups of respondents.

4.2.1 THIRTY THIRD CLAIM: I ANALYZE MEDIA CONTENTS IN FILMS BY PERCEIVING THE FILM LANGUAGE STYLE

In Graph 6, we see that there is a difference in the responses (attitudes) of first and final year students of The Faculty for Management - F@M in Sremski Karlovci.

Distribution of the results indicates that half of first-year students responded "Basically true", while half of the final year students responded "I'm not sure", and we can not confirm the visible improvement in this sphere of media literacy during the study.

Students at the faculty do not handle styles of film language, or handle them but to a less extent, because students are not closely molded to one area of the media (such as the students of the Academy of Arts are profiled in the field of film), but study them in broader manner. They gain general knowledge on media.

We assume that the students study and perfect the styles of film language due to the personal interests and that the study does not affect them.

chi-square ($\chi^2$) clearly shows the value of 0.005, indicating that there is a significant difference in the attitudes of these two groups of respondents.
4.4. ANSWERS’ DISTRIBUTION IN RELATION TO THE CENTRAL CONCEPTS SPECIFICUM: KNOWLEDGE, KNOWLEDGE IMPLEMENTATION, UNDERSTANDING THE CONCEPTS AND USAGE OF TOOLS FOR CREATION OF MEDIA CONTENT

In order to discover at which particular faculty and in what sphere of media literacy have the interviewed students adopted the most of the media literacy principles, we have divided the claims in the survey into four groups:

1. Group of claims by which we check the knowledge of the students, i.e. theoretical knowledge of all the five central concepts and the five key issues of media literacy - refers to claims 1, 2, 3, 4 and 5.

2. Group of claims by which we check the application of knowledge, i.e. the use of Five central concepts and five key questions of media literacy - refers to claims 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19.

3. Group of claims by which we check understanding of the basic principles of media literacy of students surveyed, i.e. the extent to which the tested students are active consumers of media contents - refers to claims 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39 and 40.

4. Group of claims by which we check the usage of tools for creating media content at the tested students, i.e. the extent to which students are willing to engage in the design or construction of media messages - relating to claims 20, 21, 22, 23 and 24.

In the analysis that follows we will use the terms "positive" and "negative" responses, to facilitate communication and display of the distribution of results. By "positive" responses we consider the answers that show a higher level of knowledge of media literacy: “Basically true” and “Completely true”. By "negative" responses we consider the answers that show a lower level of media literacy: “Completely incorrect”, “Basically incorrect” and “I am not sure”.

4.1 THE RESULTS OF THE FIRST GROUP OF CLAIMS RELATED TO KNOWLEDGE

Graph 7 shows the responses of students and female students from all three analyzes involved faculties in relation to the first claim. We have obtained positive answers from:

1. 54.9% of male and female students from the Faculty of Philosophy (41.5% answered "Basically true", while 13.4% of respondents answered "Completely true"),

2. 81.4% of male and female students from the Academy of Art (33.3% answered "Basically true", while 48.1% of respondents answered "Completely true"),

3. 95.4% of male and female students from the Faculty of Management (38.6% answered "Basically true", while 56.8% of respondents answered "Completely true"),

Graph 8 shows the responses of students and female students from all three analyzes involved faculties in relation to the second claim

Graph 8 shows the responses of students and female students from all three analyzes involved faculties in relation to the second claim. Positive answers have been provided by:

1. 64.6% of the tested students from the Faculty of Philosophy (50% answered "Basically true", while 14.6% of respondents answered "Completely true"),

2. 96.2% of male and female students from the Academy of Art (48.1% answered "Basically true", while 48.1% of respondents answered "Completely true"),

3. 77.8% of male and female students from the Faculty of Management (47.1% answered "Basically true", while 30.7% of respondents answered "Completely true"),

Graph 9 shows the responses of students and female students from all three analyzes involved faculties in relation to the third claim. Positive answers have been provided by:

1. 91.5% of male and female students from the Faculty of Philosophy (24.4% answered "Basically true", while 67.1% of respondents answered "Completely true"),

2. 81.4% of male and female students from the Academy of Art (33.3% answered "Basically true", while 48.1% of respondents answered "Completely true"),

3. 95.4% of male and female students from the Faculty of Management (38.6% answered "Basically true", while 56.8% of respondents answered "Completely true"),
2. 85.2% of male and female students from the Academy of Art (33.3% answered "Basically true", while 51.9% of respondents answered "Completely true"),

3. 97.7% of male and female students from the Faculty of Management (18.2% answered "Basically true", while 79.5% of respondents answered "Completely true"),

Graph 9: The results of responses of the entire sample of respondents in relation to the third claim

Graph 10: The results of responses of the entire sample of respondents in relation to the forth claim

Graph 11 shows the responses of students and female students from all three analyzes involved faculties in relation to the fifth claim. Positive answers have been provided by:

1. 63.5% of male and female students from the Faculty of Philosophy (53.7% answered "Basically true", while 9.8% of respondents answered "Completely true"),

2. 77.8% of male and female students from the Academy of Art (63% answered "Basically true", while 14.8% of respondents answered "Completely true"),

3. 68.2% of male and female students from the Faculty of Management (36.8% answered "Basically true", while 31.8% of respondents answered "Completely true"),

Graph 11: The results of responses of the entire sample of respondents in relation to the fifth claim

Distribution of the results shows that the highest percentage of students from the Faculty of Management knows first ("All media messages are constructed") and third ("The same media message is differently perceived by different people") central concept of media literacy. The highest percentage of students from the Academy of Arts knows the second ("Media messages are constructed with the help of the media language having its own rules"), fourth ("Media messages have embedded attitudes and views of the world") and fifth ("Most media messages are sent to ensure a profit or power") central concept. Unexpectedly, but the distribution of results indicates that respondents from the Faculty of Philosophy are not pointing out in knowing a single mentioned central concept in relation to the other two faculties analyzed, but the majority are familiar with all the concepts which is very important and for our work a very useful cognition. It is about future journalists, thus the first ones on the line of reporting and the first link of the media and media users, and it is of paramount importance that they are familiar with all concepts, although not dominant over the other two faculties.

We also represent the view that for the future managers in the media is of extreme importance to know all the concepts and principles, as they are the invisible, but no less important line in the user – media relationship.
CLAIMS RELATED TO KNOWLEDGE

4.2 THE RESULTS OF THE SECOND GROUP OF CLAIMS RELATED TO KNOWLEDGE IMPLEMENTATION

Differences in knowledge are not great and we observe a high degree of knowledge of these concepts, however, if we look at the average response of all five claims, we find that the level of knowledge of the five central concepts and the five key questions of media literacy is the most obvious at the respondents from the Academy of Arts (86.6% positive responses), followed by students and female students from the Faculty of Management (84.18% positive responses), and third of the respondents at the Faculty of Philosophy (68.5% positive responses).

Based on the results obtained, we find that respondents from the Academy of Arts have most deeply handled the principles from the perspective of certain specific media languages - in our case the film language and its rules, as well as from the perspective of the person who creates the media message and is trying to tell a story (the viewpoint of the director, cameraman, actor, playwright, ...) in order to make profits (producer’s viewpoint).

The respondents from the Faculty of Management have the most deeply dealt with these principles in the general media viewpoint. They know the basic rules and are aware that the same message causes different reactions to different people which is from the viewpoint management of the utmost importance. Given that the difference in the average number of positive answers of respondents from the Faculty of Management and the Academy of Arts is not large, we conclude that students from the Faculty of Management, best know these principles, as they have the widest knowledge.

Based on this, we conclude that the students from the Faculty of Management during the studies have advanced the most in the first group of claims - in knowledge, i.e. in knowledge on Five central concepts and the five key questions of media literacy.

As we compared the fourteen claims, for the purpose of clarity, the results of positive responses in percentages are shown in tables.

Table 2: The results of responses of the entire sample of respondents in relation to the group of claims relating to the application of knowledge

In Table 2 we see that the highest percentage of positive responses is from the students and female students from the Academy of Arts in Novi Sad. Their responses were mostly compared in relation to the eight claims (claims 7, 8, 11, 12, 13, 14, 17 and 18), the students of the Faculty of Management stand out compared to four claims (claims 6, 10, 16 and 19), while students from the Faculty of Philosophy stand out in relation to the two claims (claims 9 and 15).

Claims 7, 8, 11, 12, 13, 14 and 17 are based on the key issues of the first, second, fourth and fifth central concept, and relate to their application. Respondents from the Academy of Arts in percentage of positive responses are the highest regarding these claims, but also in the claim 18 ("I think that with sufficiently argumented critical stance I value artistic expression in media production.") which is not so closely associated with the key questions of media literacy, but specifically refers to the appreciation of art and in this claim the biggest difference in the responses of the analyzed group of students is noticed (about 20% less students gave positive responses from the other two faculties). This proves that the Academy of Fine Arts dealt much deeper with the artistic sphere of (multi)media literacy.

The claim 10 specifically refers to the key question of the third central concept of media literacy, and given that the students of the Faculty of Management in percentage gave the most positive responses to this claim, we can say that they mostly pay attention to the diversity of people and their desire to understand the same message differently, i.e. each in their own way, and from the one self characteristic angle - which is an outstanding result and one of the most important things for the future managers in the media. The claim 16 specifically relates to the crucial question of the fifth central concept and we note that the highest percentage of group of respondents thinks about the motive of sending media content. The claim 6 ("I distinguish the use of different media language and media of expression for different purposes.") is not as closely related to just one key question; it touches on all the concepts and certainly involves understanding and subsequent application of the principles of media. Interestingly, the students of the Faculty of Management proportionally know the most different media languages, and the reason for that is the fact that during the study they learn most widely on the media and become familiar with all the media languages in particular. The claim 19 ("I consume media contents of various types everyday, and I think that I become more media literate in that way.") was designed to test the general application of the central concepts of media literacy. In addition, by this claim we also check the awareness of students that by consuming media content and analyzing the media...
content they become more media literate. The impression is that once again we find the information that students and female students of Media at the Faculty of Management the most widely learn about media literacy, and so they have the broadest insight into the true meaning of media literacy.

The students of the Faculty of Philosophy in Novi Sad gave the highest percentage of responses to the two claims: 9 and 15 that stand for the attitudes important for general usage of media literacy. The claim 9 ("I decide about what I like or dislike in relation to a particular media message on my own.") is primarily designed with the aim to check whether students decode media content through their own discourse, and here we see that students from the Faculty of Philosophy are the most certain in their attitudes. Completely uncritical attitude and to our research very interesting is the fact that respondents from the Faculty of Philosophy were the only ones that give 100% of positive responses to a claim (claim 9). It is obvious that they believe that they are least affected by the attitudes of other people and believe that for this phenomenon the study at the university is responsible to some extent, but more the fact that our respondents are just meeting with the with the real world of media. We must not lose sight of the fact that it is about the male and female students that are yet to check their views in public. Distribution of the results indicates that the same respondents gave the highest positive responses to claim 15 ("If I take an interest in the specific media content or underestimate it, I am seeking more answers in other places."). This tells us that journalism students are taught to look for new information and to check them, which is very important for the development of media literacy levels, but it is the result of a narrow profiling which is a characteristic of this study group, because the output profile is closely related to journalism.

If you look at the percentages, the students of the Academy of Arts in Novi Sad, the most apply the Five central concepts, but we can not make such a conclusion just based on the average.

What can we conclude from the above results is that all groups of students apply these principles, but each group to a greater extent applies what their output profile requires from them. The respondents from the Faculty of Philosophy are mostly oriented to journalism (they believe the most in their views, a Philosophy are mostly oriented to journalism (they requires from them. The respondents from the Faculty of Philosophy are mostly oriented to journalism (they require from them. The respondents from the Faculty of Philosophy are mostly oriented to journalism (they require from them.

Given that claims 25 and 26 are related to the interpretation of advertising media messages, that the claim 27 is related to the radio, that claims 28 and 29 refer to the print media, claims 30, 31 and 32 relating to television, claims 33, 34 and 35 relate to the film, and claims 36, 37, 38, 39 and 40 are connected to the Internet, the results can be interpreted as follows:

1. Students of the Faculty of Philosophy are more focused on understanding and thinking about the commercial messages and print media, and less interested in film. It is interesting that they point out in the positive responses to the statement 36 ("I value the media contents on the Internet by checking them through traditional media."), although only about 30% of the respondents gave the positive response.

2. Students from the Academy of Arts are mostly oriented to the field of film and are the most notable in the area of Internet and new media. The interesting thing is that this group of students gave the highest percentage of positive responses to the claim 28 ("I

### Table 3: The results of responses of the entire sample of respondents in relation to the group of claims relating to the understanding of media principles

As we compared the sixteen claims, for the purpose of clarity, the results of positive responses in percentages are shown in tables.

In Table 3 we see that the highest percentage of positive responses is from the students and female students from the Academy of Arts in Novi Sad. Their responses were mostly compared in relation to the eight claims (claims 29, 32, 33, 35, 37, 38, 39 and 40), the students of the Faculty of Philosophy stand out compared to four claims (claims 26, 28, 34 and 36), while students from the Faculty of Management stand out in relation to the four claims (claims 25, 27, 30 and 31).

<table>
<thead>
<tr>
<th>Claim</th>
<th>Faculty of Philosophy</th>
<th>Academy of Arts</th>
<th>Faculty of Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>T25</td>
<td>52.5%</td>
<td>55.5%</td>
<td>70.4%</td>
</tr>
<tr>
<td>T26</td>
<td>69.5%</td>
<td>51.8%</td>
<td>63.7%</td>
</tr>
<tr>
<td>T27</td>
<td>45.1%</td>
<td>33.3%</td>
<td>61.3%</td>
</tr>
<tr>
<td>T28</td>
<td>85.4%</td>
<td>77.7%</td>
<td>77.3%</td>
</tr>
<tr>
<td>T29</td>
<td>71.9%</td>
<td>81.4%</td>
<td>70.4%</td>
</tr>
<tr>
<td>T30</td>
<td>75.6%</td>
<td>74%</td>
<td>79.5%</td>
</tr>
<tr>
<td>T31</td>
<td>53.6%</td>
<td>48.1%</td>
<td>61.3%</td>
</tr>
<tr>
<td>T32</td>
<td>73.2%</td>
<td>85.2%</td>
<td>75%</td>
</tr>
<tr>
<td>T33</td>
<td>53.7%</td>
<td>88.8%</td>
<td>59.1%</td>
</tr>
<tr>
<td>T34</td>
<td>68.3%</td>
<td>59.2%</td>
<td>61.4%</td>
</tr>
<tr>
<td>T35</td>
<td>29.2%</td>
<td>37%</td>
<td>36.4%</td>
</tr>
<tr>
<td>T36</td>
<td>30.5%</td>
<td>29.6%</td>
<td>25%</td>
</tr>
<tr>
<td>T37</td>
<td>36.6%</td>
<td>40.7%</td>
<td>36.4%</td>
</tr>
<tr>
<td>T38</td>
<td>61%</td>
<td>74%</td>
<td>61.3%</td>
</tr>
<tr>
<td>T39</td>
<td>47.6%</td>
<td>59.2%</td>
<td>56.8%</td>
</tr>
<tr>
<td>T40</td>
<td>69.5%</td>
<td>77.7%</td>
<td>75%</td>
</tr>
<tr>
<td>average</td>
<td>57.7%</td>
<td>60.9%</td>
<td>58.4%</td>
</tr>
</tbody>
</table>
value the contents in the print media on the basis of the extent of informative texts in them."). They value the media contents on TV by analyzing the context in which the media messages is settled in.

3. The respondents from the Faculty of Management - F@M: are more oriented to understanding and thinking about advertising messages and media contents on television, while they do not point out at all in the field of understanding the Internet. The interesting thing is that this group of students gave the highest percentage of positive responses to the claim 27 ("I value the contents on the radio on the basis of the level of entertainment they provide me with."). In contrast to male and female students from the Academy of Arts, this group of students to a greater extent evaluates media messages on television in relation to the timing or block in which it was placed, and the way in which TV content is packaged.

We conclude that the groups of students have relatively uniformly responded to this set of questions, but also that they significantly differ in their interests and attitudes. The impression is that all students know, understand and apply the principles of media literacy, but they have different interests and are facing multiple output profiles of their programs of study (students from the Faculty of Philosophy of journalism and the print media to a greater extent, television and film to a lesser extent, students from the Academy of Arts in Novi Sad gave the most positive responses, students from the Faculty of Management, traditional media, and to a lesser extent, television and film to a lesser extent - print media , students from the Faculty of Philosophy of journalism and the print media to a greater extent, the usage of tools for creating media contents are facing multiple output profiles in relation to the group of claims relating to the principles of media literacy). The answer is expected, because the respondents from the Academy of Arts in studio learn to solve specific tasks with the help of special tools, so that they are professionally developing in that way (mostly in one area). Since a film project includes these five claims, we assume that this group of male and female students often creates media content; therefore, the most deeply deals with ways to create (multi)media contents.

5. CONFIRMATION OF THE HYPOTHESES

In relation to the questionnaire placed and in relation to the assigned tasks of theoretical and empirical research, the paper noted that the first five claims (claims 1, 2, 3, 4 and 5) are constructed in relation to the five central concepts of media literacy, in order to verify whether respondents know these concepts. As compared to the results of the total sample, the first five questions have the greatest number of answers "Mostly true" and "Completely true" with quite different levels of knowledge (T1 - more than two-thirds, T2 - more than half, T3 - more than two-thirds, T4 - more than half, and T5 - more than half of the positive responses), we can confirm that the first auxiliary hypothesis H2, which assumes that there is a high level of knowledge of five central concepts and the five key questions of media literacy among students of the first and final years of the study analyzed the three study programs in the field of media faculties in Novi Sad, is confirmed. More than half of the respondents knew five central concepts, i.e. about half of the respondents answered positively ("Mostly true" and "Completely true").

A question is posed: "What does the high level of knowledge of these concepts imply?" In the paper the limit of high and low level of knowledge of the principles of media was not given, and the calculation of the mean would not show us anything significant. Given that the analyzed students of the media are familiar with these principles, that in any case know the principles much better than most of their peers (or Serbian citizens in general), that understand the concepts and know them to a greater or lesser extent, we believe that here, however, it is about the high level of knowledge of the five central concepts and the five key questions of media literacy.

In relation to the questionnaire placed and in relation to the assigned tasks of the research, the paper noted that the claims 6, 7, 8, 10, 11, 12, 13 and 14 are constructed in relation to the five key and auxiliary questions of central concepts of media literacy, in order to verify whether respondents apply these concepts. As compared to the total sample results in claims 6, 7, 8, 10, 11, 12, 13 and 14, on average, more than half of respondents did give positive answers (T6, T8, T10, T11, T13 and T14 - more than two-thirds, T7 and T12 - more

Table 4: The results of responses of the entire sample of respondents in relation to the group of claims relating to the usage of tools for creating media contents

<table>
<thead>
<tr>
<th></th>
<th>Faculty of Philosophy</th>
<th>Academy of Arts</th>
<th>Faculty of Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>T20</td>
<td>33%</td>
<td>40,7%</td>
<td>38,6%</td>
</tr>
<tr>
<td>T21</td>
<td>54,8%</td>
<td>74%</td>
<td>53,3%</td>
</tr>
<tr>
<td>T22</td>
<td>46,4%</td>
<td>85,2%</td>
<td>65,9%</td>
</tr>
<tr>
<td>T23</td>
<td>42,7%</td>
<td>85,2%</td>
<td>56,8%</td>
</tr>
<tr>
<td>T24</td>
<td>15,9%</td>
<td>40,7%</td>
<td>25%</td>
</tr>
<tr>
<td>average</td>
<td>38,6%</td>
<td>65,2%</td>
<td>47,9%</td>
</tr>
</tbody>
</table>

In relation to the Table 4, we see that students from the Academy of Arts in Novi Sad gave the most positive responses in relation to all five claims. Accordingly, we conclude that they are the most prepared for usage of tools for creating media content.

These five issues include the creation of (multi)media messages on the Internet with the help of appropriate media tools customized to the Internet as a new medium (software ones - such as Photoshop, Soundforge, Adobe Premiere, etc., or tangible ones - such as cameras, graphic drawing, photography, etc.) and skills.
than half), we can say that the second auxiliary hypothesis H3, which assumes that there is a high level of implementation of the five central five key questions of media literacy among the students of the first and final years of study at three analyzed study programs in the field of media at the faculties in Novi Sad is confirmed.

The biggest problem is how to use the fourth central principles of media literacy (Media messages have embedded attitudes and views of the world), where it is proven that the students are generally more uncertain than fully confident (T12 - more responses "Mainly incorrect" and "I'm not sure" than "Completely true"; T13 and T14 - more answers "I'm not sure" than "Completely true" - on average about a quarter of respondents were unsure). We can say that the respondents apply these principles, but to a lesser extent than to the extent they know these principles. According to the research, analyzed in relation to each faculty separately and to the analyzed groups of claims, in accordance with the values of chi-square ($\chi^2$) that show significant or less significant differences, we can confirm the third auxiliary hypothesis H4, which assumes that there are differences in the knowledge and application of five central concepts and the five key issues of media literacy among students analyzed the various study programs in Novi Sad.

All groups of respondents apply these principles, but each group to a greater extent applies what their output profile requires them to. The respondents from the Faculty of Philosophy are mostly oriented to journalism (they believe the most in their views, are looking for information the most and check information), and students and female students at the Academy of Arts are facing the most artistic field of media literacy (they pay the attention the most to the context of a message or story in the (multi)media content, most learn about the language of film and orient the thoughts on making profits through the media), while respondents from the Faculty of Management - F@M are oriented the most to common media knowledge (knowledge of the most diverse media languages, most aware of the mentality of the people who surround them and aware that by the daily consumption and analyzing various media contents they are becoming more media literate).

In accordance with the fact that we are guided by the fact that they are active consumers of media those that are focused on media content and that they check the information, the claims 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38 and 39 are set with the aim of checking whether the respondents were active consumers of media content in different types of media messages. Most students at these claims gave positive responses (T27 - more than one-third; T39 - more than half, T33 and T34 - nearly two-thirds, T28, T29, T30, T31, T32 and T38 - more than two-thirds), but the couple's claim gave negative responses (T35 and T37 - half; T36 - one-third). This means that the students are most active in the consumption of traditional media (radio, print media, television and film); while new media (the Internet) are partly less frequently visited by students or they are thinking less about them, that is, analyze them less. On the other hand information appeared that students do not verify the information to a great extent they have obtained through the Internet via the traditional media. The impression is that they believe more to new media. Since it was confirmed that the tested students are active consumers of traditional media to a greater extent, and of new media to a lesser extent, we can say that the fourth auxiliary hypothesis H5, by which we assume that the tested students active consumers of media content, is partially confirmed.

In relation to the questionnaire placed and in relation to the assigned tasks of the research, the paper noted that the claims 19, 20, 21, 22, 23, 24 and 40 are constructed for the purpose of us checking whether the respondents construct their own media messages in different sphere of (multi) media. The majority of respondents in this group gave positive answers questions (T21, T22, T23, T40 - half; T19 - two-thirds), but on the two claims it did not. The responses to the twentieth assertion (I daily construct media contents participating in the discussions on the Internet and I think that thus I also become more media literate,) show that respondents are completely insecure (one third replied, "I'm not sure", while the completely opposite answers "Completely false" and "Completely true" are equal. That again indicates that respondents do not use the Internet for the purpose of being informed or that at least not in so great extent analyze the information. The responses to the twenty fourth claim (in the design and creation of media content I apply VIPS (Visibility, Identity, Promise, Single-mindedness strategy.) show completely no knowledge of this strategy (one-third responded "Completely false", while the second third responded "I'm not sure") which is one of the most popular that they should be using at the construction of the media content. We assume that even though they are not familiar with this strategy, they should, at least subconsciously, focus on the elements of this strategy in the construction of (multi-) media contents.

We believe that these two claims do not contradict the fact that tested students are not constructing their own media messages, and therefore we can confirm the fifth auxiliary hypothesis H6, by which we assume that the students construct their own media content.

In relation to the questionnaire placed and in relation to the assigned tasks of the research, the paper noted that the claims 9, 15, 16, 17, 18, 25 and 26 are constructed for the purpose of us checking whether the respondents decode media messages by using their own discourses. Most students gave positive responses to these claims (T9, T25 and T26 - more than a half, T15, T17 and T18 - more than two-thirds), but one claim indicates uncertainty (T16 - almost one-third of the respondents answered with "Not sure").

Sixteenth claim (I am looking for a reason why the media message came to me surrounded by the very content) is closely related to the core issue of the fifth central concept of "Why was this message sent?", and can be classified into a group that represents the application of the central
concepts, which has already been confirmed. On the other hand, we believe that any media literate person should be looking for the answers behind the key questions of media literacy. The answer “I’m not sure” can be interpreted as a negative, but it can be also interpreted as an individual choice depending on their personal interests, which again leads to decoding messages with the help of their own discourse.

We believe that avoiding decoding media contents that come to us as insipid to us personally, are not at the high level of media literacy, but are a matter of personal choice. Therefore, we affirm the sixth auxiliary hypotheses H7, by which we assume that students decode media messages with their own discourse.

Distribution of research results using a sample of respondents of the Faculty of Philosophy in Novi Sad, as well as the results obtained in the group of claims speaks that chi-square ($\chi^2$) showed significant improvement (0.047) during the study compared to the twenty-first claim (in the design and creation of media content I apply rhetorical and/or graphic knowledge), while this is not the case with the Academy of Arts and the Faculty of Management.

Students of the Faculty of Philosophy are more focused on understanding and thinking about the commercial messages and print media, and less interested in film. It is interesting to point out that the positive response to the statement 36 (“I value the media contents on the Internet by checking them through traditional media.”), and the most positive responses are given in relation to claim 15 (“If you get interested in a particular media content or underestimate it, I am seeking more answers in other places.”), made by students of journalism, proves that students are taught to look for new information and to check, which is, among other things, the characteristic of the narrow profile is of this group, because output profile is closely related to journalism.

All the above facts indicate that the seventh auxiliary hypothesis H8, by which we assume that the tested students of the Faculty of Philosophy, in relation to the other two colleges, during the studying have advanced more in the field of print media, i.e. rhetorical and journalistic skills, is confirmed.

Distribution of research results using a sample from the Academy of Arts in Novi Sad says that chi-square ($\chi^2$) shows significant improvement (0.031) during the study compared to the thirty third claim (the content in the films which can be seen by analyzing the style of film language.), while it not the case with the Faculty of Philosophy and Faculty of Management.

Results indicate that the students from the Academy of Arts are oriented the most to artistic field of media literacy (they pay most attention to the context of a message or story in the (multi) media content, they study the most of the language of film and are oriented to thinking of making profits through the media).

The respondents from the Academy of Arts during the studies learn to solve specific tasks with the help of special tools, so that they are professionally developing in that way (mostly in one area). This group of students usually creates media content, therefore, is deeply concerned with ways of creating (multi) media contents.

In relation to the displayed results of the eighth auxiliary hypothesis H9, by which we assume that the tested students at the Academy of Arts, in relation to the other two faculties, during the studies have advanced more in the field of film and film language, we affirm.

In relation to the results shown on a sample of respondents from the Faculty of Management - F@M in Sremski Karlovci, we note that the chi-square ($\chi^2$) does not show significant improvement (0.942) at nineteenth claim (I daily consume media content of various types, and so I think that thus I become more media literate.), but by comparing the graphs, we can see that this group of students (first and final year students) is the most active consumer of different types of media messages.
The impression is that the students from the Faculty of Management have dealt the deepest with the media principles from the general media viewpoint. They know the basic rules and are aware that the same message causes different reactions to different people. This group of students by percentage thinks the most on the motive of sending media content. They expressed by percentage know the most different media languages, and the reason for that is the fact that during the study they learn most widely on the media and become familiar with all the media languages in particular. Students of Media from the Faculty of Management learn widest about media literacy and have the greatest insight into true meaning of media literacy, and that is proven by the result that by percentage show that that they possess the most knowledge of media concepts.

The above-mentioned facts show that ninth additional hypothesis H10, by which we assume that the interviewed students from the Faculty of Management - F@M, compared to the other two faculties, during the study have advanced more in the field of general knowledge through the media and are active consumers of different types media messages, is confirmed.

GENERAL HYPOTHESES OF THE RESEARCH:

Given that the auxiliary hypotheses H8, H9 and H10, which represent important progress in the study of media literacy for each faculty analyzed are separately confirmed, we conclude that the advancement in media literacy during the study exists. The progress is greater or lesser, that is statistically more or less significant, but nevertheless in most cases it exists.

Each study program educates students against the output profile and in those areas students have advanced the most (students from the Faculty of Philosophy in the field of journalism and the print media, students from the Academy of Arts in Novi Sad are the most numerous part of our research corps, the male and female students of Journalism from the Faculty of Philosophy in Novi Sad are progressing well on paths of media literacy, media, and learn about their nature, but are directed toward journalism, and to what will be important for the continuation of life on the job - in the profession.

The tested students of the Academy of Arts in Novi Sad, are the lowest profiled part of the respondents in our research corpus. They are focused on only one area - the area of multimedia productions, even those whose profession requires the broadest picture of the (multi-) media. It is obvious that this group of students is the most oriented to specific tasks and techniques, which aim to audio-visual design (the product of the entertainment industry), rather than facing the media in general, and thus the aspects of media literacy that we examined.

It is obvious that male and female students from the Faculty of Management - F@M in Sremski Karlovići have the widest and most comprehensive picture of the media. In relation to others from the research corpus, they are the most active and the most questioning consumers of media content from all three groups of students. Our conclusion is that the basic principles of media that they learn in the first year, is later perfected by complex forms of media and thus improve their knowledge of media literacy, which have practically become part of their tacit knowledge, at least according to the findings we obtained in our analysis.

By the research we have came to the unexpected information that speaks that the respondents less analyze new subjects than traditional media. In addition to the alarm of the students, this information is analyzed is an alarm for the analyzed study programs. An that for at least two reasons: we live in the era of new media and do not give them the attention they require and more, students are obviously in relation to new media completely passive consumers. Students do not have the need to check the information from the Internet through traditional media.

6. CONCLUSION

The tested students and female students of media of the first (second) and final year of study from the analyzed faculties in Novi Sad and Sremski know the principles of media literacy, but not to the extent that they could correctly apply them. This research shows that media literacy among rules among surveyed students of media at the analyzed faculties, which can be interpreted as the beginning of the development of media literacy in our country. The respondents far better know and apply the principles of media in relation to the rest of the population in our country, but that knowledge will not be enough to avoid manipulation of the (multi) media messages in a new age, an age of media literacy.

The most numerous part of our research corps, the male and female students of Journalism from the Faculty of Philosophy in Novi Sad are progressing well on paths of media literacy, media, and learn about their nature, but are directed toward journalism, and to what will be important for the continuation of life on the job - in the profession.

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More new media in the curriculum, on the exercises, more laboratories and more work with and through new media will contribute that the students are really made more media literate. For now, the fact is that in our country is dominated by traditional electronic media that live their new multimedia life cycle. However, the fact is that now 50% of households in Serbia have a computer and the Internet, in Vojvodina, the percentage is even higher, which indicates that it is necessary that higher education institutions are more turned to new media.

Developing media literacy in our country is a necessary and inevitable process. The fact that a new era, a time in which we now live and will require very media literate managers, writers, producers, because that will be their audience that is all thanks to the new media more questioned, critically oriented more media aware. On the other hand, media literate persons should not be exclusively male and female students of media, but also the rest of the population. To make this happen, it is necessary to introduce media education in primary and secondary schools, even as a single subject - Media Literacy. It would be the first step on the road to media literacy.

It is important that we read media messages, it is important that we understand them. It is important to know why some of the information reaching us, it is important that we understand them. It would be the first step on the road to media literacy. That is the only way to survive in the 21st century, the century of media literacy.

7. REFERENCES


tip rada: stručni str. 152-162


1. INTRODUCTION

Implementation of the changes is in the function of numerous social and personal factors, and the very energy for change is directly dependent on the current unsatisfactory situation, level of knowledge about future activities and the clear vision of the results of change. Dissatisfaction with the status quo will originate the needed energy for change only if there is a sufficient level of knowledge and information on what can and should be done. The crisis is one of the necessary indicators of change, but not the most reliable one. The crisis is considered to be a delayed indicator of the need for change. Is the expression of resistance to change in organizational terms the same as in the personal sense of fear?

In organizational and in personal terms, changes can be planned or unplanned. Planned changes occur as a result and a consequence of a series of planned activities that happen in a particular order and are carried out with a purpose. Unplanned changes occur without a plan and without a clearly recognized reason, so their consequences cannot be predicted with certainty. From the individual standpoint, understanding the causes of the changes ranges from environmental determinism, through the so-called soft determinism, to voluntarism, or at least, limited voluntarism that determines personal behavior. It is a known human need to control and manage changes and reduce uncertainty in unpredictable situations.

There are changes which cause improvement of the processes, functions and characteristics, and these are constructive changes, while there are other changes that worsen the current situation, and those are destructive changes. Destructive changes are characterized by psychological dependence in behavior and functioning, as well as withdrawal from reality to unreal and nonexistent worlds, avoidance of responsibility, lack of trust in other people, indifference and pessimism. Work attitude is negative, which is followed by the activation component, in terms of reduced work motivation, self-esteem and job-satisfaction. Progressive changes are characterized by orientation towards the future and long-term goals, as well as towards reality, rational observation and dealing with problems.

Change capital is the strength for implementation of effective change; it is created in organizational culture framework. On a personal level, change capital is related to an individual's capacity to design, define, and steer his/her own behavior in the direction of desired change. It is not only the motivation; it is a much more complex phenomenon. The organization builds its change capital each time it successfully implements the new change - big or small, transformational or developmental, individual or organizational. Through learning, an individual creates his/her own change capital, based on existing and possible experience. Philosophy of change is that true
Organizational strength comes from combining and applying financial, human and social capital, as well as its change capital, in order to accomplish its mission effectively. Successful organizations identify and invest in the aforementioned capital which strengthens their institutions and develops the satisfaction of their clients. When individual or organizational potentials are discussed, it is possible to distinguish financial capital, which means economic power, human capital, which is the potential of individuals, social capital, which refers to connections and change capital, which is an evolutionary ability of an individual or organization. Change capital enables organizations to be competitive, and individuals to develop.

Changes in people in an organization include changes of the way people behave while fulfilling organizational needs. Changes in an individual occur in the following ways: under the influence of the natural process of maturation and the influence of environmental factors. The person is also ready to change his/her own behaviors, beliefs and skills. One of the most significant features of humans is the disposition to change themselves and their environment.

Changes in people occur as a normal consequence of educational attainment, level of satisfaction of basic and other needs, as well as extension of the horizons and interests that occurs as a result of faster and better information flow, increasing mobility and the degree of personal and professional engagement, developing higher needs for self-actualization, continuous improvement, quality working conditions, and more.

**HUMAN CAPITAL**

Human capital can improve the organization's ability to sense changes in critical environmental variables that require changes in the organization’s activities. Organizations in the new economy are facing turbulent environments and strong competition and because the environments within which organizations exist are becoming increasingly complex and dynamic, the need for the development of alternative mechanisms for monitoring the environment becomes more important. Human capital certainly creates an ability to devise more effective strategies in response to environmental changes. It can affect organizations in two ways: first, in a static environment, higher levels of human capital should enable an organization to have productivity advantages relative to its competitors and second, under more dynamic and complex environments, the human capital pool can affect organizational effectiveness through increasing its capacity to adapt to particular environmental requirements. Human capital resources as valuable - in order for human capital resources to be a source of sustained competitive advantage, they must provide value to the firm. Thus, there is variance in individuals' contribution value to the firm and this argues that human capital can create value for the firm. In other words, different jobs require different types and levels of human capital thus people may contribute differently to the same job. Value may be created for an organization if individuals are matched with the proper job. Human capital resources as rare - resource must be rare if it is to be a source of sustained competitive advantage - high quality human resources are rare. Human capital may be normally distributed within the population, so individuals with superior human capital may be difficult and costly for organizations to locate and acquire. Human capital resources as inimitable - in order for a resource to be a source of a sustained competitive advantage, the resource must be inimitable. If the competitive advantage gained from having high quality human resources is easily imitated, then it is not possible for human resources to constitute a source of sustained competitive advantage.

Human capital represents human-based resources and capabilities within the organization, including knowledge, competencies, experience, skills, creativity, problem solving capacity, innovativeness, attitudes and intuition of employees (Kontić and Ćabrilović, 2009; Ćabrilović and Grubić-Nešić, 2012). It is an intangible asset, best thought of as a stock of knowledge, comprising education, information, and productive and innovative skills. That is achieved through investments in education, training, health, and informal knowledge transfers, so human capital theory suggests higher levels of human capital at the individual and aggregate levels should result in greater effectiveness (Becker, 1962). Human capital is defined as unit level knowledge, skills, and abilities used to produce a given set of outcomes (Hitt, Bierman, Shimizu, Kochhar, 2001). The conceptualization of human capital can be expanded to include unit aggregate personality and unit level service orientation (Ployhart, Weekley, Baughman, 2006; Barney, Wright, 1998). Based on these definitions, human capital can take many forms and has been operationalized in numerous ways. It can be an important source of sustained competitive advantage over which managers have control since the resource-based and knowledge-based views argue that employee knowledge (human capital) and its management (employment relationships) explain an organization’s innovative capability and competitiveness (Barney, Wright, 1998; Lopez, Cabrales, Perez-Luno, Vallecabrera, 2009).

**FEAR AS A CAPITAL**

Fear is an everyday phenomenon, which can be seen psychopathologically and psychologically, sociologically and anthropologically, religiously, and philosophically. Fear exists in plants and in animals, mainly related to a threat to life and the instinct of self-preservation. Fear is the primary emotion and its manifestation is reflected in the strong, unpleasant excitement, and it is the result of perception or expectation of danger. Every fear, conscious or unconscious, is a fear of something determined, or undetermined. The quality of fear depends on the personal constitutional immunity, the wealth of fantasy and intelligence, as well as the set of defense mechanisms, healthy or neurotic parent structure, the frequency of recurrence of frustration. Throughout history, fear has changed its expressive possibilities, and today it has qualitatively different content than before, although still
there are fears of the invisible forces of nature, disasters, earthquakes, floods, fire, which are very present. Besides the biological fear of jeopardizing life, the other main cause of the fear is the existential fear of freedom, fear of the unknown, of separation, abandonment, loneliness, loss of love, fear of rejection, of recognition, value or power loss, independence, of contempt, fear of oppression, economic problems or unsafe outcome of our work, responsibility for others, fear breaking the internal homogeneity of the family. Fear has long been perceived as one of the affective factors that influences people's attitude and behavior. Fear is “an unpleasant emotional state characterized by anticipation of pain or great distress and accompanied by heightened autonomic activity especially involving the nervous system...the state or habit of feeling agitation or dismay something that is the object of apprehension or alarm” (“Fear,” 2012). According to Kaylene (2012), fear is a result of evolution of a mechanism to protect humans from life-threatening situations. Kaylene further argues that fear is more powerful than reason, because survival is the most important for the human brain. In recent decades, a large number of studies had examined the problem of fear. Reduction of fear in contemporary therapeutic actions Fear is the basis of human behavior, which occurs when individuals perceive a potential threat, and often when it is estimated that they will not be able to cope with that threat. Also, fear represents one of the fastest-expanding sense, even when there is no reason for such expansion. The most common human reaction to the implementation of changes occurs in the domain of emotions and emotional reactions. Very often it is a negative emotion, and we do not know exactly what causes such experience. Fear is an emotion that often runs complete human behavior. The fears of the new and unknown are very usual as carriers of resistance to change in the field of personality.

Changes not only encourage large and animated redistribution of resources and power, which is quite disturbing itself, but, by definition, require changes of the paradigm that encourages members' basic assumptions of organizational nature. These assumptions define the domain of social reality and provide the way to resolve ambiguous events that are impossible to control. Members of the organization "invest emotionally" in these assumptions that shape their cognitive structures for finding and making sense. Causing this source of cognitive and emotional stability can be defined the same as an attack on core identity and, therefore, may initiate a strong defense mechanisms.

In situations where the change is seen as the opposite of the adopted core values, the negative impact of an individual can be stronger than the effects occurring due to the lack of cognitive understanding of the proposed changes. Counter-proposals provoke anger, fear or threat. If the threat is considered mild, the challengers of key identity are considered the major follies and are ignored. The observed disagreements about important things cause strong emotions and negative emotions expand much faster than positive. Individual, group and organizational levels are connected via bridgeable elements that create effects of low-level variables and are associated with high-level variables, in a situation where the micro and macro processes are treated equally. Connecting parallel models at organizational and individual levels provides two drafts: 1) emotional dynamics (reconciliation expressing sympathy and encouragement, which gives hope) and 2) dynamics of change (receptivity, mobilization and learning). Individuals and organizations which provide the emotional dynamics are receptive to change, effective in change mobilization, able to learn from the results of their initial change efforts, and, if necessary, ready to adjust their direction.

The emotional dynamics of the organization is a set of features related to the processes of operation and behavior of employees during the working process, which are specific to each organization, undergoing through a series of organizational routines and reflecting individual or group behaviors that cause particular emotional states that are suitable for changing. The same proposals equally characterize an 'emotionally intelligent' person and emotionally capable organization. (Grubić-Nešić, 2005)

The emotional dynamics at the individual level shapes emotional capacity at the organizational level by creating emotional states susceptible to emotionally intelligent behavior. Similarly, the dynamics of change is characterized by a process of personal adaptation to the individual level while, at the same time, numerous processes of individual adaptation shape the dynamics of change that affects the outcome of radical change at the organizational level.

At least two conditions for the effective implementation of emotional dynamics and dynamics of change in the corporate level are required: compatible objectives and harmonious integration. It is likely that in a particular situation every individual or group from one large organization will not feel the same. As a result, different groups may exhibit different responses, needs, or defense mechanisms that need to be checked and focused on the requirements of a given situation.

With change as a repeated process linking three dynamic changes, each emotional dynamics that affects definite dynamics change will also have at least a small effect on the others. For example, since the learning dynamics change is associated with learning affinity, which is, in return, associated with the activity, the emotional dynamics of perception which affects receptivity will also influence the mobilization and learning dynamics change.

At the organizational level, the emotional experience is related to the quality of organizational efforts to identify the variety of emotions that arise during the change, to accept and include them, and to work on developing the high level of understanding. These behaviors may include organized activities, such as training of all members of the organization, particularly agents of change, to experience the same or different emotions in relation to the emotions of others, to be able to pass them on to others, and to
influence the emotional development of other members of the organization. Members of the organization can be trained to recognize the invisible signs and symbols among employees, to determine which emotions are expressed, but also to understand the perspective of behavior based on emotions in regards to the other members of the organization. Demonstration of care and concern for each other creates the foundation for trust, which is based on the attention and has been shown to lead to better work performance. Focusing on affective interpersonal signs is crucial for the quality of decision-making and implementation of solidarity among teammates.

These emotion-focused behaviors become important during radical changes, particularly for recipients of change, because it can be disturbing when it is introduced to us and pleasant when we introduce it. Agents of change, who have at least partially experienced emotions of the recipients, are more aware of the fact that their program for change can threaten psychological and social defense of change recipients. They are aware that painful or negative emotions can be projected in the form of negative transfer. Even the most honest change recipients may be ambivalent because of the tension that is caused by conflicted motivations and discomfort of their public presentation. Their sense of inner self-identity and ego integrity are being challenged. Emotional pain can become detrimental to the implementation of change, especially if it is denied, or if it is deemed irrelevant. Rejection of emotional states as nonexistent or unimportant can make change recipients not to participate substantially in implementing changes. When it becomes hidden, this resistance is no longer in control; deeds can be completely different from the presented intentions, and they will create serious obstacles to the progress of change. (Grubić-Nešić, 2005)

Work on emotional experience involves focusing on small details and creating senses of honesty, fairness, justice, and respect for those affected by the change. The organization may establish mechanisms to reduce tension, as well as structures for informal communication and for encouraging dialogue during uncertain times.

Emotional experience also becomes sensitive to the influences of time, speed and sequence of various change activities, so that adequate emotional equanimity is held among those influenced by the change. As a group of mutual respect and emotional unity, the members of the organization are likely to be more open among themselves, to listen more constructively about a proposed change. Experience has shown the following situation: the higher the level of emotional experience, the higher the acceptance of the proposed change. The more the proposed change is framed and accepted by the recipient as an addition or expansion of existing values, the easier it is to accept the proposed change; the better the continuity between the past and the future, the less radical the change is considered.

It is very difficult to initiate cultural change, considering the basic assumption as wrong. To display the system at least partially stable, it is important to keep some of the old values and persistently add the new ones. Communication between the agents of change and their goals builds the new meaning, gradually increasing the understanding and acceptance.

The change outcome is the most critical in the neutral zone, when individuals feel separated from other people and things from the past, and emotionally unconnected with the present. The second phase is characterized by disorientation and sense that the past is no longer appropriate and the future direction is not definite yet, as well as by the fear and disintegration. The time of emotional instability in the situation of changes should not be too long. The major changes of identity that are proposed can cause strong anxiety, especially if a new identity that makes sense is not proposed or checked. The higher the current importance of identity, the greater the emotion is. The more positively the members value the identity and the more they see the proposed changes meaningless, the more negative their reaction will be. To build the strong team spirit, they unwittingly trigger a fierce defense idealizing team members' qualities, while creating undesirable traits for people who are not a part of the team. People intend to avoid, reject and deny warnings that increase anxiety and fear by applying selective attention and various forms of information distortion; this is known as a defensive avoidance.

To keep the sense of identity, people need to feel a certain level of safety and comfort, achieved by strong relationship with symbolic items that connect the internal and external worlds of a person. In the same way, strong organizational culture allows its members to confirm their sense of identity and personal security inside it. The higher the level of identification in the organization, the lower the level of receptivity of any proposed change, which is believed to represent the threat to the organizational identity.

The Organization maintains order, partly through emotional management such as the management of fear, guilt or shame. This form of control can be possible in a slower, evolutionary change since it is possible to facilitate the first line change - accelerating the disappearance of doubts. However, collective learning, which is necessary during radical change, could be damaged by such control. One group of emotions is not so important itself as it is the way managers administer them. Managers who deny emotions in the workplace will also prevent new ideas to appear at the time when creativity and knowledge are most needed for the implementation of changes. Fear appeals can be defined as “persuasive messages that arouse fear by depicting a personally relevant and significant threat, followed by a description of feasible recommendations for deterring the threat” (Gore et al., 1998, p. 34). Fear appeals attack and threaten the individual’s well-being motivating him or her for action (increasing control over the situation - over the change process; Kaylene, 2012). Burke’s (2000) predictors of work holism (workaholism) also indicates
that fear can result in higher employee engagement in organizations. However, Welbourne’s positions on using fear as a motivational resource in change processes are not based on simple fear utilization and distribution among employees. She argues that appeals of fear “must be coupled with adequate sources of coping information in order to encourage employees to change their behavior in ways that meet the needs of the business”. The needs of business could only be fulfilled if immediate, deliberate and swift employee response to change exists in the organization (Welbourne, 1994, p. 5).

According to Ghilic-Micu and Stoica (2003) fear is the opposite of trust in the workplace. Research has shown that fear as an emotion oriented towards avoidance of the sources of fear indicates threat for organizations. This threat leads to reduction of exploitation tendencies in organizations (Welpe, Sporrle, Grichnik, Michl, & Audretsch, 2012). In terms of organizational changes, the decreased exploitation tendencies and exploitation means decreased tendencies, readiness and willingness of employees to change and therefore less implemented changes in organizations. According to Ciarlone (2006), “implementation deadlines and audits as well as high-profile prosecutions and litigations create a “culture of fear” in organizations that is counter-productive to standard corporate goals”. (Ryan & Oestreicht, 1991).

Organizations in processes of changes, whether evolitional or revolutional, incremental or transformational changes are seeking to minimize or eliminate fear among employees in order for the change processes to be successful. Fear has been traditionally marked as an attitude (variable) that effects in dysfunctional behavior. For that reason, the presence of fear in organizations is viewed by managers as a highly negative state, so their natural reactions are faced towards minimizing and eliminating this negative environment of fear. While an extreme amount of effort is taken in organizations to minimize the fear of change, Welbourne (1994) takes a highly radical position arguing that it is necessary to retain and communicate fear in order to effect rapid, long-lasting organizational transformations. According to her, fear has motivational potential for quick behavior change of employees. This behavior changes should result in positive adaptations to changes and transformations. In this way, fear in organizations can be used to support change efforts. Her theory is developed on the basis of the fear appeal theory (e.g., Kaylene, 2012). Fear appeals are widely recognized in marketing, communications, and public relations (e.g., Cho, 2006; Glock, Unz, & Kovacs, 2012; Hastings, Stead, & Webb, 2004; Keller & Block, 1996; LaTour, Snipes, & Bliss, 1996; Siu, 2010; Snipes, LaTour, & Bliss, 1999) and also in education (Putwain & Best, 2011; Putwain & Symes, 2011; Spear & Miller, 2012) as a tool for implementing fear in the process of influencing and changing the attitudes and behaviors of other people.

CONCLUSION

Fear largely determines our lives, whether it exists in the context of changes, whether it is part of everyday behavior. Identifying and measuring the quantity and quality of the fears in people is useful in terms of change managing and change leading, as well as in terms of developing and directing the desirable behavior in community living. From the standpoint of human capital, we could ask whether the capital is the fear itself, or is the lack of fear a capital? If we assume that the absence of fear is a significant potential of human capital that contributes to the openness and creativity, is the use of these resources possible without a certain dose of fear? The answers to these questions are offered by philosophers, psychologists, sociologists, and responses change over time and with the development of individual consciousness.

Modern business conditions expect from a man much more usage of human capital, especially change capital, which is directly related to fears. Ghilic-Micu and Stoica (2003) suggest several strategies for minimizing and managing fear in organizations: shared vision creation; fear existence acknowledgement and taking steps to reduce it; paying attention to interpersonal conduct; value criticism; reducing ambiguous behavior by being more specific in expectations, guidelines and requests for example; discussing all aspects of organizational life; practicing collaborative decision making; challenging worst-case thinking by also exploring the upside and build action plans for all cases including contingencies.

REFERENCES


TV SIGNAL DIGITALIZATION IN SERBIA IN TERMS OF MACROECONOMIC AND SOCIAL FACTORS – THE FIRST WAVE OF THE WORLD ECONOMIC CRISIS

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Abstract: The subject of this paper is to analyze a media digitalization and gives an overview of current situation in domestic public service. There is a tight relationship between media digitalization and economic and social development. Beside technical, various economic and demographic factors such as GDP, monetary and currency stability, employment rate, the inflow of foreign capital, education and cultural level of the population, age structure of population, etc., affect the media digitalization. Having in mind the low standard of living in Serbia, the paper will be focused to the expenditures of Republic of Serbia (as well as the financial cost of citizens) in the transition process of digital signal. Due to the negative effects of the global economic crisis, we will try to clarify how and under what financial conditions, the public service of Serbia plans to carry out the digitization process.

Keywords: media digitalization, public service of Republic of Serbia, world economic crisis, macroeconomic and social indicators

1. INTRODUCTION

In recent years, the collapse of the American financial market had the negative effect on the global economic and financial system. The first signs of possible turbulences on residential market in USA started during 2007 and negative effects of the crisis appeared in the second part of the year. The world financial and economic crisis speeded very fast on all parts of the world and had negative effects on global economy [1]. Recession and collapse of American and European financial market appeared in the second half of 2008 as result of sub-prime and secondary mortgage market broke (average value of one approved mortgage loans was about 130,000 USD) which was the main cause of current crisis. In the last ten years, economic growth of USA was generated through consumption of citizens by available and cheap loans (including mortgage loans). Empirical analysis of the

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1 This paper is an outcome of the research project “Digital media technologies and social-educational changes” (Project No III 47020) which is implemented with financial support from the Ministry of Education and Science of the Republic of Serbia.
USA proves that the consumption of individuals is the most important component of aggregate demand in American economy (with participation between 60% and 65%). After escalation of crisis, the effect from financial market was transferred on industry sector, and effects were visible in all countries, through outgoing of capital, decrease of demand, decline of foreign direct investments and export.

With the beginning of the financial crisis in Serbia the level of illiquidity increased whereas production and export volume dropped. A lot of global financial institutions (especially banks) went bankrupt, nearly 24 million people in the EU lost their job, and the average unemployment rate in EU member countries was 8.5% in 2011. According to statistics of International Monetary Fund (IMF), the world gradually emerges from the financial crisis. Furthermore, for the next couple of years a positive trend of gross domestic product (GDP) can be expected. It is estimated that Central and Eastern European (CEE) countries will have the most dynamic economic growth, which will bring their economies closer to the original level they reached before crisis.

The global economic crisis has affected all segments of the industry and the media and entertainment sector did not escape the consequences of the recession. The worldwide digitalization of media and entertainment sector has not escaped the consequences of the recession. In 2008, global television market in 2009 was 268.9 billion euro, falling 1.2%. In CEE countries media across the region have lost 30% to 60% of their income, with the highest decrease in advertising area. Financial and global crisis affected media companies, which this led to a massive unemployment. In 2011, Ringier, Pink and TV B92 laid off about 400 people. Director of Radio Television Serbia, Aleksandar Tijanić, informed the public that it is planned to lay off additional 800 workers in the public service of Serbia.

Digitalization is not only a technological process, changing position of broadcasters, emerging of new stakeholders and their growing economic interests require a change of entire media policy. The Strategy defines the framework for switchover from analogue to digital broadcasting of radio and television programs based on modern achievements in digital broadcasting as well as in the related areas, in order to provide better quality and efficient broadcasting of television, radio, multimedia and other contents of great value for end users. [9] The digitalization process in Europe is moving ahead, and some EU member countries have already completed this process. CEE countries switch-over is slow and the countries do not seem capable of catching up with EU targets. Across CEE, analogue switch-off has been vulnerable by political issues, governments’ lack of political will to make it happen, and, more broadly, the lack of political consensus over modernization and the consolidation of democracy.

Based on forecasts for 80 countries, the number of digital TV homes will double between 2011 and 2017 to 1,323 million. The Digital TV world household forecasts report estimates that global digital penetration will climb from 48.6% at end-2011 to 86.7% by 2017. According to Digital TV research about 76 million homes (approximately two-thirds) in the CEE have received analogue signals until the end of 2010. In addition, they project rapid conversion to digital TV (between 2012 and 2017 the number of digital homes in the region will nearly double, bringing the total to 112 million) and the fall of analogue homes (from 68% to 11% by 2016) in 15 CEE countries.

In Serbia a license fee decreased to 41% during economic crisis. In June 2012, citizens of Belgrade and Novi Sad met approximately 60% of the payment obligations, while the other parts of Serbia paid around 21% of the licence fee. The question to be raised is: How will Serbia finance the process of digitalization of the media in the global economic crisis? In most EU countries, and in the CEE region, buying customizable television is usually subsidized by the state (government). In this way users are able to purchase receivers at lower cost. According to Strategy for switchover from analogue to digital broadcasting of radio and TV programs, Serbia will provide between EUR 87 and 115 million for digitalization process until the end of 2012.

The paper is structured as follows. Section 2 presents a brief description of methodology which will be used including data base, indicators which will be considered precautions and the model which will be applied in order to quantify the effects of world economic crisis on development of digitalization process in Serbia. In Section 3 the authors give an overview of the negative impact of the first wave of the global economic crisis with special attention being paid to the Serbian economy. Development of digital era in Europe, current situation in public broadcasting and digitalization process in Serbia during crisis are presented in Section 4. The study concludes with some comments on results and ideas of switchover analogue signal during global economic crisis.

2 According to the methodology of the International Monetary Fund a group of Central and Eastern Europe consists of these countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Kosovo and Turkey.
programs in Serbia. These data are connected to the basic indicators of digitalization TV signal in the world.

The problem of paper work is influence of world economic crisis on digitalization process in CEE region, with focus on Serbia. The purpose of this article is to analyze the role of the economics and social indicators in digitalization process. Theoretical analysis of the paper will be supported by findings from national and international scientific literature, while empirical analysis will be supported by case studies and statistical surveys of eminent and globally recognized institutions, as well as by knowledge and experience of researchers who provided other approaches to this issue.

Authors will observe the current situation in media digitalization in Serbia during the global economic crisis and explore the enthusiasm and ability of public service broadcasting for the new digital era. In addition, the paper will provide an insight into the digitalization process in EU member states and their struggle with deficit in recession.

The analysis and conclusions are based on the following simple presumptions:

- Authors assume that there is a tight connection between the level of the economic and social development in each country and the TV signal digitalization;
- Authors believe that economic factors often delay the introduction and widespread application of digital technology. Serbia has to pay about EUR 75 million for the transmission equipment;
- Authors assume that digital TV brings new ways of communication, which are not typical for current media technology;
- Authors suppose that although the current economic situation and standard of living in Serbia are at low level, digital television will bring many technical innovations and will offer specific benefits to viewers;
- The experience of Western Europe has shown that the digitalization results are better if the transition period from analogue to digital broadcasting is shorter.

In this research, the authors start from the recognized theoretical concepts and approaches, with the focus on the empirical research. The authors will attempt to show research validation and to improve social objectives which should contribute to:

- Analysis of negative effects of world economic and financial crisis in media sector in CEE region with the focus on Serbia;
- Better understanding of the connection between macroeconomic and social factors on one side, and TV digitalization process development on the other side;
- The role and importance of digital signal in crisis;
- A level of digital media development through comparison with the neighbouring countries and the EU member states.

3. THE IMPACT OF THE GLOBAL CRISIS IN THE WORLD

Economic analysts believe that the mortgage crisis reminisce the world's largest economic crisis of 1929 in many ways. In addition, they agree that markets solving the crisis on their own, without any supervision, contributed to emergence and further development of financial crisis. The global financial and economic crisis spilled over from financial to real sector, confirming that the economic policy and operators in combination with systemic deficiencies contributed to the overall expansion and deepening of the crisis [3]. The global financial system as part of a market economy in recession could not survive without the financial support of developed countries and their key role in resolving the crisis.

In recent years, the collapse of the U.S. financial market had the negative effect on the global economic and financial system. The first signs of possible turbulences on residential market in the USA started during 2007 and negative effects of the crisis appeared in the second half of the same year. According to Blanchard et al. [2] the current economic crisis has driven the economics profession to rethink its views about macroeconomic policy in general and monetary policy in particular.

The world financial and economic crisis spread very fast on all parts of the world and had negative effects on global economy. Recession and collapse of American and European financial market appeared in the second half of 2008 as a result of sub-prime and secondary mortgage market broke which was the main cause of current crisis. In the last ten years, economic growth of USA was generated through consumption of citizens by available and cheap loans (including mortgage loans). Empirical analysis of USA proves that the consumption of individuals is the most important component of aggregate demand in American economy (with participation between 60% and 65%). After escalation of crisis, the effect was transferred from financial market to industry sector, and effects were visible in all countries, through outgoing of capital, decrease of demand, and decrease of foreign direct investments and export. Banks, which performed business in the USA, executed off-balance sheet securitization due to the lack of liquid funds and increased demand for the loans.

In global crisis, according to Mishkin [20], two stages could be distinguished, first of which encompassed the period from August 2007 to August 2008, while the second stage started in mid September 2008. During the first stage a small part of the USA experienced losses, which mainly occurred in the field of sub-prime residential mortgages. In terms of the second stage, there were a few events that marked the financial crises, some of which were: bankruptcy of the investment bank.
Lehman Brothers, the collapse of AIG, run on the Reserve Primary Fund money market fund.

The financial and economic crisis strongly influenced the whole world, however Central and Eastern Europe (CEE) was particularly severely affected. Gallego et al. [7] emphasized two stages of global crisis in emerging European countries: a stage of resilience to global disharmony that took place until September 2008, and a stage after September 2008 when this resilience stopped. Decreased liquidity and harder way of reforms of financial institutions, presented the first visible signs of world economic crisis in financial sector in CEE countries. More precisely, the crises in the equity market were identified through a drawdown of foreign investments. Before the crisis and recession, financial system of these countries used to be in developing phase due to the introduction of modern regulation and establishment of new financial institutions that presented basis for maintaining macroeconomic stability.

In the period 2007-2012 IMF has published a series of periodical World Economic Outlook (WEO) that provided an overview of the global economic growth before and during crises. Additionally, they gave a forecast for the economic indicators development. According to reports [13] economic growth in EU 27 member was 3.4% before financial crisis, while in 2009 it went into the negative zone. Table 1 (appendix) indicates that the gross domestic product of the USA as well as Euro zone countries ranged from 1.9% to 3.0%. Observed by regions, the highest economic growth in this period was found in CEE countries with a growth rate of 4.5%.

Last year, many countries have changed their attitudes about the current economic situation. The reports of eminent international institutions (World Bank, European Central Bank ECB, European Bank for Reconstruction and Development EBRD, Organisation for Economic Cooperation and Development OECD, International Monetary Fund IMF) present that, despite the changes in running economy, world economic crisis had a strong impact on economic trends in 2011. In late 2009 the world's leading economies projected the gradual release from financial crisis, but none of them dared to predict the intensity of economic recovery. According to the IMF’s latest report (WEO, April-July 2012), all observed regions (with the exception of the Euro area) have to cope with negative GDP. CEE countries, non- member states of the European Union, registered a positive growth rate of GDP (5.3%), last year. For 2012 IMF forecasts that GDP in the CEE region will fall to 2%, which is not surprising having in mind the current debt crisis currently afflicting some EU countries.

Although the global economy gradually began to overcome the recession in the past two years, there is no visible improvement in global labour market. According to the latest report of the ILO, global unemployment rate reached a level of 6.2% in 2009 and, in comparison with 2007, increased by 0.7 pp [12]. Table 2 shows that unemployment rate in the world was approximately 6%, while in the CEE countries was higher by 3 p.p. in the period 2005-2008. The world economic crisis has threatened the CEE countries’ labour markets, with the highest double digit unemployment rate of 10.2%.

The crisis has not spared the labour market of developed economies and EU member states where the unemployment rate increased from 6.1% in 2008 to 8.5% in 2011. According to the ILO forecasts it is expected that the unemployment rate will maintain the high level.

The global economic crisis has affected all segments of the industry and the media and entertainment sector did not escape the consequences of the recession. The worldwide television market is faced with a decline problem in advertising revenue of 9.2% in 2009. In comparison to 2008, global television market in 2009 was 268.9 billion euro, falling 1.2%[14] PWC global report indicates that the global spending on media and entertainment rose 4.9% in 2011 with the 5.7% projection growth during the next five years.

Before world financial crisis started, global revenue of media industry was USD 517.5 billion with top 10 media and entertainment markets: USA (USD 179.2 billion), Japan, (USD 41 billion), Germany (USD 25.8 billion), UK (USD 25.4 billion), China (USD 16.1 billion), France (USD 13.9 billion), Italy (USD 12.5 billion), Spain (USD 10.7 billion) and South Korea (USD 33.1 billion). The industry has reached revenue of USD 322.8 billion in 2009 (compound annual growth rate- CAGR of 3% for the period 2005-2009). As before the crisis, the largest media and entertainment market were USA, Japan and Germany in 2010. The report shows that the USA will remain the largest, but the slowest growing entertainment media market with CAGR of 5.3% in 2011 (approximately USD 754 billion). According to the market report form PWC Asia Pacific will remain the fastest-growing region in the next five years.
In 2010 more than 5,500 journalists lost their jobs in Spain, whereas according to the official statistics about 25% of Spanish journalist lost their jobs as the emergence of the recession. The UK was no exception. When compared to 2008, the number of unemployed journalist increased by 140% in April 2009. In Denmark the percentage of unemployed journalist reached the peak of 15%, while the overall unemployment rate was 6%.

3.1. Financial crisis in CEE countries

Before the beginning of financial crisis the rapid economic growth in CEE was based on overextended public and personal consumption as well as the expansion of aggregate demand. In the EU, the economic growth is slowed, volume of domestic demand and export level are reduced due to declining import demand in terms of global economic crisis. The fact is that the global financial and economic crisis affects developed economies as well as developing countries deeply. The negative effects in Serbia and other countries in the region were reflected in [10]:

- Slowdown in economic growth;
- Increased level of capital outflows;
- Reduction of foreign direct investment;
- Decreased availability of financial resources;
- Difficulties during debt collection;
- Increased level of financial sector insolvency.

Table 3 presents the economic activity of selected CEE countries. In the period before the beginning of financial crisis, Montenegro was the only country that has managed to achieve double-digit GDP (10.7% in 2007). In the period 2005-2008, before the global economic crisis escalated, these countries were yearly achieving the average level of GDP in CEE region. The exception was Hungary, since it recorded three to five time lower level of GDP in comparison with the average GDP of CEE.

In 2008, at the beginning of the financial crisis, a substantial decrease in economic activity in all observed countries (except Romania) was notified. According to IMF statistics, the peak of the financial crisis and recession in CEE countries started in 2009 when GDP level reduced. In only two years there has been a decline in economic activity by 6.8 p.p. (in 2008. 3.2% in 2009. -3.6%) in the region. The first indicators of a gradual overcoming of recession were visible in 2010 when the region came out from negative zone of GDP (except Croatia and Romania). The greatest progress in overcoming economic crisis was made by Hungary, Montenegro and Bulgaria. In 2010, GDP growth in Serbia was more dynamic in comparison to some countries in the region, primarily due to recovery of economic activity and foreign trade, export growth and depreciation of national currency. For the next few years IMF analysts predict that all CEE countries will continue with positive growth trend of GDP. The most dynamic growth in economic activity is expected in 2017 (4% at the regional level).

When it comes to social factors, it should be noted that they represent an important connection in economy development as well as in media sector in the CEE countries. The countries in CEE region felt negative effects of the global economic crisis through an increasing unemployment rate. When taking into consideration the fact that the highest unemployment rate level allowed ranges from 5% to 6% (the negative factors of the global economic crisis are to be excluded), it is easy to spot the burning issue of extremely high unemployment rate in CEE countries. Based on report of unemployment rate in the EU Member States (encompassing candidates) published by the European Commission, we can see the position of Serbia in relation to neighbouring countries. Table 4 shows unemployment rate in CEE region in terms of global economic crisis. All countries in the area (with the exception of Bulgaria and Romania) recorded higher unemployment rates than the average EU27.

In the last two years, Serbia had a lower unemployment rate than Macedonia and Bosnia and Herzegovina, which were the leading countries in the region by the number of unemployed people. Unfortunately, in 2010 and 2011, the trend of high unemployment is continued in all countries in the region. Having in mind that the crisis and the recession generally do not vanish until the unemployment declines, the fact that we cannot expect any changes in the labour market in the region in the current and next year is quite concerning.

Open Society Institute (Footprint of Financial Crisis in the Media Report) explores the impact of financial crisis on media in 18 countries of CEE and the Commonwealth of Independent States [20]. In CEE countries media across the region have lost 30 to 60 percent of their income, with the highest decrease in advertising area. In these circumstances, the media in this region was required to cut costs. The first ones to feel the consequences of this cost cutting strategy were the employees who were increasing losing their jobs over the last three years. In addition, media companies have reduced the budget for
research, as well as regional and international reporting. It should be noted that the negative effects of the global economic crisis forced the investors to withdraw from the CEE media market. It often happened and still happens, that a large number of local broadcasters were not capable of finding an adequate way to cope with the recession. In such financial circumstances they went bankrupt.

3.2. Serbian economy in financial crisis

Serbia, the country which is going through a transitional period and belongs to the group of developing countries, indirectly felt a domino effect of the global financial crisis. Unlike the developed European economies, a risk of loss of capital in the financial sector is minimal in Serbia, because the investments in the sector were non-risk (consumer loans, mortgages and corporate loans) [8]. The negative effects of financial crises were followed by the existing macroeconomic imbalances in domestic economy (high budget and trade deficit). The negative effects of crisis to the real sector slowed down the economic activity in Serbia: GDP declined industrial production felt, construction activity decreased, foreign trade turnover in retail trade reduced, inflow of foreign capital and investments decreased.

The analysis of the Serbian economy (table 5) aims to provide the genesis of the development of major macroeconomic and social indicators in the period 2007-2011 as well as to give projections for the next period.

In the period 2000–2008 significantly real GDP increase with average growth rate of 5.4% per annum in Serbia was recorded. As a result of that growth, the level of GDP has increased by more than 11 billion Euros, more precisely, from EUR 20.3 billion in 2005 to EUR 29.9 billion in 2009. Gradually, but steadily GDP growth in this period was the result of the development of the tertiary sector, the growth of foreign trade and domestic demand as well as an increase of foreign direct investment. The negative effects of the financial crisis affected the decline in economic activity in the previous period. In the next three years we can expect a slight recovery of the domestic economy. According to the Ministry of Finance of the Republic of Serbia a growth rate of Serbian economic activity in 2011 was 3.0%, for the next two years they project the positive trend to be continued and overcoming the financial crisis with GDP growth rate of 5%.

In the period 2005-2008 GDP per capita was gradually increasing and reaching its peak (highest level) in 2008 (EUR 4,546). Having in mind that Hungary recorded three times the GDP with about 35% more people, Romania, with three times the population had four times higher level of GDP, Croatia with 40% fewer people noted about 40% higher GDP, while Slovenia with as many as 3.7 times less population had about 10% higher GDP than Serbia, we can conclude that the current level of GDP per capita in Serbia is among the lowest in the region (if we leave out Bulgaria with similar population and GDP to Serbia). According to the Ministry of Finance of the Republic of Serbia it can be expected that GDP per capita will gradually increase and reach a peak in 2013.

Serbia, as underdeveloped and uncompetitive country with modest resources available, is quite dependent on imports. In the last five years, a yearly reduction of external trade deficit in the trade balance (from EUR 8.152 million in 2008. to EUR 2.266 million in 2009) was recorded. As a result of a larger decline in imports than exports, external trade deficit is reduced and the export-import ratio equalled to 53.3% in 2009 and was higher if compared to 2008 when it was 47.9%. In other words, reducing the external trade deficit was not a result of increased volume of exports of goods in 2009, but more intense decline in imports relative to exports. Despite the global economic crisis, the biggest impacts on external trade were:

- Drop in energy prices (oil and oil products);
- Reduction of the liquidity in the economy;
- Depreciation of domestic currency;
- Decline in prices of primary products in world markets (primarily metals, which have a large share in the structure of our export level);
- Decrease in production and sale of goods abroad.

In the late 2009 the first signs of slight recovery in the global market were observed, which led to a gradual increase in economic activity in the world in 2010. These trends had a positive impact on the export volume in 2010 with the growth rate of 24%, whereas the volume of imports of goods and services increased by 9.7% over the previous year [18]. The reason for the positive trend in external trade was the growth of industrial production (primarily in the ferrous metallurgy products) in 2010, which affected the acceleration of export growth. In 2012 recovery as well as positive growth rate in exports and imports of goods and services of 16.3% and 11.4% (respectively) can be expected. [19]

Having in mind the situation in the 90s, Serbia has started the transition process later in comparison with other countries in transition. Although the investment climate in Serbia improved after 2000, Serbia has attracted a relatively low level of foreign direct investment (FDI) in comparison with other neighbouring countries. The fact is that FDI is a key factor of economic development of countries in transition which affect the economic development and its constant and dynamic growth.

In the period 2005-2010 net inflow of FDI was approximately EUR 10.675 million in Serbia with the highest level in 2006 (nearly three times higher than in 2005). The current level of FDI, especially Green-field investments (foreign investment in entirely new companies) is not suitable. The highest level of FDI in Serbia accounted for brown-field investments (acquisition of state and public companies through tenders and auctions). FDI halved in 2007 and the trend has held until today. The drastic decline in FDI can be seen from the start of the global economic crisis, from July 2008, excluding February and December of 2009 when the recorded inflows were EUR 451.9 million and EUR 260 million, respectively. In February 2009, an inflow of EUR
As a consequence of global economic crisis, net FDI inflows achieved a fairly sharp decline of around 45% in 2010, compared to 2007. It is estimated that in 2012 FDI will reach the level of EUR 1.567 million while the forecast for 2013 is a positive trend and achieving pre-crisis levels.

After the democratic changes in Serbia, there was an age of privatization. Unsuccessful privatization and economic reforms resulted in unemployment rate increase in Serbia. In 2006 (when the inflow of FDI reached a peak EUR 3.5 million) the highest level of unemployment rate (21%) was measured. The lowest registered unemployment rate in 2008 (13.6%) was not a result of new jobs and increased employment levels, but a change of registration procedures by the competent services (table 6). A large number of unemployed people were enlisted under a category of "helping household members", without actually having a job. This phenomenon was most common in rural areas and was intended to significantly increase the number of the "active population" in agriculture. Of the total 7.3 million populations in Serbia (excluding Kosovo) there were 1.8 million employed persons, 75.4% of which were employed in enterprises, institutions, cooperatives and organizations, while 441,000 people worked in private enterprise in 2010. The unemployment rate was 19.2%, 3 p.p. more than in 2009. At the end of the first quarter of 2012, 754 thousand unemployed people were recorded. [29]

Unsuccessful privatization and economic reforms resulted in a gradual increase in unemployment in the labour market in Serbia. Instead of expanding employment in the private sector and newly privatized companies, a restructuring process in the labour market fictitious increased the employment rate. The situation is not optimistic in the media sector. The current economic and political situation in the country are the main reasons why there are less journalist as well as a lot of unemployed people who are owed wages. In 2011, Ringier, Pink and TV B92 laid off about 400 people. Director of Radio Television Serbia, Aleksandar Tijanić, informed the public that it is planned to lay off about 800 workers in the public service of Serbia, and that additional 300 to 400 people in RTS, due to their inability to keep up with the modern times, may be laid off as well. Because of that, the RTS offered new openings for 100 young professionals, who should replace about 1,200 workers? National Public Service currently has 3,220 employees 683 of which are journalists and editors, while out of 1,200 the provincial public service employees, 450 are staff journalists (RTV city has 237 employees, 110 of which are journalists and editors). [25]

That means that one in ten citizens in Serbia live below the poverty line with monthly income of around RSD 8,500 [28]. The most vulnerable are groups of older than 65, children and people living in multi-member households, where the head of the household has a low education, is unemployed or inactive. In addition, regional differences are also significant with the highest poverty rate in central Serbia, 12%. Having in mind that living in Serbia is hard nowadays, it is reasonable to question whether the citizens of Serbia, in these economic conditions are ready for the process of digitization (taking into account the fact that revenues from licence fee of citizens were reduced in the last few years). Another very important question is: Do all citizens in Serbia have to pay the same amount of licence fee, having in mind that some people work full time (8 hours), and others often several hours a day for RSD 500?

4. FROM ANALOGUE TO DIGITAL TV SIGNAL

An extremely important element in the transition from analogue to digital TV signal broadcasting represents a fixed time frame. The factor that affects the time frame the most is the regional conference held in Geneva (GE-06) in June 2006, where 118 members of the International Telecommunication Union (ITU) agreed on the introduction of fully digital broadcasting and the termination of digital TV in Europe [17], Africa and parts of Asia, which should be finished by June 17th, 2015. This Agreement has defined that after a certain time period, the countries will no longer have to protect themselves from the analogue signal of the neighbouring countries, but will be able to freely use frequencies specific for each country, for their digital services. With the agreement on spectrum frequency, the conference made decisions on improvements of the protection of the analogue frequency transmission (as approved by the Stockholm Agreement from 1961).

All the member states of the ITU have created a strategy for switchover from analogue to digital broadcasting of radio and TV programs. This document is considered a higher level document, which, apart from the overview of key decisions, strategies and milestones, also gives information on the date of the analogue/digital broadcast changeover, the role of the country (government), services coverage, number of already applied multiplexes, legislative framework and the standard format of digital TV compression. Apart from this, these national strategies have set clear points regarding the type of transition: whether it is the gradual (overnight, sudden), the type that is spread all around the country or the type that is arranged by regions.

According to Iossifidis European television has so far developed through three phases [16]:

- Loss of public service broadcasting monopolies and the development of commercial television transmitted via terrestrial means, cable or satellite, in early 1980s;
- Analogue era, combination of two concepts: "trusteeship" paradigm (setting up of public
service broadcasters and government regulation of broadcasting in order to safeguard the public interest against the self-interest of broadcasters) and commercial broadcasters;

- Digital television, starting in the late 1990s.

4.1. Digital era in Europe

The process of digitalization in Europe is at a late stage, with some of the countries of EU having already fully finished the process. Digitalization started knocking on the door of Europe back in 1998, when digital TV broadcasting started in Great Britain [11]. In EU, the process of complete transition from analogue to digital broadcasting has been planned for the end of 2012. Some members of EU have already finished this process prior to the deadline (table 7), having a large percentage of territory covered by cable TV, simplifying the process of digitalization. Digital switch-over is not currently a high priority in the financially troubled smaller European countries of Greece, Portugal and Ireland.

A pioneer role in analogue switch-off was taken by the German federal states of Berlin and Brandenburg. In August 2003 the very first successful switch-over process was undertaken. Three years later, the first major heavily cabled country, the Netherlands, started to turn off analogue terrestrial transmission. Within a year, additional two countries, Finland and Sweden, listed themselves under the digital terrestrial pioneers with a completed switch-over. The UK and Spain, having seen their respective pay-tv digital terrestrial ventures ITV Digital and Quiero TV going bankrupt in the early 2000s, both changed the model to free-to-air digital terrestrial TV and with this proposition that basically avoids viewer resistance have since had a swift recovery. [16]

In 2009 the number of digital TV households rose to 533.4 million with annual increase of 18.6%. The digitalization of TV households is growing based on few factors [14]:

- The end of analogue signal broadcasting in some countries such as the USA, Denmark and Norway;
- The increase in global digital network coverage rates in various national regions;
- The success of multiply offers provided by television over ADSL, essentially in digital quality;
- The launch of new satellite bouquets and new prepaid offers, both allowing reception of digital programs.

Based on forecasts for 80 countries, the number of digital TV homes will double between 2011 and 2017 to 1,323 million, according to a new report from Digital TV Research. The Digital TV world household forecasts report estimates that global digital penetration will climb from 48.6% at end-2011 to 86.7% by 2017. [26]

Table 8 provides an overview of CEE countries grouped by the year of adopting the Strategy for switch-over from analogue to digital broadcasting of TV programmes in CEE. If we look at the data more carefully, we can notice that Estonia and Lithuania were the first countries in the region that started the process of digitalization, while Serbia, together with Bosnia and Herzegovina and Romania fall into the group of countries that have adopted these strategies the last (not before 2009).

According to the KPMG report [17], European Commission openly supports and encourages members of the ITU in the process of switching from analogue to digital signal broadcasting. Apart from this, chairmen of the European Commission have prognosticated that most members will finish the transition by the start of 2012, which will contribute to the realization of expected economical and social benefits for the EU as a whole. CEE countries, although behind when compared to most of the EU, invest great efforts and accept the existing plans and deadlines.

CEE countries switch-over is slow and the countries do not seem capable of catching up with EU targets. Across CEE, analogue switch-off has been vulnerable by political issues, governments’ lack of political will to make it happen, and, more broadly, the lack of political consensus over modernization and the consolidation of democracy. [16]

Serbia is lagging behind Europe and neighbouring countries. Table 9 shows that in comparison with the countries in the region Serbia is running late with the process of digitalization. If the data is considered more carefully, we can notice that, alongside Romania, Serbia is the last country to start the test broadcasting of digital TV. On the other hand, Slovenia and Croatia have been pioneering the digital signal broadcasting in this region of Europe.
When it comes to a complete removal of the analogue signal and the change to the digital broadcasting, Croatia and Slovenia have already switched to the digital TV broadcasting, while Hungary is in the end phases of this. Other countries (except for Serbia, where the time frame is more flexible) are expected to stop the analogue signal by the end of 2012. Due to the negative effects of the world economic crisis and the ongoing recession, most of the CEE countries have decided to postpone the analogue/digital signal switch for some time. In Bosnia and Herzegovina there are no economic conditions for the entire process of digitalization to be finished on time, while Montenegro, where the analogue broadcasting is supposed to stop by the end of 2012 according to the current plans, is for now running late with the realization of the action plan.

According to Digital TV research about 76 million homes (approximately two-thirds) in the Eastern Europe have received analogue signals until the end of 2010. In addition, they project rapid conversion to digital TV (between 2012 and 2017 the number of digital homes in the region will nearly double, bringing the total to 112 million) and the fall of analogue homes (from 68% to 11% by 2016) in 15 Eastern European countries. Ten of fifteen countries will be complete digitalization process by 2017, with Estonia the first to full conversion in 2012. In comparison with 2012 (USD 5,780 million), TV revenues in the region will be 35% higher in 2017 (approximately USD 7,806 million). [26]

4.2. Public service broadcasting in Serbia

There is no other service that at the same time has access to such a wide sector of the population, provides it with so much information and content, and by doing so conveys and influences both individual and public opinion [6]. In the domicile media sector, even before the beginning of the world financial crisis, negative signs of domestic economic crisis were noticeable: problems with political and social reform (that have been stagnating and slowing down the process of getting abreast with EU standards in the media field), as well as a very slow economic transition that has been going on for the last two decades.

National TV fee was brought into power by the decision of Serbian government in 2002 and the Law on Broadcasting. According to the current regulations, RTS does not charge the subscription, and that job is entrusted to EPS. National TV of Serbia, according to the provisions of the Law on Broadcasting is financed by citizens’ subscription, i.e. the financial means gathered from the subscription, co-financed by the state budget and the commercial income. National TV is also financed by the income from direct Parliament assembly broadcasts, as well as sponsor donations for purchasing the rights of live broadcasts of events, mostly sport ones. This allows the RTS to maintain a high rating (highest viewer ratings across 320 days a year), which brings good prices for the commercials (over EUR 23 million worth in 2011 alone). Serbia, within the negotiations on EU membership will be obliged to adjust to the European standards in the area of broadcasting. Experiences from European countries have shown that there is no common model for the management and financing of a public TV service, but that there are common problems: sustainable financing of the public service and the editorial independence regardless of the political changes in the country. In 2010, financial help of the state to the media sector of Serbia was around EUR 21 million, while in 2011 around EUR 25 million was appropriated at the level of [9]:

- Republic of Serbia, EUR 5 million;
- Autonomous province of Vojvodina, EUR 3.5 million and
- Local self-government communities, EUR 16.5 million.

Media experience from the countries of Western Europe has shown that budget financing cannot guarantee editorial independence. It should be stated that Serbia is bound by the Agreement on stabilization and joining the EU to stop the practice the direct media financing from the budget from January 2012. The Association of Serbian Journalists (UNS) agrees that this type of public TV financing should be avoided and the potential financial problems should be solved by forming a new and more secure system of charging for services. The proposal by UNS is to install a public TV tax (as is done in Croatia) to which RTS would not pay VAT or to finance the TV via the electricity bill (as is the practice in Turkey).

In the conditions of recession, several problems can be noticed in the media sector of Serbia. The first is connected with the business side of the public TV, i.e. the huge arrears of citizens in paying the subscription. Apart from that, the fact that there are no solutions ready for media problems in the recession and that there is no light at the end of the tunnel. Also, economic analysts warn the public that even when the financial crisis is finished and domestic economy is out of recession, the negative effects will still be felt in all segments of Serbian economy. [23] In the field of media this will be reflected in the reduced financial means from commercials and subscription, which will reduce the cash flow in the public service in Serbia. [22]

Since the subscription, which exists in most European countries, in 2007, EUR 57.6 million was collected. In the media study it is pointed out that the efficiency of subscription fee collection in 2009 dropped below 50%. Judging by financial reports of RTS and RTV, the total collected subscription fee for 2009 was EUR 34 million less than in 2008. The escalation of world economic crisis has caused further drop of the collected subscription fee, with the levels differing depending on the regions of Serbia: best rates of payment are in Vojvodina, while the worst ones are in southern regions of Serbia (between 10 and 15%).

RTV business report shows that in the first half of this year this segment of the public TV had a loss of about RSD 54.3 million, which is a rise of 57% compared to last

[5]
year. One of the main causes of these losses is the drastic fall in subscription fee payments. That the world economic crisis affected the collected amount from subscription fee in total of EUR 19 million, for this number to be reduced to only EUR 16.3 million. The collected RTV subscription fee in the first half of 2011 is 57.9% (while in the same period the year before it was 59.5%) [27]. In 2011, the planned income from subscription was RSD 3.2 billion (3.1 billion from households, 39 million from legal persons). Total collected income in mid-2011 was only RSD 1.45 billion (1.43 billion from households and 18 million from legal persons).

RTS is in a similar situation, with lessened amount of subscription fee payment, as the RTV. In 2008, RTS managed to collect approximately EUR 90 million, while in 2009 this amount was nearly cut in half, with EUR 49 million collected. Economic crisis affected the drop in subscription fee payments down to 41%, looking at Serbia as a whole [27]. In June 2012, 60% of Belgrade and Novi Sad citizens have paid the subscription fee, while this percentage in the rest of Serbia is around 21%.

Households which have the economic means to set aside funds for the subscription fee do not do this for multiple reasons:

- Citizens protest against the number and length of commercial blocks for products and services, as well as the sound level of the commercials (the volume is higher than the rest of the programme);
- It is a fact that RTS pays the rights to live broadcasts of certain events (mostly sport events), which could be bought by other, private televisions in Serbia, thus RTS has no loyal competition;
- In the last few years there is no significant change when we are talking about the diversity and quality of informative, educational, entertainment and sport programme;
- Citizens of Serbia are mostly concerned about the fact that the public TV is used more and more in political purposes, especially in the election campaign. RTS had the largest number of reports with the subject of election campaign analysis (102), and RTV with 73 reports was among the media that followed the elections with some intensity. [4]

4.3. Is Serbia ready for digitalization?

One of the most important pillars of the information society is public service broadcasting, by which is expected to get benefit from the new media technology. Digitalization is not only a technological process, changing position of broadcasters, emerging of new stakeholders and their growing economic interests require a change of entire media policy. [24]

The Ministry of culture, information and information society is leading the process of changing to digital TV. The Ministry is working in partnership with the broadcasters of the Republic Agency for Electronic Communications (RATEL) and RRA (Republic Broadcasting Agency - RBA) on July 2nd, 2009, Government adopted a Strategy for switchover from analogue to digital broadcasting of radio and TV programmes in the Republic of Serbia. [9] It established the basic strategic guidelines and defined the frame for the analogue/digital broadcast switch. As the date of completion, April 4th 2012 was set and the obligations of the authorities in the process and their realization. The government, with their decision on March 1st, 2012 changed the Strategy for the analogue/digital switchover based on the set date being prolonged, as well as the switchover moving from a single day to a phase process by June 17th, 2015 (in accordance with the Geneva agreement). In other words, it turned out that turning off of the analogue signal and the switchover to the digital broadcasting in the entire country in one day was too a complex of a task that Serbia set for itself, and which, realistically, could not have been expected to be accomplished. The government should adopt a Plan of switching to digital broadcasting which should set the phase switchover by regions, as well as the defined deadlines (six months at most) for the analogue signal turning off.

The data from Neilson audience measurement establishment survey show that in Serbia (without Kosovo and Metohija) there are only 10.1% of digital households, including April 2011. It is encouraging that the penetration of digital households is a growing trend, however, Serbia is still far from other members of EU.

![Graph 3 Digital household penetrations in Serbia, in percentage](image)
planning the division of frequency/location for the terrestrial analogue FM and TV radio broadcasting on the territory of Republic Serbia, Annex IV). The first signal from the initial network for the digital signal broadcasting in Serbia began on March 21st, 2012. The digital signal from the initial network from the TV tower on Avala will cover about 40% of Serbian citizens. This way, public company "Emisiona tehnika i veze" will broadcast on a national level the programmes of the national TV and the programs of national commercial stations. A total of 15 transmitter (13 plus 2 broadcasting locations) from: Avala, Gorica near Niš, Subotica, Kruševac (Goče), Vršac, Ovčar, Priboj, Crveni Cot, Užice, Loznica (Gučevo), Novi Pazar, Valjevo, Raška, Košutnjak, Stošićno Brdo. Two additional locations (Košutnjak and Stošićno Brdo) are envisaged as forming the Single Frequency Network on the territory of Belgrade at the same frequency. Public company ETV still has not published results on the networks operation, however, unofficial information is that there are no serious issues in its function.

Within the initial network there will be 10 programs in standard definition (SD) and one programme in high definition (HD). According to the RBA decision, the initial network will include the following programmes: RTS 1, RTS 2, RTS Digital, Pink, B92, Prva, Avala, Happy, RTV 1, Studio B, while one RTS programme will be the only one broadcasted in HD. This way Serbia joins the majority of European countries where the process of analogue-to-digital broadcasting has started. Broadcasters are still not included in the process of digitalization, and in this moment they still don't know what their concrete obligations are when it comes to the planning and realization of this process.

A question poses regarding the point of how is Serbia, during the world economic and financial crisis will finance this enterprise. The means received by public company ETV from the budget are smaller than compared to 2011, while the largest clients are either in a difficult financial situation, or, as is the case of RTS, are still not paying for the services to the broadcasters. ETV only allows, to most of the commercial televisions, only the services of placing the analogue broadcasting equipment on their locations (services of collocation), while the services of analogue broadcasting is provided only by RTS and the commercial national TV Avala, which is currently suffering from financial problems. It is worth mentioning that RTS is not paying for the services of broadcasting to EMT, neither for the use of frequency to RATEL, even though it is obligated to do so by the Law on Broadcasting. RATEL is trying to transfer this debt to ETV. Financial issues and problems that could befall ETV because of this could seriously bring into question the further digitalization process in Serbia.

The switch from analogue to the digital broadcasting represents a serious problem in the broadcasting chain (from programme providers to the end users), especially to those who are not ready for the digital era. The digitalization can be very expensive for broadcasters as well as other participants on the market, whose short-term investments can be returned only long-term. It should be mentioned that the process of change to digital broadcasting is not simple due to technical aspects as well as the legal regulations. The greatest worry of the users is the availability of the receiving devices: adaptable TV receiver (Set Top Box - STB), connecting to the antenna input of the analogue TV, thus allowing for the receiving of the digital signal. Therefore, every household in Serbia, in order to be able to "catch" the digital signal, has to have an adjustable TV receiver - STB. The price of STBs has been falling until the moment it stopped at EUR 25. The government of Serbia has been speculating that their price will not go above EUR 20. However, the experts state that these receivers will not be able to use the second generation of digital TV, which Serbia has chosen as its goal. In order for the citizens to be able to follow the digital signal, they will have to have the TVs with the DVB-T2 tuner or an external unit decoding the digital signal and allowing for it to be watched at a standard TV (STB). The process of digitalization will not include those who have cable TV, while the others will require a special adapter, the cost of which will be EUR 30 to 50. Leading cable distributors have already came out with an offer for these devices, with prices between RSD 1,000 to 6,000, depending on the package, and the price of the service is estimated to RSD 200 to 600.

In most EU countries, as well as the CEE region, purchasing of the adjustable TV receiver was usually subsidized by the state (government). This way, the users were allowed to buy the receivers at a lower price. In developed countries, such as USA or UK, who started the switch to digital broadcasting at the end of the 20th century, the process was financially helped by the state (mostly via state benefits) [11]:

- in USA, every household received two coupons which allowed them to pick up two STBs;
- in UK, over EUR 700 million was dedicated for these purposes (coverage of 7 million households);
- Germany gave out 6,000 receivers to low-income families (individual subsidies of EUR 16 per month), all with the goal of increasing the importance, strength and existence of terrestrial broadcasting signal, with the introduction of digital TV;
- Italy allocated EUR 110 million from the budget as the assistance to the households when buying STBs via individual subsidies of EUR 50 to EUR 70;
- Austria secured a yearly digitalization fund of EUR 6.75 million; the analysis of the expanses has shown that the digital network needs to be of commercial character (financed business model that does not rely on state subsidies).

In CEE region, the states have decided to provide a certain financial help to the citizens in the process of switching to digital signal broadcasting. For example:

- in Croatia, every subscriber has a EUR 10 voucher for the purchase of a digital receiver;
- in Montenegro, a government subsidy is planned, where the citizens will be able to buy an
adjustable TV receiver for only 30% of its market price);
- in Slovenia, financial help will be given only to the poor households;
- in Estonia, digital subscription to the citizens is offered in a package with STB, while the STB itself needs not be purchased, but can be loaned with a minimal reimbursement, or even free [17];
- in Romania and Bosnia and Herzegovina, state help has still not been defined.

In the Strategy for switchover from analogue to digital broadcasting of radio and TV programmes, it is stated that the necessary means for the introduction of digital broadcasting of TV programme in Serbia will be planned within the budget of the Ministry in question (at the moment of the writing of the Strategy that was the Ministry of telecommunication and information society). The Strategy points out that the necessary equipment for the broadcasting (transmitters and distribution networks) in the value of EUR 75 million will be acquired by way of the Republic of Serbia taking a loan from international financial institutions. The largest part of this goes to the construction of the digital network, while less money will be needed for the receivers of the households with the aerial. Inclusive with 2010, in the process of digitalization around EUR 22 million has been invested (grants- IPA funds, in the amount of EUR 12.5 million and around EUR 9 million of investment by the then Ministry of telecommunication and information society) plus the digitalization equipment worth EUR 10 million from EU. In the Strategy for switchover from analogue to digital broadcasting of radio and TV programmes it is stated that Serbia will secure between EUR 87 and EUR 115 million for the digitalization of TV programme by the end of 2012.

For the needs of the Ministry of telecommunications and information society, the auditor of Deloitte agency did an evaluation of the digitalization costs. The analysis covered the expenses of subsidies for Set-Top Boxes, which would cost between EUR 20 and 50 million, depending on the model of financing. The Strategy for switchover from analogue to digital broadcasting of radio and TV programmes plans 3 possible subsidy models [9]:

- Subsidised costs for acquisition of one STB per household for all users that receive television programs solely by terrestrial reception. The subvention will amount to EUR 25 (~25 x 1,500,000 = 37,500,000 EUR);
- Subsidised costs for acquiring one STB per household for all users that pay subscription fee will be reimbursed to EUR 25 (~25 x 1,600,000 = 40,000,000 EUR);
- Subsidised costs for acquiring STBs for the socially endangered persons (~ 50 x 300,000 = 15,000,000 EUR). Dynamics of spending these financial means is set for the fourth quarter of 2011 (EUR 12,000,000) and the first quarter of 2012 (EUR 3,000,000).

Unlike the Strategy, which states that every household will get one STB device in order to be able to watch digital TV, due to the negative effects of the world financial crisis and the poor economic situation in the country, it has been decided that the state will prepare help for 300,000 economically most destitute families, allowing them to buy the decoders this way. Special care will be provided for the persons with hearing and eyesight problems by providing special programme content for them, when the switchover happens, through the programmes of the national and regional public TV.

In Serbian public, two currents of thought have arisen, one in support of the digitalization and one that considers that it is not justifiable to undertake such large and financially demanding project. Another current claims that, even with the approach of digital era, Serbia will use mostly obsolete equipment and software that is inappropriate and often of questionable legality. Further, they consider that the digitalization is just something that creates problems and expenses, since apart from the STB device that allows unhindered use of the digital signal, citizens of Serbia will have to cover other expenses as well, most importantly a higher amount of electrical energy used, due to additional electronic equipment (after the additions to TVs and radios).

Even though the current economic situation as well as the life standard in Serbia is at a low level, one should remember that digital television brings many technological innovations and offers certain advantages to the viewers, as well as the radio and TV industry. By switching from the analogue to digital broadcasting, instead of one programme in one TV channel as it is now, a large number of programmes will be broadcasted, available in SD and HD. A large number of channels will be freed after this. This means that one TV channel, which fits one analogue programme, will fit 4 to 6 digital TV programmes (with a lower degree of signal compression), i.e. 10 programs (with greater compression). [11] Digital television introduces many technical innovations and gives benefits to the audience and the broadcasting industry [15]:

- Increased choice and quality for viewers (as there will be more channels and the opportunity to provide a better image, including wide-screen aspect ratio, high definition and sound quality);
- Lower transaction costs or the ability to transmit more channels or services for the same cost. Broadcasters will no longer have to incur the costs of transmitting signals in both formats, releasing sources for investment in programming and other services for consumers;
- Better efficiency in spectrum use (as more data can be transmitted within the same bandwidth). Spectrum will be released to allow the development of more television and other services for consumers. Digital terrestrial television signals are also expected to reach the population who live in areas that cannot currently receive them because of spectrum limitations; and
- The ability to transmit associated data allowing for enhanced television or fully interactive
applications when associated with a return-path facility.

5. CONCLUSION

Serbia has indirectly felt the domino effect of the global financial crisis, which is just a prolongation of the existing national economic crisis. In the recession, the national economy is in a ditch: reduced GDP effects a decline of living standards and increases unemployment rate. In these economic conditions, no segment of Serbian economy was unaffected with the recession. In Serbian media sector there can be seen a few problems during crisis:

- Reduction of the employees in the national public service;
- High rate of unpaid licence fees;
- Decreased advertising revenue;
- Declined inflow of public service of Serbia;
- No obvious solutions to the problems of media in recession;
- After the financial crisis ends and national economy comes out of the recession, the negative impacts will still be present in all segments of the Serbian economy.

In terms of economy and media sector in Serbia, there is not much motivation to expect that the current year will be better than the previous. Media organizations that survive the crisis will need many years to recover. It is difficult to forecast the prospects of further development of electronic media in Serbia, having in mind the problems they are daily faced with. The fact is that the future of public services largely depends on public policies and their further development support. Digitalization process should be analysed as a financial mission and a long term investment which will greatly improve the local business media sector.

The Strategy for switchover from analogue to digital broadcasting of radio and TV programs stresses out that the required equipment for the transmission equipment (transmitters and distribution networks) will be borrowed by Republic of Serbia from international financial institutions in the amount of EUR 75 million. Most of that amount will be going to digital network building, while less money will be needed for receivers to households that receive the program via terrestrial antenna. At the end of 2010, around EUR 22 million have been invested in the process of digitalization (IPA-grant funds, amounting to EUR 12.5 million and about EUR 9 million investment by the former Ministry of Telecommunication and Information Society) plus digitalization equipment worth EUR 10 million by the EU.

In the European Union, the full transition from analogue to digital broadcasting is planned for no later than the end of 2012. Although CEE countries are in a disadvantage compared to most EU countries, they work hard and accept the existing plans and the required deadline. Serbia is lagging behind Europe, as well as the neighbouring countries. In Serbia digital penetration of households amounted to 10.1%, as of April 2011, which is below the world average of 48.6%. At the end of 2017, the global digital television penetration will reach 87% and 47 countries will complete digitalisation process.

The first initial digital signal started broadcasting on 21st March 2012 in Serbia. The digital signal from an initial network from Avala covers between 40% and 50% of our country. A switchover from analogue to digital television program will bring a larger number of programs in the standard (SDTV) and High Definition (HDTV), instead of one television program in the current television channel.
### APPENDIX

#### Table 1 GDP growth rate (in %)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2017</th>
</tr>
</thead>
<tbody>
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<td>USA</td>
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<td>-0.3</td>
<td>-3.5</td>
<td>3.0</td>
<td>1.7</td>
<td>2.1</td>
<td>2.4</td>
<td>3.3</td>
</tr>
<tr>
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<td>0.4</td>
<td>-4.3</td>
<td>1.9</td>
<td>1.4</td>
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<td>0.9</td>
<td>1.7</td>
</tr>
<tr>
<td>EU 27</td>
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<td>0.5</td>
<td>-4.2</td>
<td>2.0</td>
<td>1.6</td>
<td>0.0</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>CEE</td>
<td>5.4</td>
<td>3.2</td>
<td>-3.6</td>
<td>4.5</td>
<td>5.3</td>
<td>1.9</td>
<td>2.9</td>
<td>4.0</td>
</tr>
</tbody>
</table>

*Source: IMF, World Economic Outlook, April 2012, Appendix, p. 190*

#### Table 2 Unemployment rate in the world (in %)

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<td>5.6</td>
<td>6.2</td>
<td>6.1</td>
<td>6.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed economies and European Union</td>
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<td>6.3</td>
<td>5.8</td>
<td>6.1</td>
<td>8.3</td>
<td>8.8</td>
<td>8.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE</td>
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<td>9.1</td>
<td>8.4</td>
<td>8.4</td>
<td>10.2</td>
<td>9.5</td>
<td>8.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


#### Table 3 GDP growth rate in CEE (in %)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serbia</td>
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<td>3.8</td>
<td>-3.5</td>
<td>1.0</td>
<td>1.8</td>
<td>0.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Croatia</td>
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<td>-1.2</td>
<td>0.0</td>
<td>-0.5</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>6.2</td>
<td>5.7</td>
<td>-2.9</td>
<td>0.7</td>
<td>1.7</td>
<td>0.0</td>
<td>1.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Montenegro</td>
<td>10.7</td>
<td>6.9</td>
<td>-5.7</td>
<td>2.5</td>
<td>2.4</td>
<td>0.2</td>
<td>1.5</td>
<td>2.2</td>
</tr>
<tr>
<td>FYR of Macedonia</td>
<td>6.1</td>
<td>5.0</td>
<td>-0.9</td>
<td>1.8</td>
<td>3.0</td>
<td>2.0</td>
<td>3.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Romania</td>
<td>6.3</td>
<td>7.3</td>
<td>-6.6</td>
<td>-1.6</td>
<td>2.5</td>
<td>1.5</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>6.4</td>
<td>6.2</td>
<td>-5.5</td>
<td>0.4</td>
<td>1.7</td>
<td>0.8</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.1</td>
<td>0.9</td>
<td>-6.8</td>
<td>1.3</td>
<td>1.7</td>
<td>0.0</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>CEE</td>
<td>5.4</td>
<td>3.2</td>
<td>-3.6</td>
<td>4.5</td>
<td>5.3</td>
<td>1.9</td>
<td>2.9</td>
<td>4.0</td>
</tr>
</tbody>
</table>

*Source: IMF, World Economic Outlook, April 2012, Appendix, p. 192*

#### Table 4 Unemployment rate in CEE (in %)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serbia</td>
<td>18.1</td>
<td>13.6</td>
<td>17.4</td>
<td>20.2</td>
<td>20.0</td>
<td>19.4</td>
<td>18.8</td>
</tr>
<tr>
<td>Croatia</td>
<td>9.0</td>
<td>8.4</td>
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<td>11.8</td>
<td>13.2</td>
<td>13.4</td>
<td>12.7</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
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<td>n. a</td>
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<td>27.2</td>
<td>23.0</td>
<td>21.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Montenegro</td>
<td>n. a</td>
<td>n. a</td>
<td>11.2</td>
<td>12.2</td>
<td>11.5</td>
<td>11.3</td>
<td>11.1</td>
</tr>
<tr>
<td>FYR of Macedonia</td>
<td>34.9</td>
<td>33.8</td>
<td>33.0</td>
<td>32.0</td>
<td>31.0</td>
<td>30.0</td>
<td>29.0</td>
</tr>
<tr>
<td>Romania</td>
<td>6.4</td>
<td>5.8</td>
<td>6.9</td>
<td>7.3</td>
<td>7.4</td>
<td>7.2</td>
<td>7.1</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>6.9</td>
<td>5.6</td>
<td>6.8</td>
<td>10.2</td>
<td>11.2</td>
<td>12.0</td>
<td>11.9</td>
</tr>
<tr>
<td>Hungary</td>
<td>7.4</td>
<td>7.8</td>
<td>10.0</td>
<td>11.2</td>
<td>10.9</td>
<td>10.6</td>
<td>9.6</td>
</tr>
<tr>
<td>EU27</td>
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<td>9.0</td>
<td>9.7</td>
<td>9.7</td>
<td>10.3</td>
<td>10.3</td>
</tr>
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</table>

*Source: Statistical office of the Republic of Serbia, Ministry of finance, European Commission, European Economic Forecast, spring 2012*

#### Table 5 Economic indicators in Serbia

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP, per capita, in EUR</td>
<td>3,889</td>
<td>4,546</td>
<td>4,189</td>
<td>4,138</td>
<td>4,445</td>
<td>4,809</td>
<td>5,255</td>
</tr>
<tr>
<td>GDP, real growth (y.o.y, in %)</td>
<td>6.9</td>
<td>5.5</td>
<td>-3.0</td>
<td>1.5</td>
<td>3.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Balance of trade in goods, in mil. of EUR</td>
<td>-7,074</td>
<td>-8,152</td>
<td>-2,266</td>
<td>-2,708</td>
<td>-2,958</td>
<td>-2,964</td>
<td>-3,014</td>
</tr>
<tr>
<td>FDI, in mil. of EUR</td>
<td>1,820</td>
<td>1,824</td>
<td>1,317</td>
<td>1,010</td>
<td>1,347</td>
<td>1,567</td>
<td>1,828</td>
</tr>
</tbody>
</table>

*Source: Statistical office of the Republic of Serbia, Ministry of finance, revised memorandum on the budget and economic and fiscal politics for 2011, with projections for 2012 and 2013*
Table 6 Labour market in Serbia

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed population, in 000</td>
<td>2,733</td>
<td>2,630</td>
<td>2,655</td>
<td>2,821</td>
<td>2,616</td>
<td>2,396</td>
</tr>
<tr>
<td>Employment rate (in %)</td>
<td>42.3</td>
<td>40.4</td>
<td>41.8</td>
<td>44.4</td>
<td>41.2</td>
<td>37.9</td>
</tr>
<tr>
<td>Unemployed population, in 000</td>
<td>719</td>
<td>693</td>
<td>585</td>
<td>445</td>
<td>502</td>
<td>568</td>
</tr>
<tr>
<td>Unemployed rate (in %)</td>
<td>20.8</td>
<td>20.9</td>
<td>18.1</td>
<td>13.6</td>
<td>16.1</td>
<td>19.2</td>
</tr>
</tbody>
</table>

Source: Statistical office of the Republic of Serbia

Table 7 The beginning of digital TV in EU

<table>
<thead>
<tr>
<th>Country</th>
<th>The beginning of digital TV signal</th>
<th>Switchover from analogue to digital broadcasting</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>1998</td>
<td>2012</td>
</tr>
<tr>
<td>Sweden</td>
<td>1999</td>
<td>2007</td>
</tr>
<tr>
<td>Spain</td>
<td>2000</td>
<td>2010</td>
</tr>
<tr>
<td>Finland</td>
<td>2001</td>
<td>2007</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2001</td>
<td>2008</td>
</tr>
<tr>
<td>Germany</td>
<td>2002</td>
<td>2008</td>
</tr>
<tr>
<td>Belgium</td>
<td>2002</td>
<td>2011</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2003</td>
<td>2006</td>
</tr>
<tr>
<td>Denmark</td>
<td>2006</td>
<td>2009</td>
</tr>
</tbody>
</table>

Source: Guzina B., The right way of Serbia- radio and TV digitalization, p.1

Table 8 Strategy for switchover from analogue to digital broadcasting of TV programs in CEE, adopted year

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia, Lithuania</td>
<td>2004</td>
</tr>
<tr>
<td>Malta, Poland</td>
<td>2005</td>
</tr>
<tr>
<td>Latvia, Slovakia, Slovenia</td>
<td>2006</td>
</tr>
<tr>
<td>Hungary</td>
<td>2007</td>
</tr>
<tr>
<td>Albania, Bulgaria, Croatia, Cyprus, Czech Republic, Montenegro</td>
<td>2008</td>
</tr>
<tr>
<td>Bosnia and Herzegovina, Romania, Serbia</td>
<td>2009</td>
</tr>
</tbody>
</table>

Source: CEE Digital Switchover Outlook 2 010, KPMG, p.7

Table 9 The beginning of digital TV signal in CEE

<table>
<thead>
<tr>
<th>Country</th>
<th>The beginning of digital TV signal</th>
<th>Switchover from analogue to digital broadcasting</th>
</tr>
</thead>
<tbody>
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</tr>
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<td>FYR of Macedonia</td>
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<td>-</td>
</tr>
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<td>-</td>
<td>2012</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>-</td>
<td>2012</td>
</tr>
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Source: Guzina B., The right way of Serbia- radio and TV digitalization, p.2

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Abstract: The development of the informatics industry and the internet have brought new approaches and new views on the problems of copyright protection. In the last year we have witnessed the expansion of law regulations regarding intellectual property, which received a very large (negative) public reaction. In this paper an analysis of some legal solutions is given, as well as some opinions of both advocates and adversaries of these solutions, from a technical, economic and ethical point of view.

Keywords: Digital Copyrights, ACTA, SOPA

1. INTRODUCTION

Although it may at first seem contradictory, technological development, based on innovation, patents and copyrights, has to the copyright, as a legal boundary, brought big problems, and there is more and more demands for its abolition. On the one hand, thanks to the Internet, it is difficult to have a monopoly on information, ideas, cultural, scientific or entertaining content. On the other hand, there is no longer any kind of goods that cannot be falsified, from the fashion industry to medicine. According to the analysis of the MIT Institute, forgeries are as much as 15 to 20 percent of the entire Chinese production, or about 7% of overall world trade [1].

The laws on protection of intellectual property, copyright and related rights, are not a new phenomenon. Patent laws draw their roots back to the 16th century in England, but not as a result of the invention, but rather as a monopoly (royal) privilege [2].

The term intellectual property is more recent and appears in the second half of the 19th century, and its protection becomes subject to the legislation of the leading European countries in that era. United International Bureau for the Protection of Intellectual Property Rights was established in Bern, in 1893, whose successor is World Intellectual Property Organization - WIPO, founded in 1967, as an agency of the United Nations.

In addition to WIPO, many multilateral international agreements point out that intellectual property protection is essential to the preservation of economic growth. The laws governing this area should provide moral and economic support to the creators of intellectual property, as well as certain rights to public access and use of the property, to promote creativity, dissemination and application of the results, but also fair trade which contributes to the economic and social development [3].

The development of the IT industry has brought some new approaches and new views on this issue. The original idea of protection and evaluation of efforts of the authors – the owners of intellectual property, is now being questioned, as the information released is essentially free for all.

Preventing the use of information and ideas can be counterproductive to the progress of society as a whole. Certain economic analysis shows that the initiatives for the protection of intellectual property rights, fostering creativity and innovation, bring mutual benefit to society. The neglect of that general use, or basic human rights, at the expense of the copyright holder, is a subject of much dispute of attempts to regulate the protection of intellectual property.

In addition, different countries, depending on their size, development, traditions and interests, can have completely different approaches to this issue.

Remarks appear in semantic and legal aspects. The term intellectual property itself is a debatable term, as here rights are included under property, but not intellectual work. A patent can be bought and sold, but the intellectual work that accompanies it can't. Therefore, a better name might be an intellectual monopoly instead of intellectual property. Some recommend avoiding this generic term because of the difference that exists between the laws of copyright, patents, trademarks and trade, etc. Namely, the reasons for applying the patent rights are the right to the exclude others from manufacturing, using, selling or importing a given invention. In commercial law, that is the prevention of others to use similar labels, but not to produce or sell similar products under a different label. Reasons for copyright protection are the protection of authors of literary, musical, artistic and other published and unpublished intellectual works. Copyright licenses grant something to be done with them, while the patent licenses are usually formulated as prohibitions.

The subject of this work is the analysis of some recent legislation in this area, as well as the attitudes of the proponents and opponents of such solutions, from technical, economic and ethical aspects.

2. NEW REGULATIONS IN THE AREA OF INTELLECTUAL PROPERTY

In recent years we have witnessed the expansion of legislation related to intellectual property. Application of existing laws on new objects of protection (databases, for example), new activities related to existing items, change
of terms of the protection, removal of restrictions and limitations of exclusive rights, as well as the inclusion of organizations as legitimate creators and owners of their working staff, are partly the reason for expansion of legislation.

Everything can be patented and protected, which leads to some controversy when it comes to some of the recent patents of software algorithms or business models, for example, or the marathon litigation among manufacturers of IT equipment.

According to some, the expansion of the law in this area undermines the balance between encouraging creativity and innovation, as well as the spread of new ideas in the public domain for the common good. According to them, most of the new ideas come from already existing ones, and increasing number of laws in this area threaten that, because they assign minority the right to dispose the resources on which many depend. This may have implications for political and economic freedom in society.

Modern technologies have brought new attempts to use software tools for DRM (Digital Rights Management), which limit the copying and use of digital works [4]. Since individuals indicated on how these measures can be bypassed, in the U.S. in 1998., the government passed the Digital Millennium Copyright Act (DMCA), which provides penalties for those who are trying to prevent the protection of digital content in this way.

At the same time, the growth of the Internet, especially browsers such as Kazaa and Gnutella, bring new challenges. In the fight against "piracy" specifically are included organizations and associations in the entertainment industry, such as the Recording Industry Association of America. The result of that is that some of the internet services for content exchange are being excluded (Napster), some individuals are subject to court judgments for violating copyrights by sharing files on the Internet, but the open and decentralized nature of the Internet makes all legal action against potential violators even more problematic.

2.1. SOPA and PIPA

Stop On-line Piracy Act (SOPA) is a law that was, in the United States House of Representatives, proposed in October 2011. with the goal to provide additional capabilities for U.S. legislation to combat Internet sites that deal with electronic selling of counterfeit goods and protected intellectual property. To a good extent, it is based on a similar law proposed in the U.S. Senate, May 2011., which is called the PROTECT IP Act (Preventing Real On-line Threats to Economic Creativity and Theft of Intellectual Property Act), or PIPA. The provisions of this law allow court orders to prevent U.S. advertising sites and services for payments that do business with shady sites, as well as search engines to link to those sites, and the Internet service providers are required to block access to such sites. Also, the law should have expanded the jurisdiction of existing criminal laws to downloading copyrighted content, with a prison sentence of up to 5 years, as in the case of selling counterfeit drugs, military materials or other goods [5].

While the existing laws (as the DMCA, for example) are focused on removing specific, unauthorized content from the Internet, SOPA and PIPA are aimed at the prevention of work of platforms and sites where these contents are located.

As the main objectives of the new law, the proponents have emphasized the need to protect intellectual property of American organizations, which is the basis of a new employment, market competitiveness and one of the drivers of the U.S. economy. Just the film industry in the U.S. employs about 2 million people and 95,000 small businesses [6]. The protection is especially required of foreign companies that are not subject to the jurisdiction of U.S. law. That is why copyright holders see brokerage firms, which provide e-commerce facilities, as the only accessible defendants.

Proponents of the law, media and pharmaceutical companies, associations like the Motion Picture Association of America, and the United States Chamber of Commerce, claim that this law will protect, especially from the activities of non-US websites, intellectual property market and jobs and income of the related industries, which employ more than 19 million workers in the U.S. and generate nearly 8 trillion USD gross revenue.

At the same time, they especially emphasize the example of a Google company that has made a deal with the U.S. Justice Department about $ 500 million payment, for participating in the advertising of illegal importation of drugs from Canada into the United States.

Opponents claim that the proposed laws threaten innovation and freedom of speech, because they allow blocking of access to the complete domain, although copyrighted material may exist only within a single website page or blog, for example [7].

Opponents of the law ask: how would it look like if the government of another state has made a list of undesirable American newspapers, for example, that their judgement finds that it violates the privacy of celebrities, or if they would block American sites, which by their judgement is advocating hate speech?

Supporters of the law, on the other hand, claim that free speech is not the same as lawlessness on the Internet. The openness of the Internet and keeping of intellectual property rights do not conflict, because there is no law that protects the classical theft of the goods off the truck.

With the application of the law, first websites that would be issued are the websites that hosts the content of their users (e.g., YouTube), which could be completely closed because they hold the responsibility for what is contained in these contents (because of something that might be published in a single blog), and thereby the entire online community would suffer the damage. A particular problem and the impact on the overall functioning and the
philosophy of the Internet is the possible ban on linking to other sites, and the requirement for browsers to delete domain names would lead to some kind of internet censorship.

Proponents of the law claim that some kind of filtering on the Internet already exists, in some countries certain websites are banned (Google has blocked some sites at the request of China, and Denmark, Finland, Ireland and Italy have blocked The Pirate Bay website after the court decision).

This law would abolish the protection from liability that the Internet websites had under the DMCA. Namely, the DMCA contains the On-line Copyright Infringement Liability Limitation Act, which allows copyright owners, who consider themselves wronged by publishing their content on certain sites that require the removal of content over time. This, in some ways, frees the owners of these sites from the current responsibility for the content on them. SOPA does not provide this option, the responsibility is entirely on the site, that can be completely blocked by a court decision.

Control of user contents implies high costs, which discourages potential investors in this type of business. One study found that nearly all of the 200 polled investors would stop investing in digital media if the law comes to life, and that more than 80% of polled would rather invest in a risky economy with the current laws than a strong economy with the law proposed like this. Without such legal restrictions, it is estimated that the expenditure would be increased by about 115% [8]. Google, Facebook, Twitter and other companies sent a letter to the U.S. Congress, in which they support the goals of the bill, but express the reservations about the manner of determining the responsibility for monitoring of web sites [9].

Complaints were related to the imprecision in the wording of some provisions of the law, as well as the lack of connection with reality of the Internet technology, which can have an impact on the disappearance of e-commerce or even normal Internet use [10]. This may result in a reduction in the number of employees and reduction of investment in this area, which had flourished in the last decade.

Opponents of the law point to certain technical and security problems of application of this law. The ability to block access to suspected sites by the Internet service provider requires checking and blocking of IP addresses of users. However, it can also lead to the use of tools for the analysis of the entire content that is being transferred, the so called “deep packet inspection”, which again is linked to the invasion of privacy.

Consequence of the application of the law could be a movement of real offenders towards the classified networks, and increased supervision would be practically exercised over the less technically educated Internet users. DNS (Domain Name System) servers that translate domain names into IP addresses, should, according to the original bill, block the access to the IP addresses of violators sites. However, they are designed in a way that if they do not do their job, they direct a request to another DNS, and the application of the law could undermine the integrity of the entire system of domain. On the other hand, the American users would be able to switch to DNS services in other countries who offer encrypted communication, or the U.S. service providers could move to another country. Therefore, at the beginning of 2012, it was announced that the provisions related to DNS redirection would be drafted out the law.

The problem lies in the fact that it is, from a security standpoint, operationally difficult to distinguish between errors that occur because of communication with the server being blocked by a court, or a server controlled by hackers.

There is a doubt in the efficacy of application of this law, because the closed sites may appear for a short time under a new name. It takes enormous resources to control millions of offers that appear every day on sites like Google or Facebook, and pirates, even if they are found, can just change the site. DNS filtering is usually too broad or too narrow, it’s either too small or it’s blocking too much. Contents on the Internet are changing its place and nature rapidly, and so the DNS filtering is ineffective.

Under the impact of this law could be found and projects of open source software, and some manufacturers, such as Mozilla, whose browser Firefox, has an option MAFIAAFire Redirector, that redirects users to the new locations of the domains, closed by the U.S. government.

The American Library Association has expressed concern that a broader interpretation of “willful violations” of copyright law, even in cases of non-commercial download of the content, even libraries could be prosecuted.

Some law professors criticized the lack of transparency of the future application of the law, and there is also a political dimension to this problem, because the servers in certain countries could represent the problem, which could fall under this law because of the impact of copyright law, which are intended to dissidents in those countries and whose founder is the U.S. government. Each monitoring of the websites with the contents of blogging would inevitably affect the openness in expressing their own opinions and political views contained therein.

In addition to promoters and lobbyists in the House, the bill was supported by many organizations that base their activities on copyright law of: Motion Picture Association of America, Recording Industry Association of America, Entertainment Software Association, Viacom, and by other companies from Film, TV and Music industry, and also by the companies such as Nike, L’Oréal, and Acushnet Company, which have their own protected trade names.
U.S. Chamber of Commerce and many unions and associations have publicly supported the bill, and companies like NBCUniversal, Pfizer, Ford Motor Company, Revlon, NBA and Macmillan US joined the support in September 2011.

In November of that year the Business Software Alliance (BSA), gave its support as well, but noting that some definitions and some solutions should be worked on more. Something similar happened with the Entertainment Software Association, which started the slow distancing of software and Internet-oriented companies away from the Bill.

Proponents of the law have provided the appropriate legal interpretations set against all opponent's remarks, related to Internet censorship, freedom of speech, the constitutionality and the like, reducing the problem to the protection of intellectual property, which normally exists in the legislation of the United States, only to now include the Internet, as a new environment.

In addition to political opponents of the bill, in the House of Representatives, as opponents have emerged and companies such as Google, Yahoo!, YouTube, Facebook, Twitter, AOL, LinkedIn, eBay, Mozilla Corporation, Wikipedia, as well as the organizations for the protection of human rights Reporters Without Borders, Electronic Frontier Foundation (EFF), ACLU, and Human Rights Watch, and the editorial board of the famous newspaper New York Times, Los Angeles Times etc [11].

Kaspersky Lab has, in protest against the proposed law, terminated its membership in the BSA, which supported the law.

Internet companies and their investors have supported the protests in order to protect their own interests and protect the entire growing economies, based on the Internet. The new front has practically been opened by the Internet companies against the traditional copyright holders of the film and music industry.

As noted, objections of the opponents of the law are mostly based on the idea of control of the Internet, creating a “black list” of unsuitable websites, and the assumed positive financial effects of the application of this law are brought into question, with emphasis on issues that will bring when it comes to investing in Internet technology.

According to them, asking search engines to delete a domain name is the beginning of Internet censorship, and they even disagreed with amendments that proponents of the law offered because “the key issues remain – blocking American citizens to access the websites, the introduction of costly self-control for the Internet companies and too big authority of the Ministry of Justice to manage the Internet”.

This set in motion a series of public figures, actors and artists, who might otherwise be interested in the implementation of this law, to react against it, because a substantial part of their activities are increasingly conducted via the Internet.

January 2012., the most extensive Internet community protest was set in motion, coordinated by cessation of about 7000 sites, writing petitions, collecting signatures against the introduction of legislation ( 7 million signatures from the U.S. was collected through an on-line survey, which was supported by Google), threats of boycotting companies that support the legislation, hacking on their websites, etc. It is estimated that only a message on the Wikipedia website “Imagine a world without free knowledge”, was seen, at that time, by more than 160 million people.

In response to the protests, the Recording Industry Association of America (RIAA) states that “it is dangerous when the platforms that serve to inform deliberately distort the facts in order to prod and misinform their customers, and it's hard to fight with the misinformation when the owners of those platforms beyond them.”

November 2011., the EU Parliament passed a resolution expressing the need to protect the integrity of the global Internet and freedom of communication, through refraining from the application of unilateral measures of revocation of IP addresses and domain names.

After a petition with over 100,000 signatures, addressed to the White House to protest against the Bill, January 2012., the administration of president Obama has said they will not support legislation that could lead to Internet censorship, limitation of innovation or reduction of Internet security, and that they support all the parties in an effort to reach the appropriate legal solution to combat Internet piracy outside the United States.

At the end of January 2012., the Legal Committee of the U.S. House of Representatives has postponed consideration of this legislation to reach a broader agreement.

As an alternative, the new law was proposed, the so called OPEN (On-line Protection and Enforcement of Digital Trade Act), for which proponents believe it will have more supporters than previous ones, because it provides better transparency and instead of the Ministry of Justice, the authority to take action against the alleged sites is transferred to the International Trade Commission [12].

2.2. ACTA

In recent years, the holders of the copyright in the publishing industry in the U.S. and the EU are seeking ways to protect their intellectual property and, ultimately, their business model. In addition to legislation, attempts to regulate this issue were held by various international bodies, including the WTO (World Trade Organization - Agreement on Trade-Related Issues of Intellectual Property – TRIPS, from 1994.), the World Intellectual Property Organization, meeting of the G8 member countries, etc.
**ACTA (Anti-Counterfeiting Trade Agreement)** is a new attempt to regulate this issue at the global level. It is an international treaty whose objective is to establish international standards and the legal framework for the protection of intellectual property rights, whether in terms of copyright, drugs or counterfeit goods. ACTA is the result of negotiations between certain groups of industrialized countries outside of existing international organizations (WIPO and WTO–TRIPS), from which were excluded representatives of civil society and developing countries. The published goal is the creation of a new standard of intellectual property protection, over the currently existing international standards. This has already been the practice in the United States, because all the signatory countries of free trade agreements with the United States, had to accept commitments on intellectual property rights which are significantly greater than the obligations set out in TRIPS.

Although it has been prepared since 2006., the contract was only in October 2011. signed by Australia, Canada, Japan, South Korea, Morocco, Mexico, New Zealand, Singapore, Switzerland and the United States; and in January 2012., 22 countries, EU members. No State party has yet ratified this treaty, which in order to come into effect requires ratification by at least 6 countries, and it would be applied only in those countries. The agreement is open to accession by 1st May 2013th year for all member states of the World Trade Organization (WTO), and after that date, access is possible with the approval of the specially formed ACTA committee.

In addition to governments of these countries, large multinational companies from the U.S. have been consulted in the drafting process of the contracts, (Pharmaceutical Research and Manufacturers of America, Google, eBay, Intel, Dell, News Corporation, Sony Pictures, Time Warner, Verizon), as well as certain associations (International Intellectual Property Alliance which consists of the Business Software Alliance, Motion Picture Association of America and Recording Industry Association of America).

Although the proposed contract term may suggest that the contract will be preventing counterfeiting of physical goods, soon it was announced that it would be of a broader scope and will include distribution via the Internet and other information technologies.

One of the things that “leaked” during the negotiations and intrigued the public was by the request of the copyright holders from “content industries” that ISPs (Internet Service Providers) cooperate with right holders in the removal of incriminating material, or to mandatory filter and revoke Internet connections in case of copyright infringement. Efficiency offiltration, because of possible encryption of transferred content, would not be great without a deeper control of Internet communication, and this is an attack on civil liberties, privacy and the future of the Internet generally.

The final text of the treaty was published on 15 April 2011. and contains 45 articles, divided into 6 sections [13].

Chapter one, the Initial terms and general definitions, describes the subject of the contract, as well as links to other contracts.

Chapter Two, the Legal framework for enforcing the protection of intellectual property, it's consisted of 5 sections:

- S 1: General obligations and compliance of severity of violations of intellectual property rights with the applied measures and penalties
- S 2: The possibility of legal prosecution of the offense, starting the procedure, destruction of counterfeit goods, etc.
- S 3: Customs procedures (e.g., suspicious goods in the personal luggage and in non-commercial quantities are not subject to this agreement)
- S 4: The prosecution and punishment of “deliberate counterfeit of goods or violation of copyright and related rights”
- S 5: Enforcement of intellectual property protection in the digital environment

The third and fourth chapters regulate cooperation among the signatories to the practical implementation of contracts, information sharing, and building technical capacity.

The fifth chapter discusses the institutional organization and defines its governing body - ACTA Committee, which makes decisions by consensus, next to the WTO, WIPO or the UN, explaining that the need for a different approach other than what these organizations have.

The last chapter contains the final provisions, signature and coming into effect, the way to access/withdrawal, the way of committing changes, language, place of deposit contracts (Japan) and the like.

Although the negotiations were held in secret, the draft of the agreement that came out to the public immediately provoked a negative reaction from the public and demands for their change.

November 2008. The European Commission has described ACTA as an attempt of enforcement of intellectual property rights by countries that see the intellectual property rights as a key instrument of its own development. The draft text of the treaty, which leaked in March 2010., showed that it requires the prosecution to encourage and assist counterfeiting trademarks or any kind of copyright piracy on a commercial basis.

Soon the European Parliament resolution was released on the status of negotiations on the ACTA treaty, which states that no specific agreements should circumvent the usual process of harmonization of regulations in the EU, including the field of intellectual property rights, and their enforcement must not obstruct innovation, competition, free flow of information and so on. This resolution
requires the European Commission and the European Council, in accordance with the Treaty of Lisbon in 2001, to permit public access to the text of the agreement, and regret is expressed because the discussions were not lead within the defined international bodies such as the World Trade Organization and the World Intellectual Property Organization (WIPO, WTO), which have established mechanisms for informing the public and consulting.

ACTA treaty, particularly in Europe, has caused more attention than SOPA law, due to the large impact that it may have due to its international nature, and especially because of the similarity in the way of adoption, especially when it comes to the lack of transparency in its definition.

The public has split even for this contract, the proponents and opponents, with a similar argument as in the SOPA and PIPA legislation.

Proponents of this Agreement (MPAA and Pharmaceutical Research and Manufacturers of America) see it as a response to the global increase in sales of counterfeit goods and pirated versions of copyrighted works.

Proponents in Europe claim that the citizens will benefit from it because it, as an international trade agreement is aimed at ensuring the global application of high European standards in copyright protection law, protects the fundamental European raw materials - ideas and innovations.

The European economy can remain competitive only if it is based on innovation, creativity, quality and exclusivity of the brands. Europe is losing billions of euros a year because of counterfeit goods, according to data from the national customs services, quantity of counterfeit goods entering the EU has tripled since 2005, by 2010. Intellectual property protection means protection of jobs in the EU, as well as security products and customers [14].

Opponents claim that this contract agreement has a negative impact on basic human rights such as freedom of expression and privacy. They say that ACTA contains several elements that pose a potential threat to civil liberties, innovation, the free flow of information, as well as developing countries, which this contract prevents in choosing the options that fit their priorities and level of economic development. Especially criticized is the way of its adoption, which from that process has excluded the organizations of the so-called civil society, the general public and developing countries [15].

Excluding the public from the negotiations, particularly civil society and developing countries, until the publication of the WikiLeaks [16], that was the first reason for criticism. For example, the controversy was sparked by the fact that the EU Council published the official report for press release about the ACTA in the report of agriculture and fisheries.

The European Commission, to which the critics were addressed to, responded that it was never the intention to hide the fact that it's being negotiated, as well as the objectives of the negotiations, and that a certain amount of discretion is common when the negotiations are about things with such economic burden.

At that time, during the 2008., many organizations around the world sought the disclosure of the proposed contract (Consumers Union, Electronic Frontier Foundation, Essential Action, IP Justice, Knowledge Ecology International, Public Knowledge, Global Trade Watch, US Public Interest Research Group, IP Left, Canadian Library Association, Consumers Union of Japan, National Consumer Council (UK), Doctors without Borders) etc.

November 2008,. Foundation for a Free Information Infrastructure has demanded the disclosure of certain documents of ACTA agreement from the Council of the EU, but their request was rejected, because the “release of these information would influence the course of negotiations, weaken the position of the EU and impact the relations with other parties.” It was only in March 2009., after a European Parliament resolution that required greater transparency in public affairs, the European Commission has been invited to publish all documents related to the negotiations.

In the United States, the Bush and Obama administrations have refused to publish the text of the treaty, because “it may be detrimental to national security.”

Opponents criticize the deal because of his bad influence on fundamental civil and digital rights, including freedom of expression and communication privacy. It is claimed that ACTA creates a culture of suspicion and surveillance, apropos standards that do not reflect the principles of democracy, free markets and civil liberties.

Free Software Foundation (FSF) claims that ACTA is a threat to free software, because it considers the freedom needed to produce free software dangerous, instead of creative and innovative.

ACTA may require that Internet service providers do not hold a free software that can enable access to protected media, or to prevent the free software distribution via P2P technology (BitTorrent), or make it harder for users of free operating systems to reproduce limited media (because DRM protected media could not be legally reproduced using free software).

March 2010., the European Parliament passed a resolution criticizing the ACTA and it required some changes in the content and procedures of contracts, in order to respect the fundamental rights. Although the resolution was followed by explanations of the proponents that ACTA will not oversee the Internet, that it is not contrary to EU law, it is not favoring the industry over basic human rights, that does not preclude the exchange of (legal) content on the Internet, and particularly it doesn't prevent people from poorer countries to buy cheaper drugs, the signing of the agreement by the EU and its member states.
has caused an avalanche of protests across Europe, as well as the resignation of a rapporteur in the European Parliament. The newly appointed Rapporteur also spoke out against the contract, because the potential threats to civil liberties are far greater than the potential benefits, which the contract would bring.

In more than 200 European cities on 11. February 2012, the protests were held against the ACTA agreement, the result of which is that the majority of European countries that have signed the treaty, has postponed its ratification under the pressure of public protests in those countries and the European Commission has asked the European Court of Justice to check whether ACTA violates fundamental human rights and freedoms of EU citizens.

Mass protests have lead Neelie Kroes, Vice-President of the European Commission, responsible for the Digital Agenda, to declare: “We see thousands of people protest against the rules that they consider that are limiting the openness and innovation of the Internet. It’s a completely new political voice and power, which wants the Internet to be a place of freedom, openness and innovation to all citizens, and not just for the technological vanguard.” [17]

The agreement was discussed at five committees of the European Parliament (for development, civil liberties, Industry, Legal Affairs and International Trade), which proposed its rejection on June 2012. [18].

The official position of the U.S. government in June 2012 was that ACTA will help in the protection of the intellectual property that is essential for works in an innovative and creative American industry. At the same time, ACTA recognizes the importance of privacy and freedom of expression on the Internet, the contractors are invited to protect these values [19].

2.3. The law on copyright protection of RS

The National Assembly of Serbia has, on 26 December 2011. adopted the Law on Amendments and Supplements to the Law on Copyright and Related Rights (Official Gazette no. 99/11). This is the third change of the law in the past 8 years, a total of nine since the first adoption law in 1929. Frequent changes indicate about an effort of the government to cope with the challenges of the information age, and as well to harmonize national legislation with the regulations of the European Union and the World Trade Organization. Adoption of this Act the preconditions for the various segments of the copyright legal matters are created, primarily in the area of copyright restrictions, succession rights, the rights of producers of databases, the field of copyright and related rights, and so on, the interests of authors and holders of related rights in Serbia are fully and better protected than ever.

The most significant amendments to the Law on Copyright and Related Rights are related to the standards that govern the limitations of copyrights, because in certain situations social interests necessitate the need of suspension of the monopoly which authors and holders of related rights enjoyed in relation to their work. These are, for example, the interests of public safety and justice, promotion of school education, public information, encouraging and spreading the computer literacy, etc. When mentioned interests require that, the law limits the copyright by allowing use of another author's work without permission of the original author and without paying royalties. One of these limitations of the copyrights is the one that says that it is permitted to duplicate copies of published works without the author's permission and without paying royalties, if it appears as an integral part of a current event that is reported. This limitation of the copyrights is established with the goal of free and unhindered public reporting on current events. Law on Amendments and Supplements points out, that this limitation of copyrights applies not only to the press, radio and television, as it was the case, but also to "other media", especially the Internet, nowadays most interactive medium on world.

The existing Law on Copyright and Related Rights envisages that the short excerpts of published works can be used for purposes of education, examination, or scientific research. Amendments of the Act regulate this restriction in more details. It is now envisaged that in the above mentioned purposes, copyrighted works can be performed or presented in their integral form, under condition that they are published and that it is done for non-commercial purposes. The same applies to the public performance or presentation of published works for school events, such as drama performances or concerts. The only requirement is that the performers do not receive compensation for their work.

One of the limitations of copyright, provided in the existing law, is that which says that it is permitted to individual to, without the author's permission and without paying royalties, reproduce copies of the published work for personal non-commercial use. This limitation of copyrights, at the time when the copying of copyright works is easy of good quality and relatively cheap, seriously undermines the legitimate interests of the author. By the Law on Amendments and Supplements of the Law on Copyright and Related Rights it is envisaged that the above mentioned limitation does not apply to the reproduction of written works in the scope of the whole book, unless the copies of that book are sold out in at least a year.

Amendments to the Law on Copyright and Related Rights Act regulates the issue of the protection of databases. It is envisaged what is all included in the protection of the databases, which property rights its creator enjoys, and which authorized user of the database enjoys.

Technological protection measures of optical drives from unauthorized copying, which often their manufacturers resort to, are desirable because they prevent piracy. However, in some cases, the law limits the copyright and says that it is allowed without the author's consent and without payment of royalties to copy someone else's copyrighted work, for example, for purposes of
conducting a judicial or other proceeding. Then, because of technological protection with which an optical drive is provided, a government body is not able to copy it, although it is entitled by law. The current law does not say whether the holder copyrights in such situation is required to remove the existing technological measure. Amendments to the Act this issue is in detail regulated in such a way that the copyright owner that is using technological protection measures is required to remove such measures in the short term and thus provide the access to copy copyrighted work to persons who by law are entitled to have such access.

3. LEGAL, ETHICAL AND SEMANTIC ASPECTS

Intellectual property does not have the characteristics of exclusiveness as in the case of tangible property, where the same computer, for example, can be owned and used by one person at the same time. An unlimited number of copies of some software can be made, and that it has no impact on other users of the software.

The problem arises with the copyright for databases, because there is a dilemma as to whether the unauthorized use of information stored in databases is a violation of copyright. In a way, it would be an additional right, next to the one that relates to the structure of the database, which is one's original copyrighted work. Exclusive rights cannot cover all the elements of any work protected by copyright, because copyright does not arise from the efforts of its creation, and in the case of a database or a collection of information, only the originality of selection or the way of sorting the information is under copyright law. This gives the advantage of the availability of information to the public, in relation to investments.

Direct benefits of the exclusive rights, for their owners is the ability to exercise certain types of annuities, which many economists consider dangerous. Many associations have been formed for this purpose, such as the aforementioned BSA, which claims to represent the interests of the commercial software industry, or RIAA, which represents the interests of the music publishing industry. As the enforcement of intellectual property rights is expanding in their favor, thus reducing the basic rights of users – the general public. The public is increasingly limited by law in the use of the published information, if it is not compliant with the requirements set by the holder of these rights. Price of that is not easy to calculate.

It is important to stress that there are many other functional economic models, alternative to the model of intellectual property (utilization, distribution, advertising, headings, etc.) which doesn't deny freedom to copy, use, modification and distribution of the published information, and yet they bring financial compensation to the authors.

The term intellectual property has been criticized because the inclusion of the word property implies the expansion of the concept of exclusive rights on intellectual products, sometimes even more limited way than when it comes to physical goods. Namely, the patent rights are often limited in time, and the laws that govern the physical property rights rarely prohibit the sale or modification of physical copies, which is not the case with intellectual property laws.

The idea in the form of information is considered to be fundamentally different entity from the physical property – once it appears it can be used any number of times, and it does not reduce its original value. There is no person entitled to all the benefits of certain ideas, even when he is the creator of the idea. Therefore, the property is not a good term, because it always implies on the theft.

The term intellectual property is not good because it is trying to under the same criteria broaden the copyrights, trademarks, patents and other forms of exclusive rights [20].

According to Stallman, patents and copyrights (which contain the intellectual component) are of limited duration, while the trademarks are (unlimited) mainly trademarks and contain no intellectual content [21].

Opponents of the term suggest alternative terms, such as the monopoly on information and intellectual monopoly, or even more sarcastic - Intellectual Protectionism and Intellectual Poverty, with the same initials IP (Intellectual Property).

The first objections from the ethical aspect, relating to intellectual property laws were related to the pharmaceutical industry. Law enforcement of intellectual property rights allows the companies to charge the cost of research and development. But it can also mean the elimination of one who cannot afford these products from the market, which in this case can be lifesaving drugs.

The concept of intellectual property rights establishes a direct link between stimulation for innovation and new product pricing. The higher the price of the product to reach the market, the greater the motivation to invest in research and development. It's not a good environment for investment in research and development into products of social importance of poor populations [24].

4. OTHER LIMITATIONS

Some critics suggest that the intellectual monopoly is threatening the public interest, because they are preventing public advancement in general, and in particular can have a detrimental effect on the health of the population (for example, pharmaceutical patents) [22].

Possible conflicts between the respect and implementation of the current system of the protection of intellectual property and other human rights are observed, and it is advocated for the management of intellectual property, not only by economic goals, but also as a social product. Otherwise there is a risk of violation of human rights to food, health, culture and scientific findings [23].
The tendency to spread the scope, as well as the duration of protection of intellectual property is criticized (colors are becoming trademarks, living organisms are patented and the like.)

A particular limitation of legislation in this area is the focus on the individual, or group, original work of the authors in regard to copyrights, which excludes the entire communities and their culture.

5. CONCLUSION

We are witnessing a profound change on the global level, when it comes to evaluating the size and potential of the companies. Companies in the field of information technology and Internet business (Apple, Google, Microsoft) occupy leading positions on all ranking lists of the success. The changes have brought that the seemingly legitimate right of organizations to protect their intellectual property, is affecting the operations of a large number of important organizations related to the Internet. Protests against the attempts of the legal standardization of protection of the intellectual property rights, supported, and largely initiated, by leading Internet companies, point to the fact that the Internet economy leads to the new distribution of economic power. The political consequences are not neglected, because the protests are supported by the Internet, during the period of deep systemic economic crisis and general discontent, have obviously contributed that the governments of the signatory countries are being cautious and at this moment give up on the proposed legislation and already signed contracts.

Analysis of the above mentioned issue, presented in this paper, suggests that organizations, that want to protect their intellectual property, should rely more on their own protection solutions, with a careful assessment of the importance of certain markets and the selection of appropriate business models, because in the near future legislation will not be able to offer solutions that would generally be acceptable.

Simply put, they all need to be aware of the fact that the world is changing and that the rules that were valid at the time of vinyl records are not valid at the time of the Internet. In the past, production, copying, transportation, distribution and sale of books, video tapes and similar material represented large expenses. The authors of digital content have a much lower expense, especially the expense of intermediaries or publishing houses, which are usually copyright holders and which are trying to keep their old business models that have brought them huge profits.

Protection of film, music or software industry through legislation such as SOPA and PIPA, or contracts such as the ACTA, would be the same as applying the taxes on e-mails for the benefit of the Post Office, or request that Skype charges its services as traditional phone companies. Unfortunately, there are those ideas, and one of them is the additional taxes for all blank optical discs or memory sticks, which could eventually be used to store pirated copies of some movie or music.

The world has changed and the old rules are no longer valid, so it would be better if the industry of the content would adjust to the new era, rather than to try to keep the old relations, using the laws and contracts that will be difficult to implement. New ways of distribution of the creative content have to be found, like some companies and the government should stimulate the development of new business models instead of thinking about the protection of the old ones.

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HOW DO ELEMENTARY GRADES STUDENTS UNDERSTAND THE INTERNET AND HOW IT IS USED

MA GORDANA STEPIĆ
Elementary School „Mihailo Petrović Alas“, Belgrade

Abstract: This paper investigates how students of elementary school understand Internet, where, how and for what purpose it is used. The research was conducted in elementary school "Mihailo Petrović Alas" in Belgrade, in June 2012th year. The study involved students of the first, second, third and fourth grade. A total of 212 students completed a questionnaire. We carried out the quantitative and qualitative data analysis. The results show that most of our students have Internet access at home and at school, that there are age differences in understanding of the Internet, they search the Internet mostly alone, with a family member or with friends, they did not experienced discomfort on the Internet, their parents know what they are doing on the Internet almost exclusively used for playing games. In this study we have emphasized the need and importance of usage of the Internet, opened new questions concerning this issue and we discuss what implications this might have for teaching in elementary grades.

Keywords: Internet, computer game, students, teaching, Internet skills

1. INTRODUCTION

The Internet is a medium that is constantly developing and introducing new functionality. Consequently, children's use of Internet is diverse and variable. On the other hand, the Internet is increasingly used as a source of information in primary education. An increasing number of schools have Internet access. Many examples of good practice can be found on the Web in the form of schools’ and institutions’ initiatives in order to support research which aim was to provide optimal use of Web resources in education. Schools should inform students about the content and purpose of Internet, but also to direct them to critical and safe use of Internet resources at school and at home. It is necessary to examine the use and understanding of Internet of students of lower grades of elementary school and skills of using Internet as an important assumption of quality Internet integration in basic education. Our research is aimed at understanding the use of Internet by students of lower grade of primary school.

2. PREVIOUS RESEARCH ON THE USE AND UNDERSTANDING OF INTERNET

During the last ten years, numerous studies have been carried out on the access and use of Internet. Students from the third grade were mostly examined because it was realized that the use of Internet from that age tends to be broader and more diverse. One example is research conducted in England, "UK Children Go Online project", among students aged 9-18. Our findings indicate the 30 major fields. Internet usage was grouped into five categories: interactivity opportunities, peer – to peer opportunities, commercial and career opportunities, civic opportunities and other opportunities (Livingstone, Bober &Helsper, 2005).

Far fewer studies were carried out at a younger age. National Center for Education Statistics (NCES) has...
completed research on the use of Internet from kindergarten to 12 years of age. Research has shown that children from the first to the fifth class use Internet mainly for completing school assignments (31%) and playing games (32%), for sending e-mail (19%), news/weather/sports (10%), find information and products (9%), watch/listen to TV, movies, or radio (6%), make purchases (3%), phone calls (1%) and taking a course online (1%) (DeBell & Chapman, 2003).

Few studies have examined how children imagine Internet, or how they understand it. One of such studies was carried out by Yan (2005). 83 children aged 5-12 were interviewed. The results of his research included understanding the two dimensions of Internet, technical and social. When we talk about the technical dimension it was noticed that children aged 5-8 believed that Internet was located in the computer that they used, that it had a certain size and it included only one computer. On the contrary, children aged 9-11 believed that Internet was somewhere and it was used to find things, that was huge and included many computers. In terms of the social dimension of the Internet, Yan came to the following results: children aged 5-8 thought that it helped them to learn and that there were no negative aspects, while children aged 8-11 believed that Internet could help them with homework, but it could have negative aspects (Yan, 2005).

Exploring the use and understanding of Internet by K-2 students (Dodge, Husain & Duke, 2011) designed "to help parents, teachers, educational policy makers, and other researchers determine what a group of K-2 children are doing or are able to do on Internet ... "(Dodge et al., 2011: 90). This information is the basis for creating ways to prepare students for working on the computer, as well as for upgrading existing knowledge and skills. Researchers realized interviews with 37 students and the same number of parents. What was new compared to previous studies was that they tried to discover not only the understanding and use of Internet, but Internet skills of children aged 6-8. The main findings of this study indicate that: young children use Internet in substantial number, young children have an emerging understanding of Internet, most young children are unaware there is anything bad about Internet, young children sometimes use Internet alone, different children were displaying very different levels of Internet skill (Dodge et al., 2011). Among the children there are differences in opportunities offered to them at home and at school in terms of Internet and learning about Internet, and this has a direct impact on their understanding.

3. METODOLOGY OF RESEARCHING

3.1 The problem, aims and objectives of research

We started from the hypothesis that the general understanding of Internet was built during the first four years of primary school, and that the predominant activity of the pupils of this age was playing games.

The task was:

1. Examine the availability and use of Internet at school and at home;
2. Examine the understanding of Internet;
3. Determine a) what students most do and b) what they prefer to do on Internet;
4. See who they visit the Website with and whether their parents know what they do on Internet;
5. Examine whether they had nuisance on Internet.

3.2 The Methods, techniques and research instruments

The research was based on the descriptive method. In the collection of data the survey research technique was used. For the purposes of this study the researcher, in collaboration with teachers involved in the research, designed the instrument, the questionnaire. The questionnaire contained 8 questions (4 questions were opened, 3 were closed, and one question was of the combined type). A pilot study was carried out on a sample of twenty students to test the clarity, focus and simplicity of the questions in the questionnaire, and whether the answers to the questions we got were relevant and in accordance with the objectives of the research.

3.3 The sample

Study population consisted of all the students of the first to fourth grade of primary school "Mihailo Petrović Alas". This study included 52 students of the first grade, 54 students of the second grade, 56 students of the third grade and 50 students of the fourth grade, a total of 212 students. The two groups were formed: the first group consisted of students of the first and second grade - aged 6-8 (total of 106 students, 51% of boys and 49% girls), and the other group consisted of students of the third and fourth grade - aged 9-11 (a total of 106 students, 51% of boys and 49% girls). This was a selected sample, because we tried to equalize the number of students per group, gender, and school success and to examine our students in order to take appropriate measures and to improve the understanding and use of Internet in the lower grades.

3.4 The course of study

The research was conducted in the primary school "Mihailo Petrović Alas" in Belgrade, in June 2012. Students in both groups completed the questionnaires at the same time. Estimated time for work was 20 minutes.

3.5 Data Processing

A quantitative and qualitative data analysis was done. Based on the collected data, the categories were formed according to the basic research question. Data were
analyzed in Excel and the statistical measures which were used were the frequencies and percentages.

3.6 The results

We present the results of research studies in the order of tasks:

1. All students of the lower classes of our school have Internet access at school. The results showed as follows:
   a) Internet at school use 28.31% of the students of the first and second grade,
   b) all students of the third and fourth classes use Internet at school the most often when they have the subject “From a toy to a computer”.

All the surveyed students of the first and second year have Internet access at home, and it is used by 95.28% of the students. All respondents of the third and fourth grades have Internet access at home and all of them use it.

Valcke, Schellens, Van Keer, & Gerarts (2008) showed that 91.2% of children of primary school age research Internet access at school. The results showed as follows:

1. All students of the lower classes of our school have Internet access at home. While 95% have Internet access at home.

Table 1: Understanding the Internet (grades 1st and 2nd)

<table>
<thead>
<tr>
<th>Category</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>link</td>
<td>2</td>
<td>1.88</td>
</tr>
<tr>
<td>browser</td>
<td>3</td>
<td>2.83</td>
</tr>
<tr>
<td>page</td>
<td>6</td>
<td>5.66</td>
</tr>
<tr>
<td>device for people</td>
<td>8</td>
<td>7.54</td>
</tr>
<tr>
<td>program</td>
<td>11</td>
<td>10.37</td>
</tr>
<tr>
<td>network</td>
<td>11</td>
<td>10.37</td>
</tr>
<tr>
<td>the place where I play games</td>
<td>13</td>
<td>12.24</td>
</tr>
<tr>
<td>place on a computer</td>
<td>15</td>
<td>14.15</td>
</tr>
<tr>
<td>site</td>
<td>16</td>
<td>15.09</td>
</tr>
<tr>
<td>without answer</td>
<td>21</td>
<td>19.81</td>
</tr>
</tbody>
</table>

80.19% of children aged 6-8 provided an answer to the question of what the Internet was. However, they were not able to conceptualize the Internet outside the specific use. They perceived it as a place where they play games, a device that was used for working people, program, site, network or place where they could see what they were interested in, or they could learn something. The most impressive answer given by a second-grade student was: “The Internet is a haven for me.”

Table 2: Understanding of Internet (3rd and 4th grade)

<table>
<thead>
<tr>
<th>Category</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>database</td>
<td>4</td>
<td>3.77</td>
</tr>
</tbody>
</table>

Only two students of third and fourth grades did not give an answer to the question of what the Internet was. The progress in the understanding of Internet could be seen at the age of 9-11. They had a clearer understanding compared to the students' of the first and second grade about what Internet was and what was its purpose.

3. a) According to Livingstone (2003), typical Internet usage of young children can be described by three following dimensions: (1) entertainment, (2) education, and (3) edutainment. Children aged between 10 and 14 use Internet primarily for chatting, playing games, searching for information and music downloads (Kuiper, 2007).

We got similar results in our study. We observed differences in the activities that the students carried out on Internet at school and at home.

Table 3: The most common activities on Internet (grades 1st and 2nd)

<table>
<thead>
<tr>
<th>At school</th>
<th>f</th>
<th>%</th>
<th>At home</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>play games</td>
<td>6</td>
<td>5.66</td>
<td>play games</td>
<td>63</td>
<td>59.43</td>
</tr>
<tr>
<td>do tasks</td>
<td>6</td>
<td>5.66</td>
<td>Facebook</td>
<td>9</td>
<td>8.49</td>
</tr>
<tr>
<td>look at pictures</td>
<td>4</td>
<td>3.77</td>
<td>Youtube</td>
<td>15</td>
<td>14.15</td>
</tr>
<tr>
<td>read texts</td>
<td>5</td>
<td>4.71</td>
<td>read texts</td>
<td>3</td>
<td>2.83</td>
</tr>
<tr>
<td>listen to</td>
<td>4</td>
<td>3.77</td>
<td>without</td>
<td>11</td>
<td>10.37</td>
</tr>
</tbody>
</table>

Students of the first and second grade (Table 3) use Internet at school in equal measure to play games, do assignments, view pictures, read texts and listen to music. At home, the dominant presence on Internet is playing games (59.43%). In addition, children of this age use social networks Facebook (8.49%) and YouTube (14.15%) and they read articles (2.83%) at home.

Students of the first and second grade (Table 4) use Internet at school mostly for playing games (46.22%), and for activities related to teaching: see pictures (14.15%), search sites (12.26%) and do tasks (14.15%). At home, the dominant presence on Internet is playing games (52.83%). In addition, children of this age use social networks Face book (15.09%) and YouTube (19.81%), and search sites (12.26%) at home.

Comparing Internet activities of these two groups of students we observed a gradual increase in the use of social networks in the third and fourth grade. The first and second class students do not search sites, either at school or at home. Online activities that children realize at home and which have any connection with homework and generally school were not noticed.
students of both groups visit it with some of the members of the family (mother, father, brother, sister), and some students of our school visit them with friends (12.26%) and (16.03%).

Children aged 9 -11 (Table 8). About one-third of that they visit Internet pages, and very similar speak the students. Among favorite activities, no activity associated with the age of 11 years on.

Table 4: The most common activities on Internet (grades 3rd and 4th)

<table>
<thead>
<tr>
<th>At school</th>
<th>f</th>
<th>%</th>
<th>At home</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>play games</td>
<td>49</td>
<td>46.22</td>
<td>play games</td>
<td>56</td>
<td>52.83</td>
</tr>
<tr>
<td>search sites</td>
<td>13</td>
<td>12.26</td>
<td>search sites</td>
<td>13</td>
<td>12.26</td>
</tr>
<tr>
<td>do tasks</td>
<td>15</td>
<td>14.15</td>
<td>Facebook</td>
<td>16</td>
<td>15.09</td>
</tr>
<tr>
<td>look at pictures</td>
<td>15</td>
<td>14.15</td>
<td>Youtube</td>
<td>21</td>
<td>19.81</td>
</tr>
<tr>
<td>without answer</td>
<td>14</td>
<td>13.20</td>
<td>do not use</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>
| do not use| / | / | / | / | /

Table 5: Favorite activity on Internet (grades 1st and 2nd)

<table>
<thead>
<tr>
<th>Activities</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>playing games</td>
<td>67</td>
<td>63.20</td>
</tr>
<tr>
<td>facebook (games and correspondence)</td>
<td>9</td>
<td>8.49</td>
</tr>
<tr>
<td>youtube (listening to music and watching films)</td>
<td>26</td>
<td>24.52</td>
</tr>
<tr>
<td>without answer</td>
<td>4</td>
<td>3.77</td>
</tr>
</tbody>
</table>

Table 6: Favorite activity on the Internet (grades 3rd and 4th)

<table>
<thead>
<tr>
<th>Activities</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>playing games</td>
<td>47</td>
<td>44.33</td>
</tr>
<tr>
<td>facebook (games and correspondence)</td>
<td>23</td>
<td>21.69</td>
</tr>
<tr>
<td>youtube (listening to music and watching films)</td>
<td>22</td>
<td>20.75</td>
</tr>
<tr>
<td>searching</td>
<td>12</td>
<td>11.32</td>
</tr>
<tr>
<td>without answer</td>
<td>2</td>
<td>1.88</td>
</tr>
</tbody>
</table>

Of the total number of the students of the first and second classes that use Internet (101) only 9 (8.9%) point out that their parents do not know what they do on Internet. All the surveyed students (106) of the third and fourth classes use Internet and only 9 (8.49%) state that their parents do not know what they do on Internet. If the students were honest in their responses, and we believe that they were, we can be satisfied with the current situation. However, a large number of students visit Internet. This is presumably closely related to the dominant type of activity carried out on Internet, playing games. The research Dodge et al. (2011) indicates that 75% of K-2 children reported that they used Internet by themselves at some point.

There are studies that highlight the importance of parent support to activities carried out on Internet by their children. Vekiri & Chronaki (2008) came to the conclusion that parental support and, to a lesser extent, peer support were the factors more strongly associated with boys and girls computer self-efficacy and value beliefs. On the other hand, teacher supervision and parental was (not) an important predictor of (un) safe Internet usage, indicated Valcke, Wever, Van Keer & Schellens (2011). The importance and extent of parents’ support regarding different aspects of Internet should be specifically investigated.

5. De Moore et al. (2008) presented a scheme of Internet risks for young children, which includes three main groups of risk: risks content, contact risks and commercial risks. Research of Valcke et al. (2008) indicates that about 40.7% of children aged between 10 and 12 were exposed to such shocking content. Research involving children of 10-12 years, indicates that 26% of the respondents did not know who they are chatting with, 13% passed personal details; 12.7% sent personal pictures (Valcke et al., 2008). A qualitative study of Henke and Fontenot (2007) showed that only about 13% of children aged 9-13 realized that the aim of their favorite website is advertising. Results of numerous studies indicate that the three types of risk on the Internet should not be ignored. And it still raises the question: what are the consequences of unsafe Internet usage? Therefore, it is necessary from an early age to introduce a series of measures to promote safe Internet use to prevent children's exposure to the above risks.
We tried to find out whether our children were exposed to some of the risks presented.

Embarrassment on Internet had 12 students (11.88%) of the first and second grade. At first glance, it is a great number. When analyzing the students' responses, we found that at this age they did not yet know what distress could happen to them on Internet and discomfort in the true sense of the word did not happen to them. Students cited the inconvenience, mostly related to playing games on Internet and technical problems, for example. "When you lose the game," "the computer did not want to load my game," "I saw a shark eat somebody"," a computer did not allow me to play games ", "monsters coming out of the game".

Embarrassment on Internet had 11 students (10.37%) aged 9-11. Inconvenience that students of third and fourth grades perceived were still within the boundaries of technical difficulties and the loss of the game, but they appeared to answer the following: "Somebody wrote something ugly," "a site that I did not want appeared" and "embarrassment happened to me when I was on Face book and I talked to an unknown man ", therefore, they were exposed to the content risks and contact risks. From our research it appears that the diverse activities on Internet increases possibilities for discomfort experiencing.

The finding of our study is in accordance with the other studies stating that many children, from an early age, have negative experiences on Internet, ranging from chats with strangers to bullying via MSN. In addition, 60 to 75% of children between the ages of 11 and 15 have expressed that they have had positive experiences on Internet, such as getting somebody’s support or making new friends (Kuiper, 2007).

4. CONCLUSION

This study is an attempt to understand and to improve the use of the Internet in the lower grades of an elementary school based on the obtained results. Therefore, it has some limitations, but it can also serve as a guide to other teachers to understand students' Internet use in lower grades of elementary school or to encourage them to explore their own practice.

All students of the lower classes have Internet access at school and at home. A small number of children aged 6-8 compared to students aged 9-11 use Internet at school. Almost all students aged 6-11 use Internet at home.

Lower grade students’ understanding of Internet is developing. There is a significant difference between the two groups of students. A higher proportion of children aged 9-11 were able to give a specific answer to the question of what the Internet was and most of their answers were acceptable.

The dominant activity in both age range groups of students is playing games. Playing games is not largely present in the use of Internet at school by students of the first and second grade, and this is presumably related to the number of students of this age who do use Internet at school. It is observed a gradual increase in the use of social networks in relation to the age of students. Minority students of both age use Internet at school for teaching. Most students’ Internet activities at home are not related to school. Internet activity of children aged 6-11 either at school or at home, is mostly related to their interests and hobbies. A small number of activities is initiated and directed by teachers, according to the types of activities that students cite.

Students aged 6-11 mostly visit Internet alone, with some members of the family or with their friends. Their parents know what they do on Internet.

Children aged 6-8 did not have discomfort on Internet in the true sense of the word. A small number of children aged 9-11 observed some inconvenience that can be classified into two types of Internet risks: content risks and contact risks.

This study gave us the answers to some important questions, but it has also opened some new. It is necessary to investigate 1) Internet skills of students as well as 2) the involvement of teachers and parents in the students’ activities on Internet from the point of students' Internet skill development but also from the point of safe use of Internet. This brings us to the concept of digital literacy which has to be viewed from two perspectives: functional skills and social practices. It is important to answer the question what students do when they are online, and how they implement these activities.

Based on literature (Dodge, Husain & Duke, 2011) and the results of our research we have formulated recommendations for teachers and parents:

- Internet is a part of life of most junior grade students. It is especially present outside of school. Internet has a potential to link the school and out school activities in a proper manner and this should be used;

- Students should be introduced to a variety of activities that Internet can provide and we have to help them to realize that there are variety of targets for which realization Internet can be used;

- When we teach students how to use Internet we have to warn them about Internet risks related to the security and fidelity of information;

- It is necessary to encourage parents to become involved in their children's activities on Internet, because this is the way to increase their security and to improve their skills on Internet;

- Students' training has to begin gradually and at the right time, even 6 year-old children can start with some activities, in order to avoid gaps in their understanding and use of Internet and to develop Internet skills.
LITERATURE


THE ROLE OF SOCIAL NETWORKS IN THE EVALUATION OF LIBRARY SERVICES

UGRA DRUŠTVENIH MREŽA U EVALUACIJI BIBLIOTEČKIH USLUGA

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Abstract: In the countries with highly developed library and information system, librarians are responding to the popularity and utility of social networking sites by using them as central media for interacting with library patrons for traditional and novel services. Through an examination of trends in the area of social media usage and a review of the potential challenges and opportunities, the paper analyzes the current situation in Serbian libraries in terms of the role of social networks with emphasis on the evaluation of library services. This analysis has shown that even though the majority of librarians are aware of the implications of social networks, they are not able to use them with full capacity due to a number of reason. For the survey we used an online research method – computer assisted web interviewing (CAWI).

Keywords: knowledge era, fam, library, resources, social media, network, web 2.0, electronic services, applications, evaluation, technology, trends

1. INTRODUCTION

Social networking platforms have been progressively attracting the attention of various businesses in the past several years. The focus has been mainly set on communication and interaction with customers with the aim of not only marketing the products and services, but more importantly, shaping them according to the customers’ emerging needs.

In today’s business scenario, social media offers an easy, affordable and effective way to connect with the target audience and create brand awareness. It represents the most popular online activity worldwide accounting for nearly 1 in every 5 minutes spent online in October 2011, and reaches 82% of the world’s Internet population, representing 1.2 billion users around the globe [1].

Libraries have recognized the power of social media participation: librarians are responding to the popularity and utility of social networking sites by using them as central media for interacting with library patrons for traditional and novel services.

The real promise of social media in the library setting lies in its ability to strengthen communities and enable discourse around information resources which works towards advancing human knowledge. Traditional reference is replaced with ask-a-librarian, wikis and blogs. Mailing lists are replaced with social networking applications such as Facebook, Twitter or RSS. The major implication of these shifts is that users themselves are participating in shaping library services.

Apart from using social networks to advertise library events and services, post photos of the library or answer patrons’ questions, there has been a number of other initiatives and activities on this platform. Many libraries try to connect better with the community in terms of identifying with patrons, for example, Westerville public library [2] is engaging the customers by bringing the best breakfast in the town to the library or introducing...
contemporary cinematography via their Facebook page; San Francisco public library [3] sets quizzes via Facebook and lets patrons win a visit from a bookmobile; Library of Congress [4] reminds users of the important historical events; Yale University Library [5] challenges users to invent the most creative excuse via Facebook page for not returning the books and the winner would have book fees waived; National Library of Scotland [6] gives away Kindles to patrons who can sum up a Shakespeare play in 140 characters (Twitter). When it comes to evaluation or surveys, many libraries have been using social media channels to distribute the questionnaires and surveys. For example, the University Library in Belgrade used their Twitter profile and Facebook page to survey patrons about the website redesign as well as researchers and librarians about The European Library services. There are many options for engaging the community through social networks where the most important issue is being able to think outside the box and successfully share the resources.

This paper is based on a research conducted in March 2012 in various types of libraries in Serbia. It focuses on analyses of different purposes of social networks in libraries with special emphasis on the evaluation of library services. What role do social media applications play in a library setting in Serbia: promotion of services, virtual reference, education, book reviews or perhaps evaluation? Could we define librarians in Serbia as social networking literate?

As the evaluation of products and services is a crucial factor for creating user-oriented libraries, the research also shows how Serbian librarians use web 2.0 tools in the quest for service quality.

2. SURVEY “LIBRARIES, SOCIAL NETWORKS AND EVALUATION”

Aim
The aim of the survey “Libraries, social networks and evaluation” [7] was to explore the implications and role of social networks in libraries. Although there are many examples of general statistics on high social media usage in Serbia where 56.2% of population uses internet and over 3.1 million citizens have a Facebook profile [8], there is no data available for the specific business environments such as libraries.

Target audience
The survey was targeted at librarians and library technicians working in all types of libraries in Serbia: school, public, special, academic and national. Some of the participants have been reached via e-mail and others through networks such as Facebook, LinkedIn or Twitter.

Design
Since the survey has been created to explore usage of online social networks in libraries, it was most comprehensive to use an online research method – computer assisted web interviewing (CAWI). The survey was designed using a free Google forms application which allowed simple collecting, monitoring and sharing of the results between the researchers. It consisted of 19 questions:
- 7 multiple choice questions (only one answer),
- 4 dichotomous questions,
- 6 multiple choice questions (multiple answer),
- 1 Likert-scale question and
- 1 comment/essay box.

Having in mind the web user behavior, the idea was to create the survey that is not too time-consuming, but able to gather quality feedback on the topic.

Summary and discussion
The survey was open for two weeks and during that period we received 91 valid responses. The analysis was conducted thoroughly and according to the question (Q) sequence.

Q1. Select type of the library you are currently employed in: special, national, academic, school or public.

Figure 1: Types of libraries participants work in

The highest response rate was from the public libraries (32%), followed by academic (31%), school (24%), special (9%) and national (4%) (Figure 1).

Q2. Does your library have profiles on social networks?

Figure 2: Ratio of libraries that have profiles on social networks vs. those who do not.
Out of 91 libraries 48 have created a profile on at least one of the social networks, and 43 have not (Figure 2).

Q3. Which of the following social networks does your library use?

Participants were allowed to select more than one checkbox, so percentages added up to more than 100%. Facebook appears to be a leader among librarians choices of network (72%), followed by Twitter (33%), Google+ (30%), YouTube (28%) and Yammer (19%). The rest of the offered social networks or services are below 15%: Google apps, LinkedIn, Pinterest and RSS feed (Figure 3).

Q4. Has your library developed a strategy for social networking?

Majority of Serbian libraries (70%) does not have a social media strategy, 16% of librarians are not sure, and only 13% have developed a strategic plan for social networking.

Q5. Are social networks mainly used for communication with employees or patrons?

Out of 91 participants, 21 have skipped the fifth question. The results show that majority of libraries use this media for interaction with patrons (51) and the rest uses it for employees (19) (Figure 5).

Q6. Who is in charge of creating the content on the social media pages at your library?

In 41% of the libraries an individual librarian has a role of social web content creator; 37% of libraries do not have anyone in particular who is in charge of the social networks and 18% have designated a team for this service. Only 4% have outsourced a professional social media manager (Figure 6).

Q7. According to the statistics, do users visit more often the official library website or social network pages?

18 participants skipped this question and 47 did not know the answer. So, more than 2/3 was not aware of the need to measure/compare or were not in position to know the statistics. Among the remaining 26 the answers are equal: 13 stated that users visit the official website more, and the other 13 that the social web has more traffic.

Q8. What kind of information does your library deliver via social networks?

Participants were allowed to select more than one checkbox, so percentages added up to more than 100%. The responses show that libraries offer a very diverse spectrum of information through this media: library news
and announcements (73%), promotion of library services (56%), photo sharing (52%), various information from the world (42%), book recommendations (31%) and education of patrons (24%) (Figure 7).

Figure 7: Information that libraries deliver via social web

Q9. On a scale from 1 (bad) to 5 (great), how would you rate the interactivity / feedback from the users of the social networks?

Out of 50 participants (slightly more than a half of all) who have answered the question, 32% believes it is good (3), 12% find it very good (4), 10% bad (1), 9% not so good (2) and only 3% great (5).

Q10. Which of the social networks that your library uses has the most traffic?

Participants were allowed to select more than one checkbox, so percentages added up to more than 100%. The winner is Facebook again with 75%, followed by Google+ (16%) and Twitter (8%).

Figure 8: Traffic on library social networks in Serbia

Q11. Have you ever used social media to conduct a survey?

Only 8 libraries (9%) have conducted surveys using social media tools, 75 responded negatively and the rest 8 skipped the question.

Q12. If you previously answered “Yes”, how often have you conducted online surveys?

Out of 8 libraries 5 conducted surveys once a year, 2 quarterly, and 1 less than once a year.

Note: an interesting shift occurred in the next several questions. Even though only 8 respondents confirmed that they have been using social media to conduct surveys, the following question collected more replies. The participants later explained that they gave inconsistent answers because they either commented generally on offline surveys or everyday interaction with patrons via social media.

Q13. Which social network or service do you find most convenient for online surveys?

Participants were allowed to select more than one checkbox, thus 21 librarians responded with one or several options. Google+ (43%) and Facebook (39%) are the most popular among the social media survey channels (either through a real survey or interaction with patrons such as question/answer).

Q14. What were the aims of the surveys / researches you have conducted so far?

Participants were allowed to select more than one checkbox and 58% responded. The aims that they chose were both for offline and online services, as previously explained. The most popular goal was consulting the patrons about existing services, redesign of the website, etc. (18 responses), followed by evaluating the services (12), introducing new services (11) (Figure 10).

Q15. How would you value the response rate to the surveys comparing to more classical (offline) channels?
Out of 24 responses 54% claimed the response rate was equal, 25% it was better and 21% said it was worse.

Q16. Have you published the survey summaries?

67% of participants have never published the survey summaries, 22% have occasionally and 11% have always published the results.

Q17. Do you follow blogs, websites, newsletters, etc. about development and improvement of social networking in companies?

71% of participants do not keep up with recent developments in social media via blogs or websites, and 29% are well informed.

Q18. If yes, please let us know which resources you usually consult.

Participants were allowed to select more than one checkbox, so percentages added up to more than 100%. However, apart from the offered list some of the participants from special and academic libraries suggested a number of other valuable resources such as stephenslighthouse.com, davidleeking.com, Medscape, ScienceBlogChannel, HighlightHealth, SlideShareblog, LiveHealth Club, NLM Technical Bulletin, ecancer, ResearchGate, QuantiaMD, LibraryRelatedPeople, etc.

“I became a librarian only last year, so I will try to learn all about future development of library services.” School librarian

“We are ready to dedicate more time to this phenomenon. I have an impression that social networks are more used to play games and have fun rather than improve and promote our work and libraries.” National librarian

“My library has no internet connection, therefore we don’t have a profile on any of the networks.” School librarian

“We are not online, we don’t even have a team for developing the official website.” School librarian

“Students have their profiles on social web. We only have one computer at the library where they spend time mostly using Facebook. Our school has a Facebook page where the library is partially presented.” School librarian

“So far we did not have any initiatives for using the social web. We will see how it will be in the future”. Academic librarian

“Librarians are mostly on their own, alone, and in many cases they are not allowed to implement novelties or improve services and thus attract more patrons. We have no computers, no internet, no webpages… I have heard about some of the social media issues for the first time now, while filling out this survey and I must admit I am embarrassed. There is no clear guidance for school librarians who are torned between different poles. Someone should take the responsibility for this situation.”

3. FEW REMARKS ABOUT THE SOCIAL AND PROFESSIONAL BACKGROUND

Accession to the European Union has been defined as Serbia’s most important strategic goal, for the achievement of which it is necessary that individuals, the civil sector and the state administration should work in harmony. The way to the EU is seen as the way to a more modern society of stable democracy and developed economy, and the political and economic demands stipulated by the EU as the prerequisites of individual development and responsibility, with a simultaneous expansion of European space of peace and democracy.

An orientation towards European integration brought a new concept of organization and a new concept of communication in Serbian society. Serbian librarians, who during previous period did not have a powerful professional association and a clearly defined status of their profession, nor the necessary minimum of social presence, have a reason to see this common framework as their great opportunity for change.

While Serbia is going through really difficult process of transition, its libraries are trying very hard to connect to the world on a new basis. Gaining the concept of learning society means overall changes and libraries are faced to both technological and social obstacles. One of the most
important steps for a whole society is to raise the level of information literacy. For information professionals one of the main tasks is to gain recognition of the role libraries should have in the process.

“The absence of a clear and consequent national strategy in the development of information literacy does not mean that information literacy in Serbia is not developing, but that it is developing sporadically and not efficiently enough. Instead of the system working as a whole, individual actions and initiatives are taken that are, from their own perspectives, trying to bridge the gap between the demands of the global information age and the situation in the field. The coordination of initiatives, ideas and strategies would bring about more focus and much quicker results in terms of raising the percentage of informationally literate population and their capacity for lifelong learning.

The current position of libraries and librarianship in Serbia reflects all childhood diseases of the information literacy concept. Although national strategies have not valorised their true potential adequately, libraries in Serbia now operate in a society that is demonstrating an increased level of strategic orientation to scientific development and trying to make more investment in scientific research, education and culture. Library initiatives, project organisation, participation in international projects, work in international associations and professional education imply that the librarians, with all objective obstacles, understand information literacy as their regular duty” [9].

When first web 2.0 sparks were ignited in Serbia in 2007, there were just a few initiatives that were standing out and standing alone. One of the pioneers in web 2.0 in Serbia was Belgrade City Library [10] with a Facebook profile and two blogs: one for library community and the other one for general population, i.e. patrons. This was the same period when first pathfinders were established using the LibGuides software at Belgrade City Library. For several years Belgrade City Library has been a leader in this area with Vesna Vuksan as the social web strategist. During that time many other Serbian libraries join the web 2.0 world.

“It has not been easy to recognize, alter, and satisfy the needs of the community. Residents need more than a mere collection of books. By improving the quality of services, we made them more responsive to the needs of those who use them. Our new services are well-received, and we are working hard to improve them” [11].

4. CONCLUSION

Librarians in Serbia are responding to the popularity of social networking sites, but they are still not using them as central media for interacting with library patrons. This survey has shown that even though the majority of librarians are aware of the implications of social networks, they are not able to use them with full capacity due to a number of reason. Most of the librarians are willing to engage more but are limited by lack of understanding and funding from the stakeholders. However, some of them succeed despite this obstacle and most of them are willing and planning to learn and contribute more than they have done in the past. When it comes to evaluation of library services via social networks, it seems that librarians mainly like the idea, but have not considered it in the past. Moreover, they found the survey a valuable source of information and a trigger for future improvement in conducting researches.

With cost effectiveness of social media today embedding 850 million Facebook users, 465 million Twitter accounts, 2 new members joining LinkedIn every second and rapid growth of Pinterest [17] it would be a huge drawback not to become part of the social network environment. It helps build new networks, strengthen existing relationships, create brand awareness, get feedback from patrons to improve services, target them more effectively, increase loyalty and establish a reputation as a forward thinking library.

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References


DIGITALNA POLITIČKA KAMPANJA: SRBIJA 2012
DIGITAL POLITICAL CAMPAIGN: SERBIA 2012

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Abstact: Election campaign in 2012 was marked with wide offering of varied Internet content including those created by the participants of the campaign.

Various experiences of cyber campaigns in the world, since 2000 until the very successful Internet campaign of Barack Obama – which made a great contribution to his electoral victory as the 44th president of the United States (he took office in January 2009), encouraged many politicians and parties all over the world to use the same model as a supplementary in their election campaigns. That was the case of 2012 spring campaign for local, provincial, national and presidential elections in Serbia.

The aim of the research, whose results are partially presented in this paper, was to perceive how new technologies contributed to social change, in this case – to what extent and how parties in Serbia used the Internet for the campaign.

The corpus comprised 11 major parties including those representing the interests of national minorities, local and provincial communities and of course major parties. Websites of the parties were monitored throughout April and early May 2012.

The results indicate that political parties did not make sufficient use of digital communications in cyber space-time.

Keywords: election campaign, the Internet, political parties’ websites, cyber space-time.

1. INTRODUCTION

To live effectively is to live with adequate information. Is there a clearer message for the media and political actors, particularly at a time of election campaign, than the quoted words of the originator of cybernetics Norbert Wiener (1964). This axiom of the new, digital era is going to be spiritus movens of this paper.

Definition of Basic Terms

If we perceive Internet as New Media, then the content posted on the Web, regardless of authors or better say owners of sites, can be considered a part of the public sphere. Therefore, the information should be regarded accordingly, since its final effects will contribute to the creation of public opinion on different questions of interest for a particular community.

Firstly, we should consider the Internet and World Wide Web phenomena. Literature in this domain is already vast. We are introducing definitions of authors for whom we believe represent the mainstream in the field.

‘The Internet is best thought of as an interconnected, global network of computers (and other ‘computational
devices’ such as personal digital assistants (PDAs), phones, and so on.’ (Bell, D. 2009: 31)

‘The World Wide Web is (Gauntlett, D. 2004: 5) a user-friendly interface onto the Internet.’

‘Generally the Internet is a relatively open and accessible public sphere where anyone who has access to a wired computer can freely express their views as long as they remain within the law and do not infringe on other people’s rights (…) the openness of much of the Internet as a public sphere can be seen in the diversity and plurality of the voices on the net that are represented by the websites of political parties (right and left wing), Christian and Muslim sites (radical and moderates), civil society and government sites, that coexist with each other online. The plurality and diversity of these sites (some with hyperlinks) make the Internet potentially the biggest single public sphere.’ (Moyo, 2009: 141-142)

Moyo distinguishes between two important elements within the public sphere (2009: 145) – information and information access. Moreover, he conveys that ‘hypertextuality and digitalization make the Internet possibly the largest repository of information’.

The terms Cyberspace or Cyberculture are used as common terms when speaking of New media in general.

‘The word cyberspace (…) it is taken from a science fiction (SF) novel, a key text in a sub-genre of a SF called cyberpunk: Neuromancer (1984) by William Gibson’ (Bell, D. 2009: 32). In addition, the currently preferred term cyber space-time is eagerly used to emphasize that the Internet is essentially a convergent New media in which content is placed spatially (as in print media), as well as temporally (as in electronic media).

Another term is cyberculture, ‘used to tag the ways in which things like the Net and the Web are at once shaping and shaped by culture – the Internet isn’t just a technological artefact, it is a cultural phenomenon, and these two ‘realms’ cannot be disentangled. While other critics have argued that this term has lost its relevance, the possibilities of digitalization, which is, as already mentioned, called cyberculture.

A ‘novelty’ in New media is ‘interconnected series of computer networks tied together by satellite, wireless, fibre optic cable and wire which has enabled the traditional model of mass communication to be radically altered’ (Glen Creeber et al. 2009:2).

The Digital revolution term fundamentally refers to the interdependence of new technologies and socio-educational changes that create a new culture marked with and should be jettisoned in favour of more new words – New media (…)’. (Bell, D. 2009: 32)

Therefore, in the New media term appears in both aforementioned definitions. Carin Dessauer (2004: 123) defines it as ‘the broad medium, including all of the related wireless and portable technologies. Whereas internet news has been defined as the practice of journalism online, there are seven characteristics that, taken together, have made internet news unique’. According to Dessauer (2004: 123-125) these are in short: First, internet news has offered dynamic content, reported in real time and updated often. Second, users have been able to control their information choices – both what and when. Third, internet news has used so-called hyperlinks. Fourth, nearly all of the major news sites have showcased multimedia offerings. Fifth, internet news has showcased the ‘interactivity’ – user participation – unique to the internet. Sixth, internet news has offered customization, that is, the selection of personal preferences to ‘customize’ a version of a particular site. For example, WashingtonPost.com has allowed users to customize the site for news headlines, weather, traffic, and columnists, among others. Finally, internet news has used ‘layered journalism’, that is the journalism that offers many in-depth, multimedia, and interactive layers.

Other sites that incline to informativeness, not just the media sites, should strive to use these characteristics.

Let us mention that the term New Media has been used since the early ‘80s, and refers implicitly to the possibilities given by new digital technologies.

Glen Creeber et al. (2009: 2) define New media, according to the new information carrier Wikipedia, ‘as a product of mediated communication technologies coming together with digital computers’. As stated by the same author ‘some technologies we might therefore include as or associate with new media are: The Internet and World Wide Web Digital Television Digital Cinema the possibilities of digitalization, which is, as already mentioned, called cyberculture.

The elementary question is when to use which one of them, since they crucially represent the same phenomenon. We could assume that the subject of analysis, that is to say the research assignment, directly influences it.

In case of media phenomena, for example, the type of transformation that analogue media endure when transforming into digital and how this process is reflected on journalists, but audience as well, can be analysed. Moreover, it is important to examine how the media and audience function in cyber sphere. Do professional journalistic codes apply to digital operation mode as they do to the analogue? What kind of transformation does the media discourse endure, i.e. the text as such? Therefore, if
the above is a research subject, then it goes without saying that the term New media is the desirable term as the opposite to traditional, old, or analogue media.

When social changes (conditioned by digitalization) are in the research focus the more effective term is cyberculture, since it indicates a transformation of cultural code - for example, if research subjects are: the development of critical public opinion on the Internet, the organization of protests, civic answers to social crises and similar, in other words, how citizen are engaged by means of informal communication channels and how they start acting as a semi-structured group.

Cyber space-time is a term which is a very suitable context for defining conversational unit of analysis in media discourse research (Valić Nedeljković and Kleut, 2012). It satisfies at least two criteria: (a) it reflects the basic internal structure of an online text with its comments; (b) it applies to all online media editions which allow users to post comments (disregarding the number of participants commenting, the number of topics shifting in comments, and the cyber space-time in which the interaction takes place).

The abovementioned practically means that the terminology which defines the phenomenon of digital communication, or digital communications, in virtual sphere is rich. Even though they define the same idea, each of them is marked with a focus on a specific phenomenon giving it a predominant meaning. Choosing the one or the ones that will be used in a particular context is conditioned precisely by the content and performances of the context.

Therefore, it is crucial that researchers of new media digital technologies take a clear stand use beforehand towards the terminology they.

The paper presents the results of the analysis of parties’ websites at the time of election campaign 2012 in Serbia. For this research, the term cyberculture was found to be the most appropriate when discussing a digital political campaign since the phenomenon represented is a socio-political one, given the fact that it focuses on social and sociological aspects of cyber sphere. The Cyber space-time term is used to explain multi-media elements of the sites.

Website

Websites as units of the World Wide Web, international network of computer databases 'use the Internet and its unique system for connecting information. Since its emergence, and today more than ever, the world web is an endless sea of information, flowing and changing their shape and content (Tapavički-Duronjić, 2008: 49). Due to its main characteristic, William Gibson (as quoted by Tapavički-Duronjić at the same place) compares cyber space-time to a sort of an endless magazine or a large library, whereas Eriksen calls it a liquid media.

The main qualities of the WWW are: it is a multimedia and hypermedial net where placement and displacement of content are free or low-priced, widely available and quick.

The basic constructive principle of the WWW is its internal architecture that leans on hypertextuality. A plentitude of information and referrals to contents of the same corpus lead to confusing awareness with knowledge. Dan Thu Nguyen and Jon Alexander (2001: 167) quote Gary Wolf who concludes that, in the world of the Web, knowledge is not something we produce, but something we participate in.

That is exactly the controversy of the Web – you are never certain of the content origin and its credibility. There is always a question whether originators are responsible enough for the published contents and whether users can trust the information.

‘Every user of the Internet wonders how to evaluate credibility of a site and how to assess its authority. Meanwhile, authors and administrators strive to give the answer to their future users ‘beforehand’ in order to enlarge the number of visits to their sites, which is the goal of everyone who publishes information in cyber space-time.

The easiest way would be to look for the answer in five journalistic questions: who published it; when was the last update; what does it involve; how and where to search for the required information on the site?

University of Wisconsin - Eau Clare created criteria for evaluating information on websites¹.

The main criteria for a well-organized website are: good overview; easy manipulation and search; loading speed; clear information sources; without too many banners and useless links, commercials, animated gifs, flashes and other motion and demanding elements which interrupt users’ work. Website colours are important as well.

What is expected from sites aimed at communication with users (something all parties aspire to) is interactivity - more precisely, the possibility of leaving comments, asking questions and receiving timely answers, without any obligation of leaving personal information.’ (Valić Nedeljković and Kleut, 2012)

At the same time, the Web is not influenced by conventional power relations. Dan Thu Nguyen and Jon Alexander (2001: 168) say that an individual must not express the will to lead or rule on the Web. Authoritative behaviour quickly leads to hostile actions of other users (so called flming). Dan Thu Nguyen reveals the existence of hidden elite that maintains the Internet. They call thorough protocols or interaction rules simply – ‘Requests for comments’. Many sites do not have clear rules, so users might assume that no one regulates them. That is often the case with political sites and a not so

thorough analysis already shows that users’ comments on political sites are predominantly positive. That implicitly refers to the existence of hidden elite that controls the information flow.

According to Glen Creeber and Royston Martina (2009: 3), users today surf on ‘Web 2.0’. ‘That is a second generation of web-based communities and hosted services that evolved after the ‘dot.com crash’ (the end of the dot.com boom which saw an ever increasing number of web-based businesses cease trading) of 2001. (...) This concept of Web 2.0 is distinct from Web 1.0 in that its websites allow users to do more than just retrieve information; it includes a social element where users generate and distribute content, often with freedom to share and reuse.’

However, the Web has very clear restrictions. They are related to socio-political, economic, technological, geographic and cultural context of a community in which a user wants to be a part of the Web sphere.

More precisely, there are imposed restrictions regarding Internet access in insufficiently democratic states (China, for example). Political elite do not want that citizens have global access to information, allowing them to compare their status to the position of people in other countries. The power is here demonstrated in the most apparent way.

Economic context has a negative influence, primarily in underdeveloped and transitional countries. On one hand, they do not have enough resources to provide adequate access to the Web sphere and information flow; on the other, citizens do not have funds for purchasing equipment and Internet connection with monthly maintenance.

However, research results show that ‘in development countries and vibrant democracies, it seems clear that the Internet is increasingly playing a role in political processes and outcomes. In a number of countries, the Internet has been used either as an effective campaign medium or as a vehicle for political mobilization of the populace’. (Tekwani and Klauer 2007: 122)

At the same time, in the leading economically developed, therefore technologically developed countries, like the USA: ‘According to the PEW Internet and American Life Project (Rainie et al. 2005), more than a third of American adults used the internet for political purposes at some time during the 2004 election. The most common uses of the internet were getting news or information about the elections, and using e-mail to discuss politics. (...) One decade after its introduction into the U.S. political realm, the web emerged as a place where many citizens look for politically oriented information and where political activity occurs to a significant extent.’ (Foot et al. 2007: 93)

Technological underdevelopment of countries outside the highly-developed limits the access and the speed of content exchange on the Internet, as well as the use of different ‘user-generated content, such as blogs, wikis, vlogs, moblogs, and so on. These platforms are together forming a new ‘creative commons’, a shared spaces of self-expression and social interaction that radically alters what it means to write (and read), who can produce (and consume) web content, creating a parallel universe, the blogosphere, where – crucially for our discussion here – flows of media content are disrupted, redirected, upset and, to use a phrase from within these emerging scenes, mashed up.’ (Bell 2009: 35)

Geographic context implies positioning of a country in a geopolitical sense as well as some purely relief conditions, which do or do not allow adequate access. Even in some SEE countries, which have very active citizens on the Internet², geographic features of relief limit the access in some areas.

Cultural context shows that Internet users in traditional developing countries are mainly young and middle-aged men. In contrast, users of the Web sphere in highly developed countries are not marked by gender or age. At the same time, some communities such as Amish do not use new technologies and the Internet at all, which is culturally conditioned.

**Political Website**

‘The development of information and communication technologies could easily contribute to development of (electronic) democracy.’ (Vesnić Alujević, 2011: 85) ‘This democracy suggests involving internet users in public dialogue with bearers of public politics and/or representatives of political power centres, and not merely informing on their public activities which was the basic task of classic media.’ (Valić Nedeljković and Pralica, 2012)

Not only did new digital technologies bring about social changes, but these changes were defined by new terms such as ‘electoral Web opinion’. It is defined and studied through the analysis of the relationship between the user and the creator of web content and the content itself.

The most important functions of the Web are: ‘informing, involving, interacting, mobilizing’ (Vesnić Alujević, 2011: 89) – whereby for public political advocacy, these should be interacting and mobilizing (representing, belonging and acting).

David and Owen (according to Oblak and Željan, 2007: 66) note, ‘the internet enables four political functions. First, the internet offers easier access to news and political information. Second, the internet enables new ways for making contacts with public officials and citizens. Third, it opens up new places for political discussions. Finally, the web supports new ways for opinion gathering and for analyzing the public climate’.

Having in mind that the Internet is still a globally unregulated sphere, the content published can have

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² Serbia, for example, is one of the top European countries based on the number of Facebook pages created.
political propaganda as a goal. Bromberg warns about this, stating: ‘While optimists may suggest that networked virtual reality could instigate the first, true consensual, ‘global village’, one might also suggest that it could be used to manufacture political consent or reinforce various ideologies. More reasonably speaking, the interplay of various interests, discussions, impulses and paradoxes of technology will determine the way, that is ways, in which users, industry, the state and others will adopt virtual reality’ (2001:209)\(^3\).

The Web sphere consists of political sites of various subjects from public life. Those can be divided into four major groups: (a) government and government institutions; (b) political parties; (c) politically marked non-government organizations; and (d) foundations with a political mission.

The label in the Website name already indicates the background of a subject’s site.

The sites with the domain .gov belong to government institutions. It is assumed that the information is verifiable and serious, and that their source is reliable.

The sites with the domain .org are carried by civil society organizations. The reputation of such organization is a guarantee for credibility of information published on the sites. Political parties belong to this group (for example: http://www.ds.org.rs), as well as non-governmental organizations which fight for human rights and other political ideas and ideologies.

Political parties often use their country’s code label after the name abbreviation (for example: http://www.dss.rs), in order to avoid a priori evaluation of their credibility based on the domain only.

Domain .net belongs to the sites with content difficult to verify. The information can be published by anyone. The owner, or the site administrator, is not obliged to prove authenticity, reliability and accuracy of the information provided.

**Cyber-campaigning**

One of the most important functions of political sites is election campaign.

‘In the context of electoral web spheres, online structures may facilitate engagement in the election process through three interrelated activities: provision of election – related information, opportunity for discussion and debate, and opportunity for undertaking election-related political action. (…) This formulation of political engagement (…) suggests that obtaining information, engaging in deliberation and participating in decision making are the constituent components of (digital) democracy.’ (Jankowski *et al.* 2007: 7)

Martin Gregor (2007: 78) indicates that ‘by scanning a party website, voter might discern whether the party is interested in expertise, whether it reaches out to marginal voters, and whether it addresses timely issues in an expeditious manner. Each visitor will obtain these impressions (signals), and use them, consciously or not, when casting a vote. Therefore, parties should pay attention to these signals, especially when their production and delivery is so cost-effective’.

The first election-oriented websites appeared in 1994 in the USA (Foot 2007: 92). *Cyber-campaigning* has been extremely developing since then in all the countries around the world, both developed and underdeveloped. The difference is, of course, in the degree of democratic development of society, technological development of a country, openness of citizens to new means of citizen participation, the way sites are organized and with which purpose, type of parties (leading or non-leading), number of those who have access to the internet, etc.

It is important to distinguish between two main activities of the Web sphere regarding elections: web campaign and web voting.

In Serbia, political parties used the Web sphere in their campaigns as an additional tool to spread their election promises on all levels including the 2012 presidential elections.

Based on statistics, the overall number of internet users in 2011 in Serbia was 4,107,000\(^4\), which makes nearly 60% of the population that goes on-line. It is a satisfactory base for cyber-campaigning, particularly because the majority of the users belong to younger population, which does not vote in high percentage. Well-created cyber-campaign could move them and stimulate them to use their basic citizen right – to vote and to be voted for\(^5\).

**Challenges and Limitations of Political Web Campaign**

*The Internet and National Elections, a comparative study of web campaigning* gives an insight into challenges and limitations of political web campaigning in the world. A group of authors (Kluver, Randolf, Nicholas W. Jankowski, Kirsten A. Foot and Steven M. Schneider), together with their associates, analyzed the situation in 14 countries – from the most developed, like the USA, to those with much more modest potentials, like Sri Lanka. Apart from that, they write about societies with different economic, technological and democratic potential (Japan and Hungary; South Korea and Philippines) and countries of different sizes and geographic position (Australia and Slovenia). The study is thus exceptionally referential for the research presented in this paper.

\(^3\) A Serbian translation of the original citation has been used as the source.

\(^4\) The information can be found at: http://www.hugemedia.rs/blog/2011/07/29/konacna-analiza-internet-marketing-u-srbiji-i-hrvatskoj; viewed on May 23, 2012

The main result of the research is that ‘the type of political actor producing a site was more potent than human development, technological development, and political culture variables in explaining web production practices’ (Kluver et al. 2007: 258).

The authors divided comparatively evaluated results into four general indexes: Informing, Involving, Connecting, and Mobilizing.

In brief:

‘The informing index comprises five distinct and relatively straightforward features. The first is a biography or ‘About Us’ text. (…) The second feature is information about issue positions held by political actors within the web sphere (…) The third is information about voting (…) A fourth feature included in the informing index is general information about the campaign process. This includes information about the campaigning rules and possibly governmental regulations on campaigning (…) Finally, the fifth feature used to construct the informing index is the presence of speeches, either in the form of audio files, video files, or simple transcripts.’ (Kluver et al. 2007: 247-248)

‘The index of involving also comprises five features. First, the involving measure includes the presence or absence of features enabling the site visitor to join the organization or group sponsoring the site. (…) The second feature is the ability of the site visitor to sign up for an e-mail distribution list. A third involving feature is the provision of forms or other materials that enable visitors to volunteer in the electoral process in some capacity. (…) The fourth feature in the involving index is the provision of a calendar of events (…) Finally, the involving index also includes the presence of features used to allow site visitors to donate money’ (Kluver et al. 2007: 248).

‘The Connecting index is based on three features by which a site producer creates bridges for visitors to other political actors. (…) The first feature (…) is the presence of an endorsement or endorsements of particular candidates or parties in the upcoming election (…) The second is the presence of information that facilitates a direct comparison of parties or candidates on particular issues. (…) Finally, the third feature included in the connecting index is the presence of information or links that enable the site visitor to register to vote in the upcoming election.’ (Kluver et al. 2007:248-249)

‘The Mobilizing index is based on four features, and (…) reflects the efforts of a site producer to enable supportive site visitors to become advocates. The first (…) would include the ability to download images of posters or flyers to copy and distribute at meetings or rallies. A second feature (…) is e-paraphernalia. (…) A common form of e-paraphernalia is the downloadable screensaver, which communicates an affiliation or message to one’s co-workers or others that share one’s computer space. The third (…) is that (…) for example, site producers may encourage visitors to write letters to newspaper editors, or attach their name to a petition or endorsement in support of a policy agenda or political actor. (…) The fourth feature associated with mobilizing is a ‘web to e-mail’ application for a site visitor to send a link to someone else’s e-mail address.’ (Kluver et al. 2007: 249)

Finally, the authors summarize the information in several indents. Therefore, comparatively observed, the results of the study indicate in short that:

‘Parties and candidates examined in Finland, the Netherlands, Slovenia, the Czech Republic, and the United States tended to use websites to provide information to potential voters, journalists, and other political actors, but did not seek to engage or involve or mobilize citizens.’ (Kluver et al. 2007: 262)

‘(…) the internet in a number of countries around the world merely reinforces, or even reifies, existing political divisions, realities, and animosities.’ (Kluver et al. 2007: 262)

‘At the same time, there is evidence that the web is being used to attract specific audiences on their own terms.’ (For example: political sites for youth in the UK.) (Kluver et al. 2007: 263)

‘(…) do political actors simply imitate one another in how they deploy the web or are they responding to a communicative need of the moment and their perception of the potential of the internet?’ (Kluver et al. 2007: 263)

‘(…) the web presence of political actors was primarily information-oriented, top-down communication, (…) there is considerable ferment in the patterns of web campaigning.’ (Kluver et al. 2007: 263)

‘To the extent that the emerging styles of web campaigning, resulting from a new generation of political actors and a new generation of internet technologies, are more sensitive and responsive to the needs of the citizens’ (Kluver et al. 2007: 264).

The quoted study of Kluver et al. identifies basic courses and models of cyber-campaigning. Serbia was not included in the research corpus of the study which was an additional challenge for our research whose results are presented in this paper.

The comparison of the conclusions of the Kluver et al. study and the results obtained by our research was not entirely feasible since the methods and techniques differed. Even so, basic trends in cyber-campaigning proved to be nearly the same despite the eight year gap between the studies. This primarily indicates that Serbia is behind cyber-campaigning trends in the world. It also indicates that political parties did not miss on ‘beginner’s mistakes’ of the developed countries, or they did not follow the examples of good practice and adjusted them to their own abilities and cultural code.

The explanation might be looked for in another conclusion of the Kluver et al. study. Researchers found similarities between political parties in all the countries.
A reason for that is ‘(...) the aforementioned role of cross-national consultants, the desire to establish international legitimacy, and the particular needs of the web producer, and the purposes for the sites they produce.’ (Kluver et al. 2007: 258)

2. GOAL OF THE WORK

The goal of the research, which was the basis for this paper, was to determine to what extent the information as well as parties’ website setup meet communicative needs of internet users⁹, potential voters. This was carried out through the analysis of visual and textual website content of parties competing for citizens’ votes in the 2012 election cycle.

3. METHOD AND CORPUS

The basic method used was quantitative and qualitative content analysis. A special code protocol was defined for the analysis, on the understanding that visual and textual content of the site were divided clearly in 5 and 10 categories, respectively, for the purpose of site coding in code protocol.

Comparative method was used for presentation and deliberation of information.

Only a part of the results of this vast research is presented in the paper.

Corpus: the sites of eleven relevant parties in Serbia were followed cyclically throughout April until the election day (May 6):


Candidate lists were approved by the National Election Committee to all parties whose sites were analyzed. This means that they were regular participants in the election cycle of 2012 on all three levels.

Seven of eleven parties whose sites were analyzed had their candidates on presidential elections as well (SNS, DS, URS, SVM, DSS, SPS, and LDP).

4. RESULTS

General Observations

Positioning of pre-election content on political parties’ sites

The analysis of political parties’ sites in Serbia during election campaign showed that mainly all parties separated the information referring to the elections on their websites. Therefore, they did not create new sites for the purpose of election campaign. Candidates did not, not even the presidential ones, have their own personal websites.

Most often parties followed the model which was used by DSS for example, having the main page of the party’s website dedicated to the election campaign. Consequently, the website main page was dominated by two elements: party’s ordinal number on the ballot paper and a party leader close-up photography.

The site of the Party of Democratic Action of Sandžak (SDAS) did not have a visibly separated section for the elections, but all the news published on the main page were dedicated to the elections.

Pre-election silence

Administrators of the parties’ websites had different attitudes towards pre-election silence, too. Some (for instance, the Social Democratic Party of Serbia) followed Instructions to all radio and television stations (broadcasters) brought by the Republic Broadcasting Agency (2012). They had a ban on publishing any kind of content related to the campaign from Thursday at midnight till Sunday at 8 p.m. when polling-stations were closed.

Others (for example the United Regions of Serbia) took content from other daily papers (Blic, Politika) even during the pre-election silence.

It should be emphasized that when it comes to the press, the rules on pre-election campaign coverage were not prescribed. The Press Council, which normally is not very active in Serbia and its work is surrounded by controversy, reacts only to reports on the breach of professional journalism code of ethics. They considered it enough for the media to go by the code when covering on election campaign. More precisely, members of the Council believed that it was not the task of this independent body to set standards in coverage on the election campaign.

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⁹ The research was also conducted within the interdisciplinary project 47020 Digital media technology and socio-educational change financed by the ministry of education and science. I would like to thank my consultants Agnes Asodi Ćurčić, Marina Grinja, Jelena Jovović and Tijana Femić who helped coordinating the material and with their creative suggestions helped this text gain its final form.
The research carried out by Novi Sad School of Journalism on media presentation of the 2012 elections indicated that during the pre-election silence the press did not abide by the standards which applied to the electronic media. Online editions of print media did not pay more attention to pre-election silence at all. One of the arguments suggested that it was not possible to delimit cyber space-time in that sense, as it is essentially unlimited virtual reality.

The discussion on how to manage a Web campaign in Serbia still has not been opened. Broadly speaking, in the 2012 cyber-campaigning everything was allowed. Some parties, such as The Serbian Progressive Party (SNS), used this fully to their advantage, advertising not only on their own website, but also very popular websites like Aladin. Even during the pre-election silence, there was photography of the party leader Tomislav Nikolić and Aleksandar Vučić on the main page of this site and its very popular section “Movie contents”. None of the other parties had an advertising leaflet on Aladin, which, let us remind you, is visited by all age groups. The site is not marked politically or in any other way, so we can assume with great certainty that the coverage of users, among whom potential voters as well, was large.

Content update

The content update on the observed sites varies. Most frequently, a few times a day, photographs were uploaded on SVM’s (The Alliance of Vojvodina Hungarians) site. URS’s site was updated daily and new texts appeared every 2-3 hours.

Contrary to this practice, the content on the Bosniak Democratic Party of Sandžak’s (BDSS) site, as already mentioned, did not change throughout the whole campaign.

It could not be concluded that, for instance, parties with longer tradition change the content of their websites more often since for example URS does this, although it was formed a few months before the elections, whereas a likewise young party BDSS does not. Similarly, when it comes to content update, big parties compared with smaller ones do not make any significant difference either. For example, SVM who gather membership of Hungarian national minority in Serbia (thus not a party with a large number of members) update their website even a few times a day.

Website visual content

Multimediality is a feature of the majority of the 11 sites observed and in this they follow contemporary trends in the Web sphere. Most often these were short reports, or just inserts of audiovisual record from a party promotional event. Trailers were prepared in such a way that the media could easily use them as material when forming their own columns. URS paid special attention to video clips from promotional pre-election rallies. Furthermore, they uploaded an interview with the party presidential candidate.

Additionally, websites contained promotional video clip (SPS, SVM, LDP, DS, SNS …).

The Bosniak Democratic Party of Sandžak is the only one that did not have multimedia content.

All the observed parties paid exceptional attention to photographs. From a technical point of view, they were given in high resolution in order for them to be appropriate for the media.

On most websites, party leaders were shot in close-ups. On SNS’s site, this was brought to maximum. The two leading people, Tomislav Nikolić and Aleksandar Vučić, were placed on the left and right margin of the site as full figures in motion, forming thus the frame of the site. These photos are a part of the main page designer’s solution, not life photos from an event. The whole visual identity of SNS’s site is subordinate to the party leaders (Nikolić i Vučić).

Colours of websites match the colours that parties took to represent them. On Serbian political palette cool colours dominate. Blue with its various nuances is the most common one and somewhat less frequently – green. When it comes to warm colours, the most frequent one is red (not as a part of Serbian tricolour, but as the colour of a party – for instance, SPS). In political marketing the right centre traditionally opts for cooler colours and flowers to represent them, whereas the left centre chooses warmer nuances. This was the case in the campaign of 2012, too. For example, SPS’s symbol was a red rose and SDS’s – a blue cornflower.

Website textual content

The most active in the monitored period were DS with 48 different texts placed on their site and LSV whose Information Bureau published 46 texts; DSS followed with 38 and LDP with 30. Twenty-six texts were published on SPS’s site, 24 on URS’s, on SNS’s 22, SDPS’s 21 and SVM’s 16. The Party of Democratic Action of Sandžak published 11 texts and BDSS only 4, which was the lowest number.

7 A part of the results was published in the monograph “Who did the media choose and which messages did political parties send to voters??” (2012)
The number of texts placed on the observed political parties’ sites during the 2012 election campaign.

The sources of the placed content are: a) party’s authorship; b) texts without given authorship; c) content taken from classical media; d) agency as a source; e) mixed; inconsistency in stating the source.

Parties acted differently when it came to identifying the source of the texts placed on their sites. The results of the analysis did not indicate regularity, a strategy contextually conditioned by a) party orientation (right vs. left), b) party duration (old vs. new) or c) party size (small vs. big).

For example (a) SNS (the right centre) in 100% of the cases signs the content placed by “the party”. The same is done by LSV, the left centre. As opposed to that, the dominantly democratic DS took 87% of their content from agencies, 13% from others.

Next, (b) one of the oldest parties, DSS, are an example of the mixed source (45% not signed, the party as the source in 42%, other media 13%). In the same way, a relatively young party, SDPS, has 75% texts without authorship, 10% signed by the party, 10% by other media and 5% are agency news.

(c) A big party like SPS in most cases (73.08%) does not mention who the author of text is, but only through further comparison of the text on the Internet the media that originally published it can be found. LDP, a much smaller party, behaves in the same way as they do not state authors of the content on their website in 81% of the cases, or where the content was taken from. Likewise, a small regional part such the Party of Democratic Action of Sandžak does not state the source for any of the articles on the site, hence 100% of the cases.

Why is the source important? First of all, the basic rule of publically presented content is stating its author as this is the way of determining the credibility of the information and protecting copyright. Furthermore, that is an indication of seriousness and responsibility of the site owner him/herself. Finally, users are provided with the possibility of checking the stated information.

Political parties cherished their own sources on their sites or they took texts from traditional media (journalist agencies, print and electronic media).

The strategy of putting the party as the source of site content can be seen as their tendency to keep all information under strict control when it comes to both manner and matter. Thus, parties implicitly send the message to their site users of being distrustful towards the media and their professionalism.

The strategy of taking the content from other sources (weather agencies or traditional media) suggests the tendency of a party to point out their popularity with general public, especially with the media. At the same time, the media are considered to be considerably less persuasive and propagandistic source of information than, for instance, parties. Placing media content about themselves, parties implicitly send the message to voters that this information comes from independent sources and can be trusted completely. Along with this, we should have in mind that every site has its editor, especially party sites, and these “gate keepers” will not overlook even the slightest information that does not go in the party’s favour.
Parties that decided to use mixed system of treating sources foster good sides from both previously mentioned strategies.

And finally, the ones that do not define authorship essentially imply that the party itself is the author, although users do not have concrete confirmation, that is to say, at an implicit level, they reject the responsibility for the truthfulness of information on one side, but on the other they want to participate in information chain. Still, they might lack the capacity and are not willing to show it in public.

Genre points out the importance which is placed on the content by a party or traditional media from which the text is taken.

In like manner, we should keep in mind that Web spheres prefer shorter, factographic genres (news, report, less often an interview). Analytical genres are rare (commentary, reportage and ever more modern non-journalistic genre blog).

It would be expected that during election campaign parties order analytical texts from experts which would indicate to users the state of affairs in society and possible solutions. In this way, through embedded marketing, the influence on users would be more efficient. The sites of the analyzed parties did not apply that strategy. Moreover, they did not give any possibility to sympathizers, i.e. party members to talk about advantages of the ideas advocated by the party, nor quality of the party elite.

This particular was also acquired in the study by Kluver et al. (2007: 263), where it is stated that mainly all of the observed sites are primarily information-oriented during the campaign.

Blog is a new analytic form. In this category we also find Weblogs (blogs), video blogs (vlogs), user-driven sites such as YouTube, podcasts, mobile phone campaign messaging and recruiting, and a lot of other innovations (Kluver et al. 2007: 263). From all the above mentioned, we only identified a blog and YouTube on the analyzed sites of our parties.

A blog was used mostly, though only sporadically, by URS (5%); the same as SDPS, DS, SNA and DSS as the leading parties NOT EVEN ONE.

LDP was the only party to recognize the significance of blogs. Texts for the site are written by 20 bloggers - considerably more than in other parties. Blogs are personal observations, critiques and views on socio-political situation in the country. Some of them have one or two comments, but no more than that.

Hence, this non-journalistic genre, which is at the same time a journalistic genre, is apart of The Mobilizing index identified by the Kluver et al. (2007: 249) study. This possibility was left underused in the 2012 elections’ Web campaign.

Topic

All parties were occupied with the same topic, offering similar solutions. Briefly, “investments” and “employment”, i.e. “socio-political situation in the country” were the backbone of both position’s and opposition’s campaign.

Only DSS still had their focus on the issue of Kosovo, the NATO and EU membership. The solution offered this time was “both…and” as opposed to 2007/08 when the only possible answer to the same topic was “either…or”.

On SNS’s site the majority of texts were about investments (60%), almost half as many were on socio-political situation in the country (35%), and quite few on health care system (3%) and human rights (3%). The party that aspired to take office, and eventually succeeded, in their Web sphere promotion chose to “offer” something rather than “criticize the existing”.

Unlike them, SPS – another winning party in the 2012 elections acted in a completely opposite way. In their site campaign, they considered mainly socio-political situation in the country (50.01% texts). The second topic in significance on this party’s site was regionalization and decentralization (26.93%). At the same time, the topics which should worry the coalition around SPS (PUPS and JS), such as new workplaces (3.84%), pensions (0%) or health care system (0%), that is to say human rights in general, were not in their focus at all.
SDAS placed socio-political situation in the centre of their attention (46%), as well as human rights and procedural questions on the elections (18% each).

LDP also put socio-political issues in the foreground (36%) as well as procedural questions on the elections (20%), then investments (10%), new workplaces (7%) and the status of Vojvodina. It is a unique case that a party of general type put the question of Vojvodina on the site at all.

SVM considered socio-political situation to be the most significant issue in the campaign, so 37.50% of their site content was dedicated to these topics. The second in significance was the question of Serbia’s relationship with the EU 18.75% and in the fourth - regionalization with 6.25%. Although this party was very active when it came to supporting Vojvodina’s autonomy, there was not a word about it on the site. Perhaps this strategy for Cyber-campaigning was chosen because the president of the party was at the same time a presidential candidate.

Contrary to this, another regional party – LSV put Vojvodina itself in focus with 47.50%, then socio-political situation in Serbia with 22.50%, which is basically in an indirect way the question of the region’s status again. The election system was dealt with in 17.50% of the cases.

URS kept to their programme, so decentralization was the topic of 60% of the texts on this party’s site during the election campaign. 30% of the texts were dedicated to socio-political situation in the country, but these topics touched upon the topic of decentralization, too. Only 7% of the texts were about opening new workplaces. Since investments and the economy revival are the focus of the party, this is unexpectedly low percentage of the texts from the area. Barely 3% of the topics were dedicated to Serbia and its EU accession.

The same way, on the site of DS, who turned out to be losers on all levels in the 2012 election cycle, the most significant and most discussed topic was the topic of investing in the country (39%). This was the area in which DS was not successful enough in the previous two mandates. The second most talked about topic were new workplaces, written about in 22% of the cases. Socio-political situation was touched upon sporadically (15%) as it was clear that it was bad, which was also partly a result of their policy. Very important topics for Serbia were completely marginalized too, such as corruption and health care system (5% each).

Therefore, for Cyber campaigning parties chose the topics which supported their pre-election programmes. At the same time, they avoided hot topics like corruption, health care system and free education. They promised new investments but not as often new workplaces as that would soon turn out to be (in)correct.

Campagne/Anti-campaign

Another question that arose in connection with cyber communication of parties and voters was the way they perceived themselves, or other parties, that is to say, weather it was more important for them to emphasize their virtues or point out others’ flaws. More precisely, it was the question of campaign and anti-campaign.

Most parties were predominantly concerned with themselves, not others, like URS and SDAS (100% about themselves), SVM (others 13%), LSV (others 10.86%), SPS (11.54% others). Only the leading SNS insisted on an anti-campaign.

The campaign that was lead on SNS’s website was a campaign for themselves in 55% of the cases, whereas in 45% of the cases it was an anti-campaign for others, mostly against the ruling DS.

Even DS, who in pre-election video clips had lead a strong video clip anti-campaign (Valić Nedeljković and Pralica 2012), had 94% of the content about themselves and their own campaign during Cyber campaigning, whereas only 6% against SNS.

Interactivity

Interactivity is the most important advantage of the Internet election promotion compared to the promotion in the classical media. None of the observed and analyzed sites offered their users/potential voters a full, everyday personalized interactivity (for example, a chat with their leader or candidates, posing questions to the leader/candidates and up-to-date giving answers).

“Interactivity on the observed parties’ sites is (a) indirect, referring to social networks Facebook and Twitter (DS, LDP, SPS, SVM, LSV), or YouTube (SPS, SVM, LSV); (b) exists to a certain, controlled level(LDP, SNS), then (c) exists but is not active (The Bosniak Democratic Party of Sandžak), or (d) does not exist whatsoever (the site of the Democratic Party of Sandžak)” (Valić Nedeljković, Dubravka 2012).

Parties used the variable (a) most often. The analysis of Facebook comments indicated the following:

- Parties “edit” comments. They erase negative ones mostly, but leave the replies to them. The same results were acquired by Dan Thu Nguyen and Jon Alexander (2001:168).

Example 1 DS

Milivoje Stojanovic: Why are you erasing statuses and concealing the will of fb citizens? You like to live in conviction that you are the majority and that people love you? No really, you lost and that was expected, accept the defeat like Christians :)
Example 2 DS – a comment by “Alexei” is missing, only the comment to his comment was published.

Dejan Ruzic: Alexei don’t give me that bilge please you been to Kraljevo? Seen all the things that were rebuilt and remember 98 and the earthquake in Mionica and on ub! How wasn’t it stopped, aren’t you ashamed to talk such bilge, Tadić pursues a wise policy and goes for KIM division which is the only viable way!

- Facebook users address candidates directly like in a private interpersonal communication. Most often this is done by giving advice and recommendations for taking action.

Example 3 DS

Damir Susic: Boris Tadić, you are smart enough without that swine from Laktaši who destroys everything before him. Beware of him.

- On the site of the party of their preference, users put anti-comments about opponent parties’ candidates.

Example 4 SNS

Jana Jovanovic: Geez if only Tadic would just be brought down... Tadić= Thief, junkie, steals to do druuumu :D

- Activists’ comments on voting.

Example 5 LDP

Merfan Mumdzic Mecan: On Sunday we’re voting for a turnover on all levels... of course...

- Comments of users supporting party programme.

Example 6 URS

Slavica Sladakovic Ex Miskovic: Stop employment based on political affiliation? Great, I’m not a member of any party and, imagine that, I don’t have a job!

- Parties engage in dialogues with Facebook users, but most often on irrelevant things, such as advertising material.

Example 7 URS

\textbf{Ujedinjeni regioni Srbije}: So here we’ve checked. We’ll give away 10 T-shirts for our Facebook page fans. We’ll let you know later how and where you can pick them up tomorrow. If there’s anyone else interested, let us know. The T-shirts are for the people coming to the rally in Kragujevac, that’s where we’ll hand them out.

- Users support a party as such. They often to this “in the name of” a larger community so that the support gains on its significance.

Example 8 SNS

Stefan Lazarevic: Go progressives, Republika Srpska is with you. You are our future, the future of Serbian people.

- Users sign their full names much more often than when, for example, commenting newspaper articles. If they do use a pseudonym, they use metaphorical ones, alluding to the subject of the comment.

Example 9 SPS

Srđjan Adamovic: Dačić for the premier! Finally the right man on the premier’s position.

Example 10 URS

Mita SaMo OpuSteno (eng. Mita JuSt RelAx): just go ahead-you’re the best!!! :))

Of all the identified indexes on websites of the analyzed parties during the campaign of 2012 in Serbia, the Index of Involving and the Connecting index are partially present. These indexes, let us remind you, entail: “The index of involving is also comprised of five features. First, the involving measure includes the presence or absence of features enabling the site visitor to join the organization or group sponsoring the site” (…) “The Connecting index is based on three features by which a site producer creates bridges for visitors to other political actors” (Kluver et al. 2007:248-249).

When it comes to the Index of involving, parties structured their sites in three ways:

a) on the main page they opened up a possibility for a client to become a member of the party by filling out an online questionnaire at the bottom of the page. This kind of strategy was employed by DSS. The questionnaire consists of 58 questions from personal to professional data, including for instance a question about religious beliefs, or professional status earlier and now.

b) They placed on their main page a hyperlinked possibility to register. On DS’s site the simplest solution was given – “Join.
“us” hyperlinked to an online questionnaire comprising only the basic information: name, surname and e-mail address. On LDP’s site, for example, two possibilities are hyperlinked “I want to become a member” with two variables “Admission form” and “Certain vote” and “I want to help” By opening the link we get a questionnaire which users fill out online. LSV offered in the menu only Get involved!, but with a lot more variables: Become a member, Suggest, Volunteer, Sympathizer, Mailing list.

They did not provide a possibility for participation on a visible and easily accessible place. This strategy was applied by the parties that won the 2012 elections and formed the government – SNS and SPS.

Other possibilities of this index were not used.

Subject

The position of power in society is also determined on the basis of the person who has the opportunity to speak publically and have his/her words quoted directly, i.e. who the subject of the texts is. These persons also have most influence and are the most recognizable in the public sphere.

On DS’s site, candidates from this party’s list were represented by 42%, their presidential candidate by 31% and the list leader by 21%. Given the fact that the presidential candidate and the list leader was one and the same person this means that Boris Tadić was the subject of more than a half of text published on DS’s site.

A similar strategy was noticed on SNS’s website. Subjects of texts were the party’s candidates in 60% of the cases, in 30% it was their presidential candidate and in 10% the list leader who was at the same time a presidential candidate.

On SDAS’s site as much as 64% of the texts had the list leader as their subject, 27% other candidates and 9% VIPs.

SPS also favoured their presidential candidate who was also the list leader. He appeared as the subject in 53.85%, whereas other candidates did so in 43.1% texts.

URS’s site followed the pattern. Candidates were subjects of the texts in the election campaign in 40% of the cases, their presidential candidate in 30% of the cases (when it comes to URS, these were different people).

LDP was also a party with a presidential candidate who was at the same time the president of the party and the list leader. The presidential candidate was the subject in 44% of the cases, the list leader (the same person) in 3%, other candidates in 33% whereas party functionaries in 20% of the cases.

Candidates on all levels of elections most often appear as subjects of texts on the sites of Vojvodinan parties; SVM (68.75%) and LSV (71.43%). When it comes to SVM, significantly less attention is given to their presidential candidate (18.75%), so it looks like this party had a realistic attitude towards their candidate for the president from the beginning, as his chances were quite slim. Sympathizers of the party and VIPs are in the third place (SVM 6.25%, LSV 10.25%). As LSV’s list leader was not also their presidential candidate, he appears as a subject in high percentage 18.30%.

The Social Democratic Party of Serbia gave their candidates a lot of space on the site; they are subjects in 66% of the cases. Their party president and the list leader (5%), who was also a candidate for the country’s boss, and as such was the subject of texts in another 19% of the cases.

Picture 4: Subjects of texts on the sites of the observed political parties during the 2012 election campaign.

In Cyber-campaigning, party lists’ candidates and presidential candidates had absolute predominance as subjects in texts and thus bearers of attitudes. Experts, VIPs, citizens as sympathizers, i.e. party membership,
were not attractive enough as bearers of ideas and attitudes to secure the position of a subject for themselves in the texts of political parties in the period of pre-election campaign 2012.

5. CONCLUSION

In this election period of 2012, unlike the previous ones (2007/2008), political parties in Serbia understood the significance of the Internet as a new space-time. Web-campaigning encompassed principally the placement of information on the activities of party leaders in the election campaign, and by this, promotion of political ideas, attitudes and candidates.

The sites of all the 11 observed parties are similar in form and content, just like the Kluver et al. study showed.

All the observed sites were professionally created and regularly updated. They offered mostly relevant information on the course of election campaign except for the site of the Bosniak Democratic Party of Sandzak which was not updated during the whole campaign at all.

However, just like in the Kluver et al. study, all the observed sites were primarily information-oriented, with top-down communication. They lacked real interactivity and mobilization of members and potential voters.

Parties endeavoured for the texts to be informative rather than persuasive, more precisely, that they are not visibly propagandistic. They would rather use the strategy of embedded advertising, which is always more efficient with auditorium.

Political parties in Serbia did not prove to be ready to meet the challenges offered by interactivity through public dialogue, regardless of the result being negative, which would imply the site being “attacked” in an organized way by questions and attitudes of political opponents, or positive, which would indicate a scheduled direct online dialogue with candidates thus enabling potential voters to decide who to vote for through a discussion. One exception was the site of SNS which gave users a possibility to address Tomislav Nikolic and Aleksandar Vucic, as well as LDP’s website.

Parties preferred referring users to social networks such as Facebook where it was possible to leave comments.

When users, taking advantage of those opportunities, “engage in a dialogue” with a party in an indirect way by posting comments on social networks, they do not really open discussions on any important topics. They either “converse” with the administrator on the social network about insignificant things (ask for T-shirts), or support the party as such, or give negative comments on opposing candidates.

Similar findings were acquired by researchers from Finland within the Kluver et al. study, concluding that “Most sites resembled traditional brochures rather than new interactive, innovative campaign outlets” (Carlson and Strandberg 2007: 39).

Parties, apart from DS and SNS, did not pay much attention to a special target group, the young for example, which was the case in the Kluver et al. study for the United Kingdom. They only insisted on photo galleries and multimedia, elements that attract younger website users. By way of reminder, the most common users of the Internet in Serbia are precisely the young. At the same time, they were also the target group which prevailing topics of the campaign (investments and employment) were intended for. Nevertheless, the texts themselves on those parties’ sites were not adequate in style and form for the ones aimed at. Parties considered that they satisfied this target group by linking their websites with social networks, mostly Facebook as it has been already mentioned, which is the most popular one among the young in Serbia.

Except for the young, photographs given in high resolution were also intended for the traditional media and their free download. Close-ups of party leaders prevail on these photos.

In terms of equipment and content, sites followed the logic of the media, i.e. traditional brochures just like it was stated in the Kluver et al. study.

The majority addressed the audience in the Serbian language in Cyrillic and Latin script. Even distinctively pro-European parties (for instance, DS and LDP) did not offer content in the English language which could be expected. The exception was SPS who offered the possibility to choose among the Serbian, Russian and English language, Cyrillic or Latin script.

Unlike the findings in the study of Kluver et al., the sites of the analyzed parties in Serbia during the election campaign of 2012 had only sporadic elements that made the site a place for gathering and winning over sympathizers. By way of reminder, Kluver et al. identified in their study the Index of involvement, the Connecting index and especially The Mobilizing index. However, the sites of our parties by the philosophy of the site itself had a very restrictive intention of attracting citizens and involving them in the pre-election activities. Their role was principally to inform. They took texts from the traditional media more often than they created their own content, that is to say, engaged experts to write analysis which would contribute to empowering users to make the decisions of who to vote for.

As already mentioned, seven of eleven parties whose sites were observed, also had their candidates on presidential elections (SNS, DS, URS, SVM, DSS, SPS, LDP). None of the candidates had his/her own promotional site for the presidential elections. They prevailed with their presidential election campaign activities on the sites of the party that nominated them and thus suppressed the information on the activities of the candidates for national, regional and local elections. This way, party web sites, following the media logic, placed national and
presidential elections in focus, putting the regional and local ones aside. The only exception is LSV’s site which had regional elections in its focus.

And finally, it should be pointed out that all sites were easy to access, use and search. The real insight into how much they were visited during the election campaign was not possible to gain as this kind of information the sites do not contain. Additionally, so far no comprehensive researches have been conducted about the influence of Web campaigns on the electorate in Serbia. The stated should be kept in sight when creating research projects for the next elections.

LITERATURE


INFORMATION TECHNOLOGY IN EDUCATION AS A RESULT OF SOCIAL DIGITALIZATION

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Abstract: Although, up until now, education has been traditionally oriented, with development of e-learning, focus has slowly shifted to personal needs of individual educational subjects. Digital age has significantly influenced educational process and radically modified existing learning and teaching processes, with tendency to change it yet again, so that traditional concept of classroom methodology slowly loses its dominant role.

Development and use of information and communication technology have transformed contemporary society, creating “digital society”. Main feature of this new era is that information and communication technologies play the most important role in production, economy and communication, as well as in all other aspects of social activity, so its implementation in educational process comes as a logical necessity.

In a relative short period of time, computer technology has altered the process of education. E-learning brings efficient and affordable method of momentary dispersion of new knowledge through spatially undefined conditions (remote places, different countries, other continents).

Many countries have already initiated or are in the process of bringing upon initiatives that will mark the beginning of a revolution of new technologies in schools, and this paper examines positive and negative aspects of that revolution and of usage of Internet in education.

Keywords: Digital age, information technology, Internet, education, e-Learning.

INTRODUCTION

At the time of fierce development and quick changes in our mobile world, these questions become more important? How to keep up with time, how to prepare the young for the future which will be more complicated and which will provide the society with the further progress in economical, cultural, social and scientific area. The society which carefully follows the current courses of development is conscious that the education of the young generations represents one of the biggest factors in present and even more in the future. [1]

The sudden development of scientific discoveries, and especially the development of new technologies has brought the modern world in the process of deep, constant and unstoppable changes. These processes influence the development of educational needs of men, they increase the educational demands in work processes. The educational needs in the process of development are accelerative, from the aspect of socioeconomic structure of certain economy systems. Generally, the technological improvements and other forms of changes change the current structure of life and the development of of human personality. In these processes, the knowledge, but before everything the practical skills and arts become a very important resource in the process of development. The knowledge becomes strategic, essential resource of work, not only of the individual and not only in the work systems but also in all other organizational systems. [2]

World education and our education get new dimensions and significance for further changes in of society and man’s position in it. The time in which we live in demands the opening of the society to the world, and especially towards the Europe. Immediate dependency of education and development is more expressed by each day. For the quality knowledge is important, its research, its transmission into the process of life, work and decisions. In the developed societies the main development resource is the human capital, and its quality determines the education. Education should contribute to the suspendible national growth and permanent individual growth. Because of that all developed countries take education as the national priority and apply the strategies of education development which benefit the industry the most and the social and cultural society development as well as the personal development of its members. Modern strategies of educational development are founded on the conception of permanant learning and the conception of ‘learning society’. [3]

By entering the informatical era the education got the assignment to coordinate with the needs of modern technological age and modern accomplishments. It should increase the men’s adjustability to the digital era and increase men’s ability which is needed in the changes which are brought by the technological era.

Although the internet is a great source of information with the biggest diapason of sections in the world, it cannot in any case represent the educational method, and it cannot
substitute any, up till now, established method of learning. Nevertheless, it cannot be neglected as an unavoidable tool in the process of education in the modern world. This kind of work represents a sort of analysis of relationship between modern informational technologies and education, trying to clarify in which way the technology is integrated and used for the learning purposes of the 'learning society'.

INFORMATIONAL TECHNOLOGIES IN EDUCATION

The new informational time implies the development and transformation of all areas of society, and of course the area of education. The growth of information amount on one side and the ways in which the modern man gets to them on the other side, fully changes the concept of traditional education. The accent is on the acquisition of knowledge- simply because the quantity of knowledge is growing progressively, and the aim is the development of personality which will be able to get to the information by using different channels and to implement that information into practice.

Because of these reasons the new methods and forms of education which will set the student in the central part of the process of education are being researched, where his/her needs will be taken care of, as well as hoes/her interests and where his/her activity in the process of teaching will be in the first plan. The classic approach in teaching shows the deficiency and does not manage to keep up with the other areas of society, economy the most, and it results in the produce of such education process which personality is not ready to face the challenges and demands of modern society.

When we talk about the applying of informational systems in education, we differentiate three basic concepts:

- Acquisition of computer literacy,
- The use of computer as a tool and
- Computer as a teacher.

The integration of information and telecommunication technologies in everyday life opens the door to the increased use of internet network. Popularization of Internet in society and the development of infrastructure run further development of the knowledge-based society. The positive role of the internet in on-line communication is understanding and educational use of internet, providing a broad level of resources and services, and creating global awareness and versatility.

The internet has created excellent opportunities for informational institutions to expand their collection of databases, as well as the market and the area in which they operate. The broader policy of supporting the development and implementation of information telecommunications infrastructure contributes directly to and affects the popularization of the internet. Internet with its unique and great connectivity, rapid transformation of the world and a wide expanse of the World Wide Web, creating a wide range of possibilities and creates excellent applications and the development of large databases of useful data and information education centers. Exploiting the potential of these technological resources, web and database libraries can increase their collection, encourage success for creating a wider variety of information resources and to facilitate and simplify the access and the availability for all of their wider use.

There are six areas that are considered to be important in the preparation of informational and educational institutions and training them to take maximum benefit and progress related to the internet and web-based information resources.

These areas are:

- Organizational restructure,
- Development of role, purpose and function of action,
- New initiatives in the provision of education,
- Creating alliances, strategic alliances and networking,
- Effective of mechanisms for linking and
- Creative use of sources and resources.

The leading change in the way of learning is the organizing and the delivery of necessary knowledge in adequate and effective way. Without such changes in technological base, the education is left with the marginal activity and at the same time it causes the enormous increase of costs. In order to make technological changes effective it is usually demined to be followed by significant structural and organizational changes and utilization of all potentials for accomplishing their full affirmation and realization of positive effects.

On-line education, services and processes basically require significant investment. In many ways, it should be the first plan for the development and implementation of innovations. The obligation of the use of informational communication technology implies:

- introduction of digital technology in the process of learning and learning space,
- providing a wide range of connectivity within and between universities and colleges,
- increasing number of computer labs with longer hours of usage,
- creation of web-based educational environment,
- acquisition and development of resources for education and teaching and
- The support for teachers in using the technology and connecting the technology and the process of learning.

The biggest investment and their effective implementation and return on investment are detected in the field of scientific research in the field of on-line communications. University centers have developed a comprehensive on-line technology for teaching and administrative purposes, but new technologies awaken the new challenges.

DIGITALIZATION AND EDUCATION

The expansion of digital media in professional and personal life increases the demand for using these
technologies in education also. This attitude is based essentially on the general social importance, on the future professional relevance of digital media, on educational effects in the improvement of teaching and the results of learning as well as on the potential of changes which could be caused in the system of education.

In this paper, in the forefront of educational opportunities are the effects of education in the electric environment. Digital media in education are a variety of applications: from teaching and learning programs and training, databases and tools for learning through games, experiments and simulations to complex communication and cooperative environment. Concerning this, the possible forms of multiple applications in teaching and in this regard, and learning activities. Expectations effect that foster learning are connected, unless other things, the functionality and the features that are inherent in the digital media and their special offers. In addition to creating learning offers based on different kinds of encoding are related to different sensory modalities, there are, for example, interactive touch objects with learning capabilities to adapt to the conditions for learning, feedback for some learning activities, research and simulation or online create places based on distributed learning section in virtual spaces. To what extent are these resources being used, which forms the predominant use of scenarios whether they fulfilled the expectations of change in cultures and learning outcomes is an empirical question that should be clarified. But the comprehensive evaluation of digital media has to be applied to other educational and learning contexts, as well as the education of young children, youth work, vocational training and adult education and training. In addition, the potential of digital media in general are reflected in their cultural significance and value of their general education.

If the dealing with digital media in education cannot be reduced to the media-didactic questions, and more specifically, to possibility of improving the learning process, other tasks will reach the light which are related to the changes expressed in the term 'digital culture'. Digital media create new new conditions for self-understanding and understanding of the world and the children and young people in particular are used in the process of informal learning. About this form of learning and opportunities to connect it with institutionalized learning process so far little is known. Dealing with digital media should therefore enter the education and everyday life has been based on the correlation between culture and technology.

Former school educational processes are characterized by insularity. The situation changes when teaching with the introduction of digital media - especially the internet - opens and with that loses part of said insularity.

The study of the use and application of information and communication technologies (ICT) in education, with the economical development, creates new possibilities for aligning technologies and applications directed towards useful and usable value to the community. By that the opportunities for significant approach and introducing the new information and communication technologies, goods and services for education and society are made. In order to realize this possibility, it is necessary to secure the staff which is capable of development and usage of information and communication technologies and to conduct the appropriate research and innovations in the field of science, engineering and information technology.

The development of new education forms emerged, primarily based on the following facts:

- global network has made an incredible number of users,
- distinct need of modern era to train people for a lifetime,
- saturation with traditional form of education,
- the possibility to create flexible courses that can be relatively easily and quickly adapted to the needs of modern man,
- the globalization of the process of education etc.

For new, unconventional teaching techniques that are essentially based on the use of computer and telecommunications technology, a name has been established - virtual education.

The introduction of information and communication technologies in education leads to the new and interesting way of conveying the course subject to the students. Virtual classroom does not exclude traditional, but only it is complementary. The students, without leaving their classroom, together with the teachers get from the virtual space the knowledge in an more interesting and more complete way which is not available in the process of traditional teaching. New technologies for the transmission of speech and picture in the real time have definitely enriched the system of education, especially with the appearance of the Internet. The idea about creating virtual classrooms has existed for a long time, but it is impossible to fulfill that completely because of the current technologies.

Electronic education is a broad term that includes any form of studying that is being helped by the information communication technologies. Education supported by the information technologies includes at least three basic components:

1. Computer Assisted Learning – CAL,
2. Computer Assisted Research,

Computer-aided learning is commonly used and is very suitable for the realization of the interaction between students and computers in order to improve the existing technology of learning and to make teaching more obvious, more dynamic and more interesting in order to engage the students’ senses in acquiring new knowledge.
Computer-aided learning includes multimedia educational software, simulation, virtual reality, artificial intelligence and others. Computer classes provide flexible organization of activities, lectures and study material and a complex evaluation of students.

Computer-supported research is significantly used today in higher education institutions for theoretical research of literatures in different areas and for empirical research, with the usage of adequate statistics software (STAT VIEW, SPSS and similar).

Distance learning with the usage of computers, telecommunication, cable TV is getting more and more applied in education.

According to the research of developed countries in which the distance learning was used in the last decade of XX century, differences were noticed in comparison with the traditional teaching, which are reflected in the following:

⇒ teaching is individualized, creating the possibility for the student to make progress at a pace that corresponds his/her psychological and perceptive abilities, as well as the prior knowledge in a particular field,

⇒ combined with other electronic sources of information (electronic encyclopedia, magazines, libraries and www) the research of most current contents in accordance with his/her interests is secured

⇒ constant or occasional interaction with the sources of information increases the activity of students and develops critical thinking, as well as the capability of analyzing and making conclusions,

⇒ interaction is established not only with teachers, but also with the students from different schools, with which they exchange knowledge and experiences and equalizes the level of knowledge in different schools,

⇒ in educational institutions where there are not enough teachers for all subjects, it is provided that instead of people information travel, with which costs are significantly reduced,

⇒ educational software that follows the distance education is projected in the way that provides occasional evaluation of knowledge in the phase of learning, so that in assessing knowledge in interaction with the teacher or other students performs self-assessment using educational software,

⇒ the involvement of the best experts for certain area is secured, which raises the quality of teaching to higher level,

⇒ in universities and schools that have practice in schools, medical centers, factories and other institutions the monitoring and critical questioning of practice is enabled, which makes the lecturing more efficient and lowers the costs,

⇒ distance education, in all cases, represents significant innovation which combined with traditional teaching contributes to the improvement of the quality of the teaching.

In the future, knowledge-based society will form the basis of the development and survival. It will depend on the ability to rapidly innovate and generate new knowledge, ideas and technology through ideas and technology through education and research. Through awareness, development, modification, maintenance and supply of technological innovation, specifically increasing effect on the economy and employment of new and productive workforce. Skilled people are the most important component in the information industry and they prepare, implement and support technology of ICT industry and their further development. Larger basic knowledge in the ICT industry and bigger and faster retrieval of information and technology will make its effect in more rapid development of economy in even shorter time period in from conception to implementation work. The team achieved a significant advantage over the competition and the very possibility of survival.

PEDAGOGICAL FRAME OF WEB-SURROUNDING

Digital, informational and communicational technology have opened broad options for the development of educational technology. The existence of that technology does not guarantee its efficient appliance in education or the quality of process of learning to be achieved.

To respond to the rapid changes in society, to the increased number of the educated people, education in the world and in our region goes through the difficulties of adapting to those fast changes, i.e. The teachers are exposed to bigger auditoriums, the quality of teaching and assessment is not satisfactory, and there is less and less time for learning new technologies for learning. So, the question is imposed; how can we help the teachers and lectures in universities to face new challenges of new technologies and to respond to the demands of time?

As part of the research and development of distance learning SOCRATES which was sponsored by the European committee with a special project was developed educational frame adjusted to the surroundings in which the process of online learning takes place.

Pedagogical frame includes three main dimensions:
- situation of education;
- pedagogical frame;
- Organizational complex.
Situation of education
The situation of education serves to show the community what the tasks, activity and environment are. The situation of education may be the most diverse; sometimes it is 10 students, only one task, only one hour of active learning, and sometimes a large number of students who are doing more tasks over a longer period of time.

The task determines the specificity of the students’ activity and it can be in the form of essay discussion about product manufacturing, laboratory exercises etc… The task should be set in the best way so the student can express his/her creativity.

The environment includes physical proctor with all the facilities from paper to computers and the Internet with resources. Learning is strongly influenced by the environment.

Learning activities interpret task specifications. If we want students to have more responsibility for their own learning, we must accept his/her own interpretation of the task of learning, because it affects a number of actual learning achievements.

Activities and tasks have didactic connection with the learning environment. Environment could be projected to support activities of students.

Pedagogical frame
Pedagogical frame consists of four elements that are connected with hierarchical connections, which are:

- Philosophy is on the very top and it is made of the string of assurances; about the nature of knowledge and competence, about the way to learning, how we should and should not deal with students etc. About these attitudes it is important to have clear and uniformed attitude.

- Pedagogy of high level concerns about making philosophical points of view in the context of new educational situation. A lot of forms of pedagogy of high level, such as learning by discovery, learning based on the problem, computer supported learning.

- Strategy is a detailed description of a plan - what to do to make certain tasks. A description of the supported actions and intentions at the level where are the hidden elements of confusion. Description of actions and intentions can be useful members of the development team, and later of the students.

Organizational context
Organizational context gets great importance when it comes to supporting learning in big and complex institutions such as universities. If there is not enough attention given to the organizational context, there is a danger of idealizing process through which are created and developed pedagogical frames, educational institutions, tasks, learning environment etc. the organizational context secures numerous checkups in those processes, such as the check up of logistics and finance.

Development of the model of the pedagogical frame of work in the web-environment is intended for the support to members of professional teams engaged in the development of programs or courses for online learning. This model is in the function of the proposal for discussion about their project, and not ready for stencil work.

Technology of web-environment
The key concept that connects the computer with the modern society is information. Namely, we are faced to the facts that the society in which we live in becomes more complex and as such inevitably show the needs of the individual for the information in the purpose of orientation in the social environment. Such social cloth caused the development of the computer in the direction of a technical device intended for the treatment, keeping and transfers of information in a comprehensive sense, with the result that the computer finds its place in almost all human activities in such a way gives the seal which belongs to the society - the information society. [5]

Learning is a process of acquiring knowledge, developing skills and forming attitudes and views of individual relationship between students and the information and the environment. The learning is the socio-cultural activity because it takes place in smaller in bigger groups and the communities of students of different cultures. In web environment the communication between students, as well as the communication with the teacher (instructor, professor) can be performed simply, regardless of the geographical distance between them. In web environment you can find the resources for learning, and the available technologies of web environment enable the assessment of students’ Accomplishments in learning.

Internet technology of interest for the education, according to the Center for academic practice (CAP) of Verve University, Great Britain, can be grouped in three groups, as follows:

a) Resources for studying;

b) Communication through computer, and

c) Assessment which is supported by the computer.

Resources for studying - can be simply placed Word documents on the Web, which students download and print, or they can be lectures presented with the PowerPoint, digital streaming video and other interactive programmers.

Communication through computer can be done by any mean that individuals and groups use for communication between themselves. The main technologies which enable that are: electronic mail (E-mail), Mailing lists, Usenet newsgroup, computer conferencing (discussions, lists of similar discussions), chat (Internet Relay Chat, IRC), videoconferencing, and hybrid system.

The advantages of the communication through computer are that it can be synchronous (message exchange in the
real time) and asynchronous (messages are posted at any time, and they are being read by the users at the time that suits them). Asynchronous communication is realized with the help of electronic mail, mailing list, computer conferencing, while chat, internet telephone and video conferencing are the forms of synchronous communication.

Very often a dilemma appears- Which type of communication through Internet should be chosen?

Of course, it depends on the discussion which you would like to have, because every type of communication has its own strong and weak side, as for the technical benefits for software, as for the type of interaction that is being encouraged.

**Assessment which is helped by the computer**

When it comes to this computer help, this question is raised; is it possible to enable the students in Web environment to grade their improvement and understanding of program content by themselves?

Irreversible information forms the instructor or the very sophisticated artificial intelligence; that normally represents a form of an objective test, delivered in the form of an online quiz. As the test is objective so are the answers familiar, irreversible information can be automatized. According to that, the students can get the information immediately for their test results. This appliance of assessment that is helped by the computer for individual and diagnostically marking can be done in a quick way, and gives the information about the effectiveness of studying.

**ELECTRONIC EDUCATION AND NEW FORMS OF LEARNING**

Internet is a global computer network of the network of all computer networks. Internet is known today under the simple name –Net or Web. This global communication system is used by million of people all over the world because of academic or business needs or for finding information for personal needs.[6]

Electronic learning or e-learning does not have a simple definition. One of the technical definitions is: E-learning is any form of learning, teaching or education which is helped by the usage of computer technologies, and especially computer networks based on the Internet technologies. [7]

Electronic learning is, basically, the appliance of informational and communicational technologies in studying. Electornig learning, the learning with informational and communicational technologies (ICT) and multimedia education, are new form of learning which are imposed by the technological achievements and new media. [8]

New forms of learning, innovations and methodology demand a certain reform of all educational systems. In that sense the mission of educational institutions is to enable the secure, modern and stimulating educational environment.

Nowadays the informational literacy is an important condition for broader informational literacy. Informational literacy is defined as the ability to use computers and computer programs. Namely, that is the possession of knowledge about how to find, evaluate and use in the best way the most available information in order to solve a problem, reach a decision and etc. Of course, the source of information can be different but nowadays a special part takes the Internet.

Briefly, the informational literate person is the person who has learned how to study, i.e. The one that knows how to find an information which are needed and how to use the found information.

By spreading the technological improvement and innovations the need for new ways of educational policy occurs. That can be accomplished by changing the educational content, organization of the work which is based on technological changes, and by transfer of scientific knowledges into practice. It can be said that it is a new way of living, thinking, changing the style of work and life. Modern education must include changed contents of learning and teaching methods. It is necessary that the changes of teaching content and methods are reached in all levels of education, but it is important that those changes happen first in the teaching staff and institutions that educate future teachers. [9] By using this principle it is ensured the development of informatics and informational literacy for new generations that will apply new trends. For the development of education in the digital world it is necessary to cooperate with media professionals as well as the contacts of media industries. For the teachers the essential realization of course, seminars and workshops, as the realization of partnership with other educational institutions with the evolvement of mentors, higher school advanced training, individual counseling etc.

Modern teaching should enable the realization for the individual learning unlike the traditional teaching in which there was a strict guiding of students in the process of adopting new knowledges and arts. Once the traditional education enabled the gathering of complete knowledge. Today, the studying is based on the interaction and constant questioning. In that way comes to the bigger educational success, and lowering of the expenses thanks to the bigger number of available information through the means of mass communication.

Learning with the help of multimedia technology brings interaction and enables different attitudes about the problems, and it indicates to the bigger number of information and its critical thinking. Studying in this way helps analysing and interpretation of information in its different forms, questioning of present and new knowledge in the light of new knowledges and the development of arts in broader and different strategies of
learning. New ideas are studied and in that way they are easily mastered and adopted.

Online courses have shown as a very acceptable way of learning and this principle has spread all over the world. They enable learning at home, as well as at the office with the adjustment to ones rhythm and numerous obligations. There is a big number of different offers for the online courses and similar projects of distance learning. The trend of improvement of the online education itself leads to the learning which becomes more tempting than traditional learning.

**EDUCATION THROUGH INTERNET - SYSTEM E-LEARNING**

In the last ten years the Internet has fundamentally changed the practice of learning and teaching, especially on faculties and universities which are well equipped with the new technologies. This fact is evident the most in the transformation of universities with distance learning, which intend to use all the advantages of informational and communicational technology for its own actions, with the goal to improve the quality and lower the costs of lecturing which is offered to students.

When we talk about the possibility of synthesis of educational methods and strategies with the modern informational technologies the concept of distance learning via internet is more and more imposed. [10]

Electronic learning (e-learning) is relatively new term in the world of distance learning. What is actually considered by the term electroning learning? There are a lot of definitions. One, which is used the most is: Electronic learning includes every form of education in which the educational concept is delivered in the electronic form. [6] Others, yet, consider that the electronic learning is the communication between the mentor and the student which is supported by some technological form. [9]

Some researchers consider that the e-learning is the combination of quality and progressive accomplishments of pedagogical technology. It is based on the principles of free learning, using the computer in educational programmes and modern telecommunications (Internet) for teaching. Studying is organized as a process of dialogues in virtual classrooms. That means that the mentor is separated from the students in space/time. [8]

One of the big problems during defining the e-learning itself is the difference in understanding this complex form of learning and the attempt of classifying numerous solutions. New internet technologies enable the use of different records (text, audio and video) that are combined in multimedia content and presented to the student. Learning is a process which includes the number of possible activates; from simple reading of texts towards more complicates structures such as audio visualization of perceptions of content or active participation in lectures, cooperative studying and so on. The range of adopted knowledge is connected with different forms of presentation of educational content of e-learning.

The beginning of distance learning, on the academic level, happened in USA at the end of 19th century when the initiative happened for the education through the correspondent media. Already at the beginning of the 20th century the attention was dragged to the creation of new pedagogical models for correspondent studies, as well as for quality standards for their appliance.

The development of informational technologies enables interactive distance education by using especially designed educational software (courseware). Special progress in the usage of computers for educational purposes was accomplished by introducing new multimedia technologies and this technological and pedagogical revolution in distance education happened with the development of the World Wide Web.

In the beginning, the distance education through Internet, implied simple transfer of teaching material. Online, where it would be available for the course students, classes. With the development of Internet, computer educational software but with the development of new didactic principles and methods which are adjusted to the new teaching environment and respecting the pedagogical and psychological principles of teaching, the education with the Internet gets to the higher level.

The solutions of e-learning [10] which forms in use can be roughly classified in this way:

- E-mail learning;
- Electronic books;
- Streaming media;
- Educational programmes;
- Online courses;
- Web register.

**E-learning** is one of the most famous computer generated communication services. As a useful tool it found its place in the educational programmes. E-courses with the mailing lists represent the simplest way of delivering the educational content to the student. Materials needed for this certain course arrive at the electronic address if needed, daily, weekly or at the certain timetable. Student does not have to check the website of the educational institution. All correspondence is attached to the e-mail.

**Electronic books** are used in the system of electronic learning as one of the possible solutions. E book can be a quide and a complete course. It is possible to combine the graphic, audio and video records. Most often it is in PDF format (Adobe Acrobat), but it can also be exe or some other recognizable format such as html. Dependentely of the software used for the e-book realization there are
options for the research and the protection of e-book form copying or printing. It is also possible to define up to which date you can use the e-book. Digital record (Authenticode Digital Signatures) is used for giving security to the user that the content of the e-book hasn’t been changed since it was signed, that the e-book has kept its original, authentic form.

**Streaming media** represent one of the solutions which makes e-learning more unique and attractive. The using of multimedia technologies (synthesis of audio and visual communication) enables the presentation of educational content in dynamical and explicit way. Monitoring of teaching or practicing live using these media enables the student to monitor the events related to the e-learning without being present. E-learning includes organizing the lectures in the form of web-conference, webcast or webinars. For the presence it is enough to have administratively approved attendance and to be at the scheduled time in the virtual classroom. These technologies enable participation in discussions, interactive work in the real time.

**Educational programmes** have been used for a long time in education. Applied in e-learning they get a new and dynamical shape. The new programmes (smart games) are interesting for users, especially to younger ones. The authors of educational program and simulations try that the teaching and the way of presenting is stimulative. In the 3D form of interactive simulations, fun games and quizzes, very serious teaching contents are shown.

**Online courses (courseware)** are probably the most famous way of e-learning. Many educational institutions have in its offers online course as a solution for the students who are not in the possibility to be present for the classes in school or university classroom. With new conceptions they lead the student through the content in the way which provides improvement. Through numerous workshops they have exercises and they gather necessary knowledge. At the end of the course they take a test in the educational institution. In that way it is enabled for the student to have credits for the passed subjects of the degree if passes all the exams of a university.

**Web logging, blogging** – blog, as every new concept is difficult to be described without being cristalized by itself. It is a web page which we edit ourselves. We can describe a blog as a record of individuals or the interest group. Blogging page which is used in e-learning represents interactive exchange of knowledge, communication between students and interest groups. Some authors explain weblog as a personal publisher on the web as a dead of the community. Visitors of the blog can enter their comments directly on the web page, on certain link or send an email.

All listed solution have their advantages and disadvantages.

**What are the advantages of Internet appliance in education?**

E-learning enables the choice of place, time and lasting individual learning sessions, 24/7. In that way the user chooses his/her time which will be devoted to studying. It enables the approach to the distance users which are not able to travel or the student to participate in the course even if he/she is from another continent. In this way big savings in travelling time are made. The savings are made in money also, the money which is needed for the trip.

Electronic learning facilitates to the big companies the standards; acceptable in time and price frame for the training the big number of employees in short period of time, or in longer period, but dislocated. According to some researches, the complete expense can be lowered from 50 to 70%. The saving of time is evaluated to 35-45%.

Many teachers ask themselves will the disanced students learn the same as the students that are educated in the traditional way in the classroom. Researches that compare remote education and traditional education show that teaching at distance can be equally successful ad the traditional teaching if it is led with certain teaching methods and technologies, and if exists an interaction between students and if there is a connection between teachers and students. Multi,edia didactic materials in digital form secure bigger obviousness, dinamic, and the possibility to individualize in accordance with the students own interests. Intensive development of telecommunication technologies and computer systems, constant connection with internet and learning based on hypermedia systems enabled a qualitative appliance of computer technology in teaching.

Education on Internet became popular, firstly thanks to the great speed of development of informational technology. That is understandable, because Internet has the advantages which classical schools do not have, and it implies primarily the overcoming of certain barriers. Internet enables the choice of place, time and lasting of studying. At the same time it enables the approach to distant users for whom it is expensive to travel, and at the same time can transfer the content to unlimited number of users, which no classical educational institution can.

And if we want to emphasise the main advantage of the Internet as a tool in education it is: interesting way of presenting the content for studying, availability of online content, interaction, flexibility in time and space.

When we talk about main disadvantages of education using the Internet, it is recognizable to isolation of individual because of the lack of live contact, as well as the problems connected with the technology and connection, as well as the problem of insufficient motivation for studying. [11]

Not only does the information communication technology affect the way students may acquire new knowledge, but the fundamental change is in the content the students should learn. It changes the approach to studying, and the realization of research work, and it changes the way in
which student analyze and solve problems inside the area and the discipline they are devoted to. This represents the challenge to the university that it should take care about the selection, and the very way and the path in which informational communication technology can be optimally and effectively used and apply as a tool in accomplishing the high quality level of education and applied arts.

INTERNET AND EDUCATION AS RESOURCES OF THE 21ST CENTURY

We are in a era of intense social changes. Terms that were unknown only a decade ago, have become a part of the everyday use. Intensive changes in information and communication technologies and the parallel growth of the development of this technologies is a label of the 21st century. We just have ,,tackled” the internet age, and there parallel the e-education and the e-busness are coming. With each change in technology there is a transformation in educational pedagogy and the learning paradigms.

Following significant changes in the environment caused by development of science and technology, education, and the whole education system also, have succumbed to the reforms. In this way, the social changes affected the efficiency of education, a network of educational institutions, educational programs, forms and contents of education, and the goals and methods of education. Traditional schools and educational systems are quite inefficient and inflexible, so that educational systems educate the average persons, so that don’t allow them to make progress according to their abilities and quality.

Human need for continuous learning implies overcoming of scientific informations and mastering the means of knowledge, and refers to the realization of essence of meaningful life, developing skills of learning, understanding and detection, dirrection of attention, memory and thinking.

Nowadays, informatics literacy is essential prerequisite for more extensive information literacy. Informatics literacy is defined as the ability of using the computer and computer software. In fact, it is the possession of the knowledge of how to find, evaluate and use the best and the most available informations for solving a problem, and making decision, etc. Of course, sources of the information can be different, but today Internet takes a leading rol.

In brief, information literate person is the one who has learned how to learn, i.e. who knows how to find needed informations and how to use them.

Because of the expansion of technological progress and innovations, there is a need for new measures of educational policy. This can be achieved by changing educational contents, work organization based on technological changes, transferring knowledge into practice. It can be said that this is a new art of living, thinking, change of work and life style. Modern education has to include changed contents of learning and teaching methods. It is necessary that changes of teaching contents and methods occurs in all levels of education, but it is also important that these changes first occure with teaching staff and institutions that educate future teachers.[8] This principle ensures the development of informatics and information literacy with the next generations that will use new trends. For the development of education within the digital world, the cooperation with media professionals and contacts with media industries is needed. For the teachers, the crucial is realization of courses, seminars and workshops, as well as establishing partnership with other educational institutions with including mentors, higher education advanced training, individual consulting and the like.

Modern teaching should provide enabling students for independent learning unlike traditional teaching in which there is only strictly guiding of the students within the process of adopting new knowledge and skills. Once a traditional education enabled the acquiring of ready knowledge. Today, the learning is based on interaction and continual review. That way leads to greater educational success, and reduces costs through a number of available informations through the mass communication.

Learning with multimedia technology brings interaction and provides different views on issues, and as well points on a greater number of informations and its critical consideration. Learning in this way encourages analysis and interpretation of informations in its various forms, a review of existing and new knowledge in the light of new cognition, but also and developing skills in wider and more diversified learning strategies. New ideas are studied, and in that way it is easier to master and adopt them.

Online courses have proved to be a very acceptable way of learning and this principle has quickly spread around the world. They allow learning both at home, and in the office, with adjusting your own rhythm and numerous obligations. There is a great number of offerings in terms of online courses and other projects on distance learning. The trend of improving on line education itself leads towards online learning is becoming more attractive that the traditional learning.

The education program of European Union use this concept as one of the fundamental factors of the EU educational network. Human resource development is one of the foundations of education and training of all citizens for living and working in the society based on knowledge.[12] The answer to the question of how to achieve it, is by using the concept of lifelong learning, which EU has adopted as the main principle in defining all policies in the field of education and training. Lifelong education includes acquiring and innovating all kinds of qualifications, skills and knowledges, from preschool age to the late years of life. All forms of learning are included: through formal system of general and professional education and training, professional training in the workplace, selfintiatively achieving of skills and knowledge during the whole life. Education reforms in
Europe are directed towards a more open and flexible system of education, as well as creating a new model of education and training, which will satisfy different groups of current and future students, as well as incorporate new technological innovations in the process, so it was even easier.

The EU itself with the help of its transversal program KA3- Information and communication technology - ICT, invests more that significant resources into the development of the Internet, information and communication technologies, into the process of education via Internet, as well into the forming new multilingual databases and literature bases which would be available for all those who want to learn, and under the same conditions and in a simple way. This concept of education and learning will represent, in the next decade, a goal to be achieved, and in that way it will contribute to a new dimension of lifelong learning and mastering new skills, in which the Internet will have a leading role.

Modern education should get closer to the today’s informatics age, and that means that the changes should be made in both content and teaching methods. One of the important tasks of education is schooling, not just of informatics, but also information literate professionals prepared for lifelong learning during entire life. Informatics literacy should be developed in all levels of education.

Informatics literacy refers to activities that are intended to prepare entire population for the information society through education on basic computer literacy and raising public awareness of the importance of information society.

CONCLUSION

Within a relatively brief time period, computer technology changed the way of learning and lecturing. This was followed by rapid development of computers, softwares and internet services prices dropping. Using e-learning enables savings in time and money and possibility of the current dispersion of new knowledges in practically unlimited spatial conditions (distant places, other states, other continents).

Using technology to improve learning begins with examining how do people learn, and how they learn more efficiently and effectively. It was established that the use of information technologies increases the learning experience and improve efficiency. Along with that costs of learning are reduced. The traditional concept of training in classroom gradually loses its dominant role which it had recently. Education was, up till now, focused on traditional system of schooling. With the development of e-learning, the focus moves to the intellectual needs of individual user, the student. Digital age will have a significant impact on education and it will radically change the current process of learning and teaching. In many countries initiatives are already taken or are being taken that will mean a revolution in the use of new technologies in schools.

By entering the informaticdal era education got the assignment to coordinate with the needs of modern technological time and modern accomplishments. It should increase man’s adaptibility to the digital era and increase man’s ability that is needed in the changes which brings the technological era. In that way education does not only have a social part, but also a political and economical importance. [2]

The development of a society, group or organization in the future will depend on if it invests enough funds in education and development of its members, which are the biggest values it owns. Realizing the big importance of education, it is clear that it should be the most important investment for the future and development and social environment is the center of constant learning and development. With this in mind, the conclusion is set on its own: the enabling of individual to study more effectively in the era of informational revolution should become the basis of the construction of new society, the society with its ‘knowledge supremacy’ that will be used to overcome differences which have been here through centuries and when united to head to the ‘adventure’ of civilization progress, on the wings of technological innovations.

LITERATURE


Darovitima, Zbornik radova, Visoka škola strukovnih studija za obrazovanje vaspitača „Mihajlo Pupin”, Vršac.


PROLEGOMENA REGARDING CRITICAL MEDIA PEDAGOGY

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Abstract: The report Towards Knowledge Society which was published by UNESCO, reminds about the discrepancy between enormous information and education potentials offered by the Internet and new media, and incapability of schools to creatively use those potentials. A great number of schools offer resistance to every radical technological and educational change. School sluggishness creates a huge gap between school curricula and things which the young people see and learn in a dynamic real world. Media hates education, and vice versa. Redefinition of educational aims must accept reality of new technological and social setting, and especially get directed to the students' needs and values. Being both educational theory and media taste critique, new media pedagogy can contribute to creating a new media culture and improving communication rationality.

Keywords: media, pedagogy, education, values, knowledge society, media culture, communication.

1. ANTINOMY OF MEDIA WORLD

We live in a global media world, surrounded by modern media technologies and overwhelmed by a multitude of media content and messages. The media, from traditional to interactive, from books to Web 2.0, shape our lives, world views and value systems to that extent that we can rightfully, speak about contemporary culture as media culture: “With the emergence of media culture, images, sounds and performances are beginning to participate in creation of everyday content, they dominate our leisure time, shape our political views and social behavior, and offer materials based on which people even shape their identity. Radio, television, film and other products of cultural industries provide models based on which we determine what it means to be male or female, successful or unsuccessful, powerful or weak. Based on the content that our media culture provides us many people form their ideas about class, ethnicity or race, nationality, sexuality, about “us” and “them”. Media culture participates in the formation of dominant understandings about world and highest values; it defines what is considered good or bad, positive or negative, moral or evil. Stories and images in the media showing the symbols, myths, and resources which are, for most people in most parts of the world, now forming general culture. Media culture provides the basis for the creation of an identity, in accordance with which individuals today fit into the modern tech-capitalistic societies. It creates the new forms of global culture.” (Kelner, 2004, 5).

Modern society and modern individuals are faced with the powerful challenge of the media. In the time in which we live media influence not only our perception, but also our understanding of reality, our education, the formation of tastes, lifestyles and value systems. The media inform, entertain, socialize, educate, persuade us. However, the media continuously show its twofold, dual face: humanity has never before had an opportunity to collect, process and transmit such an amount of information and different media content; on the other hand, the richness of information resources and communication technology is often used as a tool of social power, manipulation and domination. As sociologist Dragan Koković rightfully notices, character, role and significance of the mass media can be seen from mutually exclusive, antinomy positions: (Koković, 2007)

1. Media create specific artificial environment and therefore are moving away man from the real world and real problems;
2. Media enables universalization of man and his inclusion in the life of all mankind;
3. Media standardize daily lives, destroying every individuality;
4. Media enrich individuality, because they expand existing relationships and relations between people;
5. Media reduce the volume of direct interpersonal communication;
6. Media extend limited direct contacts, thus increasing universalities and interpersonal communication;
7. Media encourage empty and purposeless use of leisure time;
8. Media enrich leisure time creating conditions for meeting various human needs;
9. The media are inherently manipulative and antidemocratic tools of power and domination;
10. The media are the tools of freedom and democratization of social life.
11. Media encourage passivity of living and laziness in thinking;
12. The media encourage activity, dynamism and participation in social life.

In addition to the mentioned media antinomies we can add those directly related to the field of education. In a book titled *Google University: Education in the (post)information age*, Tara Brabazon in just one sentence accurately determines the key problem of education in the world of media, the Internet and the rapid development of new information and communication technologies: "Clicking replaces thinking". (Brabazon, 2007, 16). New technologies and tools such as Web 2.0 allows anyone to participate in the creation and dissemination of Internet content, but growing quantity of information and different methods of approach does not guarantee the quality and creativity of their use. A possible way to solve this problem Tara Brabazon sees in a combined effort of teachers, educators and librarians to transform Google from fun tool to educational tool, of critical and reflective thinking. Regardless of the global technological and information infrastructure, information society will not be transformed into a knowledge society until every individual is trained to select, organize, transfer and use information in a creative and socially responsible manner. In these processes the critical media education and creative use of the media can have a very positive role, encouraging interactivity, freedom of choice and participation of young people in social processes and changes.

From Gutenberg to the Internet, modern media are fundamentally changing our ideas about the relationship between human and technology, real and virtual, public and private, true and false. These changes are often greeted with hope, but also with fear and suspicion, even with indications of cataclysm caused by IT bomb. Nevertheless, we believe that, despite all the challenges, it is possible to imagine human and emancipatory direction of media revolution: “We do not need to mourn or curse anything. We will not dominate the fate of technology by turning our back. Our responsibility is in understanding its logic, so that we can as better as possible predict its consequences” (Debre, 2000, 252).

2. TECHNOLOGICAL, INSTITUTIONAL AND SEMIOTIC ASPECTS OF MEDIA EFFECTIVENESS

The ubiquity of the media and almost familial relationship with modern humans and media are rarely followed by a critical understanding of media power and influence. Media is approached from the technology rather than the social and cultural context. In practice of communication, or, as Habermas would say, in the communication impact, individuals, societies, and cultures are continually being formed and reproduced. In order for communication to take place, it is necessary to have five basic elements: Message; Sender; Channel (method, means); Recipient and Effect. The communication process can therefore be described as a process that begins when the sender devise a message, code it before sending it through the separate channel to the recipient, and the recipient decode it with a certain effect or result. In the book *The Power of the Media* Francis Bal defines media as a technical means that allow people to communicate and convey thoughts, whatever their form and ultimate goal is.

However, this definition of media is more focused on the technical rather than the social and institutional aspects of the media. Therefore we need a broader definition, which Dennis McPhail gives us. According to his definition, the mass media include: (Lorimer, 1998)

1. Resolvent set of activities to create media content. Commonsense mind imagines that media content are created and transmitted like, for example, water is passed through a particular pipe from point A to point B, where essentially its not changed by the means if its transmission. However the media are not passive carriers, but active producers of meaning and significance. Media by their choice of information and coding of messages actually indicate or construct reality. Reality becomes as such as the media defines it.

2. Specific technological configurations (books, newspapers, films, radio, television, Internet). The media have always actively monitor developments in technology, which depends not only on scientific discoveries of new methods of communication, but also by social and economic factors and interests. Gutenberg’s printed book was the first mass-produced commodity, and

In defining the concept of media, it can be useful to start from the etymological definition. According to the observations of Jacques Gonet from his famous book *Education and the Media*, by the term media the entire concepts which are very different by their essence are sometimes described: "From the Latin medium, “middle”, “center”, (medium diei, “mid-day”), through the meaning of “middleman”, “mediator”, (medium se offert, “is offering to be mediator of peace”, Virgil), we come to the re-discovery of the term by the Anglo-Saxons, who introduced the term “mass media” as a means of mass communication” (Gonet, 1998, 14).

Even though there is no unique definition of media, in each of them as the purpose of the media, the communication is implied. In the broadest sense, communication can be defined as the exchange of meaning between people, taking place within a common social and cultural context. In practice of communication, or, as Habermas would say, in the communication impact, individuals, societies, and cultures are continually being formed and reproduced. In order for communication to take place, it is necessary to have five basic elements: Message; Sender; Channel (method, means); Recipient and Effect. The communication process can therefore be described as a process that begins when the sender devise a message, code it before sending it through the separate channel to the recipient, and the recipient decode it with a certain effect or result. In the book *The Power of the Media* Francis Bal defines media as a technical means that allow people to communicate and convey thoughts, whatever their form and ultimate goal is.

In defining the concept of media, it can be useful to start from the etymological definition. According to the observations of Jacques Gonet from his famous book *Education and the Media*, by the term media the entire concepts which are very different by their essence are sometimes described: "From the Latin medium, “middle”, “center”, (medium diei, “mid-day”), through the meaning of “middleman”, “mediator”, (medium se offert, “is offering to be mediator of peace”, Virgil), we come to the re-discovery of the term by the Anglo-Saxons, who introduced the term “mass media” as a means of mass communication” (Gonet, 1998, 14).
today the market interest is obviously one of the main
drivers of the development of the new media such as
notebook computers, mobile phones, iPhones, iPads and
the like.

3. Formally constituted media institutions (media systems, channels, stations, publications). The mass media are
organizations, structures, industries, companies dedicated
to production of particular media content. Media
institutions can function as a private corporation, owned
by a few shareholders, as well as public property
corporations and state-owned enterprises. When the mass
media operates as a private company, obviously the profit
is its main interest, although there are cases that the
private media pay attention to their social contribution.
When the state owns the media, as was the case in
socialist countries, as is currently the case in developing
countries, the media function as an instrument of power
and are interpreting reality according to state's and party's
interests and ideologies. When the media functions as a
public service, the state is the regulator, but not the
controller of the media, which operates primarily in the
public interest, taking into account minority communities,
children and senior citizens, and the information content
of education, science and culture, and the like.

4. Operations in accordance with established principles,
rules and concepts (professional ethics, audience
interests, social habits and expectations). Almost all
media and media systems operate within specific societies
and as such are subject to formal legal norms and less
formal forms of expectations. Thus, for example, the law
on broadcasting determines the distribution of frequency
at national and local level. On the other hand, there are
a number of norms, rules, and expectations that govern the
behavior of the media, which are based on certain
understandings of society on the potential value of the
media. In the most general sense, the media are expected
to encourage the continuity of social ideals and goals,
integration, motivation and adaptation of citizens in a
democratic society.

5. Assigning specific roles of media (owners, regulators, producers, distributors, advertisers, members of the audience). If we consider the ubiquity of media in the modern world, it is easy to conclude that numerous people are involved in the network of mass media, with different roles, from journalists and owners through the world of business and politics, to audience. The way in which these roles are played and social system as a stage, greatly affect the final output of the media.

6. Transmission of information, entertainment, images and symbols to the mass audience. Contents and images of the world presented by the media have their own objective, explicit or denotive meaning (for example, photos of an event or person), but even more its symbolic or connotative meaning. Through the sum of the meanings of images and symbols that construct and present, the media exercise a powerful influence on the articulation and consolidation of the dominant social ideology.

Modern media, as the most important part of the wider
information and communication system, have a number of
basic and derived social functions (Radojković, Stojković,
2009). Basic functions of social media include:

1. Monitoring of the environment. In the opinion of
Harold Lasswell, journalists explore the environment,
present and interpret the facts they obtain and impart their
findings through the media to the society. Without a
media-mediated information modern man would be lost in
the complexity and the vastness of modern society and
numerous institutions that are forging his fate. The media
provide oversight over the totality of social phenomena
and processes. That way, they have the function of the guard
that warns individuals and society of the potential
risks (natural disasters, crime, economic problems, threats
to peace), but also the function of the host which consists
in the daily care of the proper conduct of public, common
interest affairs.

2. Connecting sections of society and guidance of reactions to the environment. In addition to information
gathering, the media have the task of explaining and
interpreting information, so that members of society could
understand the meaning contained therein. This suggests a
certain public agenda of problems and attention of society
is directed towards solving them.

3. Preserving cultural heritage. This function involves the
transmission of social and cultural heritage from
generation to generation. In addition to the transmission
and interpretation of current information media keeps and
in time transmits the information on the past of a society,
its ups and downs, its values and ideals. Communication
in the dimension of space ensures the functioning of society, while communication in the dimension of time
ensures the continuity of culture. So, for example, each
national library through the medium of books preserves
and transmits the legacy of history, science, art, and
culture of a people, as a kind of collective definition or
mirror the nation and its achievements.

4. Facilitation of trade in goods and services. This feature
is especially important in highly developed consumer
societies. Modern economy is based on the abundance of
goods and services for which prospective buyers found out
primarily through the media. It is impossible to
imagine a functioning of an economy and society with no
advertising in the print and electronic media, including
the influential publicity “consciousness industry”.

5. The function of fun. It is difficult to determine whether
this function is one of the basic or one of the derived
functions of the media, but undeniably the entertainment
from day to day occupies an increasing share of the media
content. In the context of mass culture and consumerism
party, fun receives cardinal role as an escape from reality
and as the transfer of social and personal conflicts in the
safe space of the imagination. Noting that the element of
entertaining helps the placement of news media have even
developed a new form of expression called the
Infotainment (coined from the English words information
and entertainment).
The derived social media features include:
1. **Cognition and learning.** The media offer people plenty of various information and knowledge. The educational function of the media is easily achieved, because there is no coercion that follows this type of learning. Using the media, one gets the insight into the world of ideas and theoretical thinking, but also into very practical knowledge such as how to repair a car or prepare exotic dishes. Cognitive function of the media is especially important for children, because they also acquire a perception about the world, and desirable or undesirable patterns of behavior and living. Therefore we can say that the educational function of the media is not only realized through specialized educational programs and columns, but also virtually through the entire contents of the media.

2. **Leisure and relaxation.** Modern mass media offer numerous and readily available entertainment and relaxation possibilities. Even just browsing through the favorite newspaper or magazine or television channel relaxes and soothes tired man from the speed of life and conflicts at work, in traffic, on the streets. Some good movie, pleasant music or chatting on a social network can be the best cure for boredom and aggression. Compared with other sources of entertainment media are the most accessible and cost-effective form of relaxation.

3. **Inclusion in society.** Media as agents of socialization contribute to connecting of individuals with their peers, friends, family. Media facilitate and concrete human need for belonging and sociability, and their contents offer a chat feature to create and foster interpersonal communication. Even people who are physically separated from others, media allows to make even a virtual touch with loved ones and confirm their membership in a community or a social group. However, just as they can contribute to the socialization, the media can serve as a self-isolation of the individual, avoiding real social contacts, by escaping into the virtual digital world.

4. **The acquisition and development of personal identity.** Media contents contribute an individual to define himself as a unique and unrepeatable person and set themselves and their behavior in relation to other people. The way we play our social role and the way we realize the potentials of our personality is largely dependent on media representations of good and bad, right and wrong. Through mechanisms of identification or review of media figures and meanings individual is clearly positioned in relation to others and responds better to real social situations. However, critics of the media industries warn about the conformist role of media in the process of personal identity development. The media often suppress any individualism, criticism and creativity by “mass creation” of characteristics, values and life styles that suit the interests of capital and prevailing models of social and ideological power.

**3. COMMUNICATION POTENTIAL OF INTERACTIVE MEDIA**

Marshall McLuhan predicted that the development of electronic media will unite the world into one big global village. (McLuhan, 1971). As soon as technologies expand our senses, there is a new translation and revaluation of culture, at the speed at which new technologies are improving and marking the world of reality. McLuhan's prediction is completely realized. Something that happened in any part of the world almost instantly becomes news which can affect all people on the planet.

However, even insightful McLuhan couldn't have foreseen all the speed and depth of the changes brought by the Internet and new communication and media technologies. This is a new phenomenon as digitization, integration of media and interactivity, which call into question the very notion of mass media. The Internet has opened up new perceptual and cognitive features, set different standards for the preparation, transmission and reception of media messages and opened up endless possibilities of communication, especially by the development of Web 2.0. Of course, the Internet has brought new controversies, from the question of whether it is a medium in the full sense of the word, or it is just a virtual space in which all the media are gathered, to the issue of responsibility for the quality and reliability of information on the net.

If we take a look at the historical development of the media, we can see the flow of fully autonomous media, such as books or newspapers, through broadcast media which function with the help of wave frequency and cable connections (eg, radio or television), through communication media like the phone was, to the interactive media that appear in the Age of Internet. Media Communication on the global network has the following characteristics:

1. Multimedia
2. Hypertextuality
3. Lack of “gatekeepers”
4. Elasticity
5. Interactivity

While the traditional mass media use one or two dominant modes of transmission of messages, multimedia includes a combination of text, images, graphics, animation, audio and video recording. Hypertextuality allows the access of media content in any way without the strongly expressed hierarchical structure. The Internet is an open network, in which no one but the computer can specify the route by which the information will be transferred. Under the elasticity we mean the fact that the Internet allows current (live), and variations of delayed broadcast of media content. Finally, the interaction implies the model of interrelated and mutually caused communication, which fundamentally changes the relation between the media and the public. We can really say that with the capabilities of Web 2.0 the mean of media is moving from the mass, undifferentiated audience, to personalized, active user.

First electronic on-line edition of the daily newspaper appeared in the spring of 1992., when the Chicago Tribune became available on the Internet. While the first electronic newspaper were satisfied with the digital copy of the paper edition, soon appeared much more independent and creative websites with the performance
advantages of the net: interactivity, hypertextuality, openness to other digital sources of information.

Continuous updating of news websites and interaction with readers in real time allows personalization of the media to the extent that they become a product of collaborative effort between the producers and the audience. Personalized and interactive multimedia communications is changing the very essence of the mass media: “Compared to the traditional, cyber journalism - as science fiction fans like to call it - leads role of Gatekeeper to an extreme extension: The network is a huge supermarket of information, where the collection of news often resembles a collage making and hypertext linking of different websites of news agencies, television, private companies and public administration, with very limited space left for writing and for individual creativity. There's a risk that the Internet will become a place of post-journalism, trapped within itself, where an encounter with reality remains in the background and always taking place with someones mediation.

Another great innovation of journalism on the Net is the interactivity: news personalization process develops two-way channels of information between journalists and readers. Thus occurs a possible cure for social opacity created by the overabundance of news leads, leaving the wider freedom of choice for consumers, and a waiver of journalism with its own historical role of guide and orientation. Newspapers are taking a risk to adapt to the formula of supermarkets, arranging richer windows but avoiding possibilities of choice.” (Gocin, 2001, page 420).

Digitization of media messages and the integration of modern forms of communication, through the synergy of mobile phones, digital cameras, television, computers and the Internet are breaking down the traditional media system and allow the emergence of so-called citizen journalism. It is about a trend that the media content, rather than professionals, is generated by the technological amateurs who are present at the site of an important event. Even the traditional, institutional media, such as the BBC, have realized the potential of a new kind of journalism, encouraging users to send their editorial photographs and video clips on its website, with the message: Important things can happen anywhere, anytime - we want you to be our eyes:

4. THE GOALS AND OUTCOMES OF MEDIA EDUCATION

According to accurate and insightful observation of Svetlana Bezdanov Gostimir, analysis of our media and educational reality it can easily be concluded that the media cannot stand education, and education can't stand the media. On the one hand, to the pragmatic nature of our media, based on sensationalism, spectacular and attraction, noncommercial educational and school programs and facilities are completely foreign. On the other hand, recent empirical studies show that our teachers are insufficiently media literate and media competent, even the worse students not only showed more interest, but more skills and knowledge of contemporary computer games, social networking, television, film and new media. (Bezdanov, 2008, 177).

UNESCO reports from 2005., entitled Towards a Knowledge Society pointed out the discrepancy between the enormous information and educational potential of the Internet and new media, and the inability of school to creatively exploit these potentials. Numerous schools are resisting technological, media and educational changes. Thus creating a huge gap between the school curriculum and what young people see and learn in the real world. Redefining of educational goals must be based on new technology and social models and the values and needs of young people. As a theory of education and media criticism of taste new media pedagogy can contribute to the creation of new media culture and development of communication rationality.

World experience shows that in school curricula at all levels of education in developed countries, systematic attention is paid to media education for the past thirty years. Basing on the recommendations of UNESCO and the Declaration on Media Education published in 1982., media education programs defined the specific objectives, outcomes and areas of knowledge and understanding:

1. The objectives of media education
- Understanding and adoption of media communication as an integral part of the general culture of modern man,
- Introduction of informative, educational and entertaining function of media of mass communication,
- The acquisition of fundamental knowledge about the origin, development, language expression and aesthetics of media,
- Training for selective and critical reception, assessment and adoption of media messages through an analytical approach and creative expression in the media,
- The acquisition of knowledge and skills to store media content in personal system of values and world view.

2. The outcomes of media education
- Selective and critical use of media production,
- The cultivation of taste and refinement of a global audience,
- The exercise of artistic communication in the area of mass culture.

3. Areas of knowledge and understanding of media practice
- Who communicate and why – media producers,
- What kinds of messages exist – the media category,
- How to produce messages – media technology,
- How do we know the meaning of messages – media languages,
- Who are the recipients of the message – the media audience,
- How the media content is styled – media aesthetics.
5. ASSUMPTIONS FOR THE CONSTRUCTION OF CRITICAL MEDIA PEDAGOGY

By the nature of its social mission, education is always some kind of intercession (mediation) between man and the world, between truth and reality, between being and thinking. That is why the whole school and the education system necessarily has a medial or intermediate dimension. In an effort to reach some set ideal or form of knowledge, attitudes and values, the school has always appeared as a mediator between the individual and the community, desires and possibilities, freedoms and norms. And not only education, but also all other spheres of life, depend on middlemen and the rules they establish. Human knowledge and overall results of the cognitive processes are largely determined by media or intermediaries who are placed between the subject and object of knowledge. McLuhan's *The medium is the message* maxim applies not only to the world of journalists, but also for the world of scientists. Thus, for example, is quite clear that anyone who looks at a drop of water through a microscope will get a completely different message from someone who explores the same drop by observing it with the naked eye. The matter is further complicated when we know that in mediation system in addition to the technological configuration participate numerous social and institutional factors as holders of power, influence and manipulation. In the famous *Media Manifesto* French media critic Régis Debra rightly points out: “The mediator creates law. Mediation determines the nature of the message, the relationship takes precedence over being. In other words, bodies think, not the mind. Coercion of incorporation products corporation – that intermediaries bodies and institutions of knowledge, standardized and normative, which we call schools, churches, parties, associations, societies of thinkers etc.” Therefore, critical pedagogy of media must be established on the solid communicational, social, and philosophical foundations and knowledge of ontological, epistemological and evaluative dimensions of each media mediation.

The primary purpose and mission of critical media pedagogy would be to enable pupils, students and all citizens to understand contemporary culture and society, to create their own identity and resistance to media manipulation, and encourage media to create alternative and creative forms of culture to transform the modern mediated and alienated society: “Critical media pedagogy develops concepts and analyzes that allow readers to critically analyze the content of contemporary media and consumer culture, discover the meaning and effects of their own culture and therefore help them to gain control over their own cultural environment. I believe that criticism of culture and media pedagogy require the application of social theory and that this, critical theory of society should also be based on the media and cultural studies as a critical methods that would provide substantial insight into the structure of contemporary social life. Thus, this project combines methodological strategies, theories and concepts, both modernist and postmodernist theory, attempting to create a critical perspective convenient to analyze the most important cultural and social phenomenon of our time”. (Kellner, 2004, 20)

Pedagogy is faced with the phenomenon of media, not only in the aforementioned critical and Communication-philosophical, but also the everyday, methodological and technical level. We will show this in the example of a famous German media educator Gerhard Tulodziecki. (Tulodziecki, 2000) Lets suppose then that the teacher plans to transfer and explain the meaning of content of the concept “park” to his students. He can do so by making the children go to a real park near the school; he can also process the content of the concept of park through the model of park with trees in the sand box; furthermore, the teacher can show the kids a movie or series of slides of the park; and finally, he has the ability to verbally explain to students the concept of the park. Based on this example, it is possible in principle to distinguish at least four forms of presentation of the content:

- Realistic form, found on active participation in the reality, personal encounters with people or with the practical relationships with things.
- Shape of the model, which is present in the use of models to simulate reality or in role-playing.
- Form of mapping, when information and knowledge are obtained through display that is faithful to reality, or is given as a schematic diagram.
- Symbolic form, which consists in obtaining the information through written or oral verbal presentation.

In the broadest sense, any form that represents some content may be labeled as a *medium*, and on the basis of such a determination can be concluded that all teaching and educational practices and processes include a medial component. This component has an important role for children and young people to develop the idea about the reality. Obviously, most forms of presentation of some educational content represents a reduction or an interpretation in relation to the real world. Cognition through models, schematic diagram or verbal symbols can lead students to inadequate or erroneous ideas about life and the world. Hence, the theory of learning is emphasizes that teaching processes and models should be, as much as possible, based on real situations and real life problem solving. Of course, this is not always possible and not always necessary. On the one hand, there are scientific discipline that are, by their nature more oriented to the world of symbols and abstract concepts. On the other hand, there are numerous situations in which students have already had direct experience of some parts of reality, and therefore may well learn and gain knowledge from the model, schematic representations or symbolic forms of presenting educational contents. These considerations lead us to two important epistemological and pedagogical questions:

- What are the media, apropos, what forms of presenting content to students are the most appropriate for development of appropriate ideas and cognition on sections of reality that is processed?
-How to confront a possible danger of the media creating inadequate or misleading impression of reality?

The answer to the first question constitutes a discipline called *media didactics*. The goal of media didactics is to establish the best ways of using the media to encourage and support the learning process. Media-didactic research were primarily implemented in the form of comparative study of the effects of different media on the efficiency of learning. The question of where in the teaching process is the medium most appropriate led to the development of a taxonomy of media. Taxonomy includes classification systems in which the media were classified according to some of its characteristics or traits. Such characteristics may be the way of media perception (visual, audio-audio-visual); form of encoding media messages (graphical, schematic, symbolic); fitness for a particular function in the classroom (attention, reasoning, etc).

The answer to the second question is explored by the field of *media education*. In this discipline the media themselves with their educational potentials and dangers become the subject of the teaching or educational thinking and questioning. Media education acquires special importance in the time of rapid development and impact of primarily television, and later the Internet, as a medium that not only shape the world of education, but also a whole way of living and thinking. As in the context of media education, the media themselves are becoming the object of pedagogical research, so for this area generally all theories and results of general theories of media are interesting. These theories are often classified according to the elemental model of communication (emitter, the message, the receiver). Thus, we can distinguish between research of broadcasters (eg studies on the institutional conditions of media production), research of posts (eg, media content analysis) and research of recipients, aka receivers (eg studies on the impact of media on audiences, in everyday life, on the values and behavior of children and youth).

Didactics of media and media education are not separate sciences, but its about the fields in interaction. Taken together, these two disciplines are *media pedagogy*. As we will later see, in the literature the concept of media and media pedagogy term are used in many meanings, but aforementioned definitions can be simple and clear direction for further research. (Moser, 2000)

Media Didactics has a relatively long tradition. Teachers and counselors have always explored forms of presentation of educational content that would be the most appropriate for learning. However, this theme has remained within the frames of teaching methodology. Independent media didactics occurs with the development of electronic mass media, when in addition to the intention, subject matter and methods as a structural moment of teaching the problem of choosing the appropriate media is defined.

Media didactics has gone through several phases of development. The first phase is related to the use of illustrations, paintings, photographs, slides and film in the classroom. As mentioned media can be characterized as aids or aids for teaching, this phase can be characterized as a concept of means for teaching.

However, in the 1820th The Pestalozzi said that teaching materials can acquire a new quality when used as an active work assets in the hands of students, because it encourages students' creativity and spontaneity. In the early 20th century, this methodology has been widely accepted as part of reform of pedagogy, and appropriate theory of use of media in the classroom can be called the concept of means of work.

With the development of more complex media such as film, radio and television, the place of the technical media in education has changed. Instructional films, educational radio and television programs have their own time and the didactic structure that can spontaneously adapt to the teaching and learning processes. This kind of teaching contents is used as enrichment or as an integrated part of teaching and learning, and in both cases it is about the concept of the media as a teaching material.

Furthermore, there is a fourth way to use the media as a didactic means that in theory could be described as the system concept. Its characteristic is that the teaching is pre-planned by a team of experts, and for each phase of teaching and learning the most appropriate medium is prepared. Thus, for the processing of a topic as an introduction telecast can be used, for information processing books, etc. As problems with this concept is the lack of personal interaction, externally defining of the objectives of teaching and the like.

Criticism of the concept of the system, as well as further development of communication and information technology, the Internet and multimedia, has led to a new perspective on the role of media in the classroom, which can be called the concept of the learning environment. In contrast to previous concepts, learning is now not seen as a process of transferring the finished system of knowledge, skills or abilities to the student. Learning is seen as a process of active students encounter with their environment for learning in a participatory model of understanding contemporary society and culture.

After a review of basic concepts of media didactics, Gerhard Tulodziecki gives an overview of the most important stages in the development of media education, combining historical and systematic approach to the discipline. (Tulodziecki, 2000). Initially, media and educational thinking were under impression of the spread of news and films achievements that have seemed aesthetic and morally questionable for the educators, such as trash literature or numinal film spectacles. From this concern has developed a concept that can be called protective and patronizing media education, with the goal to keep this kind of media away from children and youth, and to awaken in them the sense and sensibility for quality print and film work.

However, patronizing approach to media education had two drawbacks. First, the ubiquity of electronic media, especially television made easy and virtually free access
to diverse media offer. Second, this concept treated the media recipients as unprotected and dependent. It was therefore more appropriate concept of aesthetically and culturally oriented media education aimed at the formation of educated and cultural recipient, capable to independently judge the quality of media messages.

From the social and political perspective it seemed most appropriate to pursue an independent and critically oriented recipient, who will be able to see through media manipulation and to use the media offer as informed and competent citizens and holders of democratic public and political culture. This approach can be called functional-systemic media upbringing.

A major drawback of these aforementioned concepts was that the responsibility for the quality of the media offer was attributed only to the individual recipient. From the theoretical horizon social conditions of media production, distribution and reception of media messages and content were lacking. Representatives of critical-emancipatory concepts of media education pointed out the necessity of studies on aforementioned concepts. They demanded to train individuals not only to understand the social, economic and political conditions and assumptions of the media situation, but also for the realization of their own public media production as a counterweight to the dominant manipulative media discourse.

Finally, probably the most important emancipation potential has the concept of media education-oriented towards the interaction and action. It is about training children and youth to take an active and creative use of modern media in their own work and life context, according to their needs and in a socially responsible manner. This approach incorporates both critical reception of existing supply of media and their own media production. As a general objective of media-pedagogical attempts Gerhard Tulodziecki states training for appropriate, independent, creatively and socially responsible action in a world in which strong influence of the media governments. This objective includes several tasks in a media-pedagogical work.

The first goal is a meaningful use of the existing supply of media for different purposes, such as information, entertainment, play, learning, problem solving and communication. Doing so a great responsibility lies on both parents' home and school. A special opportunity to use the media in school provides the projects oriented classes.

The second task of the pedagogy of media is to create their own media contributions. Children and young people should be able to create their own media messages and contents with help of media technologies. For this purpose, they must know at least three areas: media language, media influence, and media production and dissemination of media messages.

The third task involves understanding and evaluation of media forms, as a precondition for creating, understanding and evaluating media messages and content. It is very important that children and young people can evaluate advantages and limitations of the media research in terms of forms of displaying expression or ways of formatting the message.

The fourth task involves creating opportunities for children and young people to understand the emotional effect of the media or their impact on the attitudes, values, and behavior. The importance of this task arises from the fact that the media is able to create problematic emotions such as fear or aggression, as well as a distorted ideas of reality and other individuals and social groups.

The fifth task is the ability to understand and judge the conditions of media production and dissemination of media messages. It includes a critical analysis of personal and institutional, legal, economic, political and other social conditions of media production and distribution. The assumption for this analysis is the fundamental transparency and opacity of the media scene as a characteristic of a democratic society.

Finally, the sixth and the overall task is to develop the intellectual, social and moral approach and attitude towards the media. The more developed the mentioned positions are, the greater is the chance of avoiding dangerous media influence, responsible use of media content and shaping of life in the world of media, information and communication.

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THE USE OF POWERPOINT IN HIGHER EDUCATION – ADVANTAGES AND DISADVANTAGES

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Summary: Keeping in mind the contemporary technical-technological and communication trends, today’s students are on a daily basis, exposed to a large number of information trough various channels of communication. This fact has led teachers to „modernize“ their approach of teaching, because it is a greater challenge to offer students material in an interesting, receptive and understandable way, and without departing from the academic demands. As the use of PowerPoint software (Microsoft, 1997), now already as dominant instructional tool, is present in almost all levels of education, the question arises: which are benefits, and which are disadvantages of this technology. Although at first glance it seems that the use of multimedia presentation can be use only for the purpose of better quality of teaching process, results of studies in this field are not quite agreed. Beside studies that are indicating the gain in teaching conceptualized through PowerPoint presentations, there are also evidences that suggests that the use of computer technologies reduces academic performance of students. Also, there is a significant number of studies which, although they don’t indicate the harmful effects of the use of PowerPoint as a didactic means, do not indicate to specific advantages in quality nor quantity of learned material, also. Goal of this paper is systematic review of previous findings that partly provide an answer to the question of the purpose of the use of PowerPoint in teaching, attitudes of the „audience“ for which is intended with recommendation how to use potential of this software in the best way.

Keywords: PowerPoint, teaching, review of previous researches.

1. INTRODUCTION

Teachers are continually searching for more efficient format of teaching so they could increase students’ engagement during learning process, and consequently improve the final results of teaching (Krippel, McKee, & Moody, 2010). The idea of introducing multimedia support to the teaching derives from The theory of communication through more channels, which suggests that when the same information is presented through more than one channel, that results in reinforcing the information, better retention and improved learning (Daniels, 1999; Ellis, 2004).

Although the PowerPoint is considered to be „weak“ representative of multimedia, researchers in the field of using the PowerPoint in education this tool classifies in multimedia group because of the possibility of simultaneous use of text, images and sound.

PowerPoint, after its’ release, now 15 years ago (Microsoft, 1997), quickly became popular software widely used for presenting ideas and materials, both in business and in the educational context (Szabo & Hastings, 2000, Craig & Amernic, 2006). According to the findings in 2009, (Savoy, Proctor, & Salvendy, 2009), it is estimated that is daily used in over 30 milion presentations, and that this computer program is instaled on 250 milion computers worldwide. Prevalence of the software itself, was enough of a trigger for a whole pleiad of researches and analysis of the specific impact of the PowerPoint on outcomes of the educational process by computer’s support.

Since introduction of PowerPoint in education system, the debate is open how much is teaching approach followed by presentations useful for the students (Creed, 1997). As the main benefit of using PowerPoint in teaching the finding is alleged that in that way relatively clear structure of lectures is provided (Susskind, 2005). Studies indicate that the organized structure of the lecture is related with more efficient understanding of the material by the students (Miller & McCown, 1986) and their retention of material (Garner, 1992). Furthermore, there are findings that speak in favor of positive correlation of organized exposure of lecturers, quantity of learned material (Pittman, 1985) and cognitive development of students (Pascarella, Edson, Nora, Hegerdorn & Braaxton, 1996). Another advantage of lectures followed by multimedia presentations is more efficient time management (Daniels, 1999; Mantei, 2000). Writing on the board or changing transparency film are certainly time-demanding form of lectures with many pauses, which can harm general impression of the lecture. Computer technology has become an integrated element in the university practice. Some lecturers have enthusiastically embraces the technical innovation in teaching, while others resisted the
trend (Craig and Amernic, 2006). Preparing PowerPoint presentations probably occupies more time of the lecturer in the beginning, but as teachers often use the same slides through multiple iterations of the same course, it is cost-effective in the long term.

2. THE ATTITUDE OF STUDENTS TOWARD USE OF POWERPOINT IN TEACHING

When it comes to students' attitudes about the "confronting" traditional teaching versus teaching conceptualized through multimedia presentations, most studies suggest a preference of computer-supported teaching (West, 1997; Cassady, 1998; Perry & Perry, 1998; Susskind & Gurien, 1999). In most cases, students think that PowerPoint presentations make learning easier (Atkins-Sayre, Hopkins, Mohundro, & Sayre, 1998; Szabo & Hastings, 2000; Mantei, 2000; Beets & Lobinger, 2001; Rankin & Hoaas, 2001; Apperson, Laws, & Scepansky, 2006).

Findings of a large number of studies (Atkins-Sayre et al., 1998; Daniels, 1999; Nowaczyk, Santos, & Patton, 1998; Harknet & Cobane, 1999; Lowry, 1999; Mantei, 2000; Szabo & Hastings, 2000; Frey & Birnbaum, 2002) point out that teaching with computer presentations is perceived as more interesting than the traditional teaching. Students' attitude is that teaching with multimedia support makes it easier to understand the material (Nowaczyk et al., 1998; Kask, 2000, Mantei, 2000) and to take notes faster. Findings of Apperson and his co-workers (Apperson, Laws, & Scepansky, 2008) suggest that although the use of PowerPoint did not produce significant effects expressed through the increase of students' final grades, the "audience" however considers that in this way lectures are more structured, more interesting and clearer than the lectures of the professors who do not practice computer support in their teaching. Students, also, rated better the professors who used multimedia instructional tools regardless of the activities that professors, who do not teach using this kind of presentation, practiced (providing feedback on time, giving impetus to the development of critical opinion etc.). Mentioned authors found that the impact of PowerPoint on outcomes of teaching is positive, regardless of the evaluation of the teaching process through the grades, just by that students are expressing more affective attitude toward this form of teaching, and thus to their education generally.

3. INFLUENCE OF THE USE OF POWERPOINT ON ACADEMIC PERFORMANCE OF THE STUDENTS

As for academic performances of the students, findings are not equally consistent as when it comes to attitudes of students towards mentioned software. In some cases, it appears that the use of PowerPoint has no effect on students’ performances (Rankin and Hoaas, 2001). The opposite findings are present in researches by other authors (ChanLin, 1998, Lowry, 1999; Szabo & Hastings, 2002, Susskind, 2005) and they suggest that the use of multimedia slides increases performances of students. A third group of authors (Bartlett, Cheng, & Strough, 2000; Sosin, Blecha, Agarwal, Bartlett, and Daniel, 2007) points out even the negative effects of teaching conceptualized through PowerPoint presentations. Certain disagreement can be noticed in different methodological drafts, so the question of influence of multimedia teaching on improving performances of the students still remains open. A step furher in reasearching the influence of the PowerPoint software and effects of its use on outcome of the education was made by the researchers Szabo and Hastings (Szabo & Hastings, 2000). They, by making complexed methodological research draft, compared with each other three groups or students: the first group was taught with transparencies, the second was offered with multimedia presentations, and the third with presentations received notes also. Their results indicate on poor performance of students taught through the use of transparencies. The main grip for this conducted study is the different material that is presented through various media, and thus it remains unclear whwt the difference in the performance can be attributed to the format of teaching or to the materials. The same authors, in the sequel of their studies, complemented previous draft by showing a equable material in the form of traditional teaching versus PowerPoint presentations. Using the described research draft, they found that the format of lecture did not affected the performances of the students.

4. INFLUENCE OF POWERPOINT ON SELF-EFFICACY OF STUDENTS

Especially attractive finding is that students find lectures conducted with PowerPoint presentations increasing their self-efficacy (Kask, 2000, Frey & Birnbaum, 2002). Potential influence on students’ self-efficacy may be due to the perception of multimedia lectures like more structured, and that the use of these didactic tools help highlight key elements.

5. REVIEW OF PREVIOUS RESEARCHES OF POWERPOINT IN TEACHING

In general, it seems that there is the dichotomy between supporters and opponents of PowerPoint. Proponents of lectures through PowerPoint slides are finding support in the findings that suggests that students consider that their PowerPoint lectures are usefull and that they prefer that method over traditional approach (Szabo & Hastings, 2000); than in preference of computer presentation compared to transparencies and writing on the board (Bartsch & Cobern, 2002; Frey & Birnbaum, 2002) and in showing positive attitudes towards presentations and their perception of higher self-efficacy (Susskind, 2003). Opponents of this approach (Craig & Amernic; 2006) estimate that the mentioned researches are missing validity and that supporters of PowerPoint are invoking on "wide prevalence with unsritical acceptance“ (p.149).

In the literature, a large number of researches on influences of multimedia support to teaching to academic achievement of students is present, and in them were not used identical methodological drafts. This makes it almost impossible to make a comparasion of studies, and their
findings and offer a clearer answer to the question of the usefulness, and the potential harmful effects of computer-supported teaching.

For the purposes of this study, it seems most appropriate to show the most prominent researches, their methodological approach and findings in table (Table 1). From a review of the researches so far listed, there is a need for a certain systematization based on used research drafts. Daniels, Kane and Rosario (Daniels, Kane, & Rosario 2007) propose the following division:

1. Within one course, the same professor teaches a number of classes in traditional way and a certain number using the PowerPoint presentations;
2. The same course, two groups of students, the same professor with at least one semestar pause; in first semester the teaching is followed by the presentations, and in second the presentations are not used;
3. The same course, the same professor, two groups of students within one semestar; one group listens teaching followed by presentations, and the other group is taught without slides;
4. Data is collected through various courses of different teachers within an indefinite period of time, and with using different pedagogical techniques, including PowerPoint presentations;

Each of these approaches has certain advantages, but at the same time, disadvantages are present and they can be minimized only by combined drafts. The advantage of the first approach is simplicity, in this case the same for both manipulation of the material. The disadvantage is inequality of material – students’ grades after both teaching formats are based on knowing different materials for which we cannot claim with certainty that they are the same weight. When you use the draft so that one course is followed by PowerPoint slides, and second time not, we can examine influence of format on the same material, but in that case remains the question of time flow and possible discrepancy between highlighting of certain elements due to the use of various forms of teaching.

The third approach partially overcomes disadvantages of the previous two, because it enables comparison in the same time period of groups of students with a balanced material weight. The fourth approach can be primarily used for analysis and systematization of existing pedagogical techniques, but based on this approach it is hard to draw conclusion of most efficient teaching format expressed through academic performances of the students.

Researches in this field can be systematized on the basis of used draft which usually corresponds to one of four listed options. When draft was used in which the same professor changes the format, several researches are usually mentioned. Susskind (Susskind, 2005), during the same semestar, conducted one part of the lecture in traditional way, while the second part was performed with using multimedia presentations. Using the final grades as an indicator of efficiency did not register a significant positive effect in the use of computer-supported teaching. Szabo i Hastings (Szabo & Hastings, 2000) conducted a study where lectures are offered with and without PowerPoint presentations within the same course. In one group students were taught with presentations during the first week, and without them during the second week, while the other group had lectures in reverse order, at first with, and after without multimedia presentations. After completing each of the weeks, students took a simulation test. Both groups of students achieved better results after first week of lectures, regardless of the format of teaching that is used. Bearing in mind that the different material was presented to the same group, the question raises whether the very nature of the material affects the results.

When it comes to research without computer support in one semestar, and with introduction of presentations in the next semestar, results are mutually exclusive. In fact, a number of researches indicates there is no effect of teaching with PowerPoint slides on improving performances of the students (Ahmed, 1998; Daniels 1999; Szabo and Hastings, 2000), while results of other studies (Wilmoth & Wybraniec, 1998; Lowry, 1999; Mantei, 2000) indicate a positive effect of multimedia support to the teaching, which was measured by final grades of students. One of the studies (Kask, 2000) indicates the positive effect of the use of multimedia presentations only with female students. Of course, as we already mentioned, the differences between results may also reflect different methodologies and different control variables.

Ahmed (Ahmed, 1998) first held a education using transparencies, and later in the semestar held the same education followed by multimedia presentations with another group of students. In both cases, by knowledge check in form of test, the results are obtained, which indicate that there is no difference expressed in students’ grades depending on the format of teaching.
Daniels (Daniels, 1999) checked, through two courses, effects on performance of students, with and without PowerPoint presentations. Neither in this study signifcant differences in students’s performances depending of teaching format are not registred.

Szabo i Hastings (2000) conducted a study with two groups of students of the same course. During the first semester, four lectures were held in traditional, ex cathedra way, and in the next semestser four lectures were followed by Powerpoint presentations. By comparing average grades from knowlege tests, the significant differences between these two groups of students were registred.

Unlike previous researches, there are findings that suggest that there is a benefit of use of PowerPoint in teaching. Lawry (Lawry, 1999) held lectures for one year using transparenties, and the next two years using multimedia presentations. Higher average grades were registred in both courses in which computer support to teaching was present.
Mantei (2000), in the same way as Lawry, tested hypothesis of usefulness of PowerPoint slides in teaching. His findings also indicate increasing grades with students who attended classes with multimedia presentations.

Wilmoth and Wybraniec (Wilmoth and Wybraniec, 1998) conducted a study where the first three lectures were held without multimedia support, and the next three were supported by the PowerPoint presentations.

Their findings indicate a significant higher grades with students who were taught with PowerPoint, and lower variability of grades. Also, their findings indicate a small number of extreme values in part of the continuum with lower grades.

Kask (2000) in her research showed positive effect of PowerPoint in teaching only with female population of students. She varied teaching format during four years within fourteen groups. The main methodological objection to her research was unequal number of groups of students taught with and without PowerPoint presentations.

When it comes to researches of influence of multimedia presentations conducted during the same semester, in literature the most mentioned is the study of Rankin and Hoaas (Rankin and Hoaas, 1999). They taught two groups of students with the help of presentations, and two without during the same semester. Their findings are based on results of the knowledge tests (ACT: American College Test), sex, prior knowledge from area of the course, and time of holding classes, do not indicate a significant differences between these groups of students.

One of the most cited researches is study of Susskind (Susskind, 2003). The mentioned research examines effects of noninteractive computer-supported teaching on performances of students, self-efficacy, their motivation and attitudes towards the software. Students of Introduction to psychology attended half lectures with presentations, and half in traditional way. The order of teaching formats was controlled. Lecture format had no effect on performances of students, but students reported feeling of higher self-efficacy. Mentioned authors point out that the students were more motivated for working in lectures followed by the PowerPoint slides. In the group which the teaching began with presentations, students’ motivation declined by introducing the traditional approach, but in the group in which after traditional teaching multimedia support was introduced, there was no increase in the level of motivation. Although the content of the material was controlled in both groups, it is quite possible that the effect of motivation can be attributed to the period of the semester, i.e. That the students were more motivated to work at the beginning of the school year.

In researching the influence of the PowerPoint on outcomes of teaching process comparative studies which compare different outcomes in teaching by different teachers were used. One of the often mentioned studies was conducted by the Sosin and his co-workers (Sosin, Blecha, Agarwal, Bartlett, & Daniel, 2007). They examined the influence of multimedia support to the teaching in different institutions and with 30 different teachers within the course of microeconomics. Their findings point that the use of PowerPoint during teaching within this courses reduces performances of the students measured by knowledge test from the field of economics (Test for Understanding College Economics). It is quite clear that despite a large sample, a certain percentage of variance certainly belongs to the personality of the lecturer, and institution in which the researches was conducted also.

When it comes to the relation of the trait of the personality and preferences of the multimedia support to teaching, the number of studies conducted is very small. Ott, Mann i Moores (Ott, Mann, & Moores, 1999) suggest that Introverts mostly prefer this method of teaching, while Extraverts prefer classic lectures.

6. CONTENT ASPECTS OF POWERPOINT PRESENTATIONS

Responsibility that lies ahead the lecturers probably encouraged a large number of studies, but it still remains unclear what the influence of PowerPoint in teaching process is. Bearing in mind positive attitudes of the “audience”, it seems that this is a justification for further use of this software. For this reason, a number of authors skips dichotomy as to whether to continue with use of multimedia slides in teaching, but they are focused on content of presentations itself.

Bearing in mind positive aspect that suggests a large number of researches (Harknett & Cobane, 1997; Atkins-Sayre, Hopkins, Mihundra, & Sayre, 1998; Nowackzyk, Sans, & Patton, 1998; Daniels, 1999; Lowry, 1999; Kask, 2000; Mantei, 2000; Szabo & Hastings, 2000; Frey & Birnbaum, 2002) it seems that the next focus of research of multimedia support to teaching should be directed towards improvement of technical and content aspects of presentation and in the purpose of receptivity and more efficient outcome of education. The drafts of relevant researches does not mention the content itself and complexity of presentations that have been used. Most likely different effects do not result from the use of simple presentations that are made only of text on the screen and presentations that visually have complicated content with tables, pictures, graphs, video clips, or followed by sound effects. Efficiency of PowerPoint as teaching and didactic tool may depend on complexity of the content. A few researchers suggest that irrelevant sounds (Moreno & Mayer, 2000), interesting text, but not related to the topic (Schraw, 1998) and pictures not related to the text (Mayer, 2001) may reduce understanding of the material. One possible explanation of this phenomenon is that it is rather difficult for the audience to monitor the slides with several forms of material such as text, image and sound elements. Researchers in this field have noted that when the text is presented with a chart the does not correspond to the claims, the audience looks confused. Reiber (Reiber, 1996) supports this idea. He found that the pictures not related to the text represent distraction and lead to interference of materials. The results also indicate that pictures related to the material are neither useful nor
The presented results support Mayer’s (Mayer, 2001) cognitive theory of multimedia learning. In fact, according to this model, while they are learning, people „set“ relevant words in auditive part of working memory, and relevant pictures in visual part of working memory. Then the incoming information organize separately in auditive and visual memory and finally integrate with previous knowledge. Mentioned studies indicate the following situation: relevant picture did not contribute to learning because it „added“ a new information through the same cognitive channel. Namely, the text has already been processed through the visual input. The effect of the image would be expected in the case of the presentation of the information only through without the support in writing. From the experiences of the authors of this study, the use of images appears useful as additional information to the material that does not exist in PowerPoint slides, but are only presented orally by the lecturer.

When choosing to use PowerPoint presentations in teaching we should bear in mind the nature of material lectured. In fact, slides show that for abstract and theoretically oriented material use of multimedia support can be very efficient (Butler & Mautz, 1996; Burke, James, & Ahmadi, 2009). On the other hand, the contents which include active problem solving, this form of support to the teaching has not proven useful (Butler & Mautz, 1996).

The most common recommendation for creating presentation are reflected in the selection of proper font, letter size and appropriate images (Rickman & Grudzincki, 2000). Holzl (Holzl, 1997) suggests the use of font size 32 for the header and the font size 24 for the text for the classrooms with fewer then 50 seats. For classrooms with 50 to 200 seats, Holzl proposes relation 36 and 28 for header and the rest of the text. From the fonts, mentioned author recommends sans serif fonts, such as Arial, because of its’ unformed thickness of the lines makes reading easier. Holzl suggests that in the same presentation should not be presented more than two different fonts and that only when one is used for the title, and other for the remaining text. Font size should correspond grammatical structure, so the use of only uppercase letters is not recommended. Colors, animations and sound effects should be used „sparingly“ and only for the purpose of additional explication of text material (Gotsick & Gotsick, 1996). Colors can be a useful tool for the organization of thematic units within the presentation or for highlighting of a particular text, color just keywords, not the complete sentences. The most common recommendation is to use a dark background with light colored text (Seaman, 1998). The background color and the font color should be identical for entire presentation. Holzl also suggests that teachers should create simple presentations with less text. When it comes to animation, it seems useful the effect of entering text line by line, whether that is time-programmed or by pressing the taster by the teacher.

7. CRITICISM OF POWERPOINT AS A TEACHING TOOL

Number of criticisms of the use of multimedia tools for education of students, primarily, has drastically increased the last 10 years. Tufted (2003) thinks that the use of this software leads it over-simplification of ideas and to exclusive linear thinking of both lecturers and the audience. In favor of mentioned criticism, there are also findings that the use of PowerPoint does not contribute to improving of academic performances of the students and to understanding the material (Cyphert, 2004; Kunkel, 2004). Findings of the same researches suggests that PowerPoint „stifles“ creativity of teachers and leads to poor student’s engagement. Neal (Neal, 1998) believes that the use of technology in classroom actually have a negative impact on teaching and learning, because it encourages impersonality and shifts the focus from „learning experience“ to a mere „delivery of instructions“.

8. CONCLUSION

PowerPoint is primarily designed in order to ensure structure both of the content of the material and more efficient time management during the presentation. This advantage was quickly recognized by the lecturers and they introduced multimedia support to the teaching with an idea of clearly organizing their teaching and modernizing access to the education (Hlynka & Mason, 1998; Savoy et al., 2009). As pointed out by Szabo and Hastings (2000) PowerPoint helps the lecturers in interesting students in material and occupying their attention for a longer period of time. Of course, like most technologies which are at first implemented enthusiastically and with the assumption of universal applicability, after some time, scientifics are trying to establish practical value of innovation. Most often the results do not support the initial idea based solely on the benefits of the technology, so it seems that the problem is not technology itself, but in the initial unrealistic expectations. Therefore, the „opponents“ of computer technologies in teaching point out that PowerPoint is an instructive tool that is too focused on lecturer, encouraging absolute control of the interaction by the teachers and consequently decreases the quality of development analytical opinion of students (Creed, 1997; Tufted, 2003). Also, the question of validity of PowerPoint as a didactic software is asked, i.e. if PowerPoint is really means of learning. Based on previous researches in the field of the use of PowerPoint in the classroom it is hard to tell if there are strong enough evidences to support its use, or for abandoning mentioned technologies. If the main criterion of success in teaching process is students’ performances expressed through the grades, than in that case the effect of using software package does not help improving the success (Daniels, 1999; Rankin and Hoas, 2001). Several times we highlighted methodological inconsistency between researches regarding the influence of PowerPoint and performances of students. It seems that researches in which multimedia support to the lectures lasted for at least one semester (Lawry, 1999; Mantie, 2000) suggests the positive effects of this software on students’ grades. Recommendations for the future researches would be the
draft that would introduce every variation of the teaching format for at least one semester.

It seems that positive effect of the presentations "appears" only after a period of time of software implementation, because the comparation of classes with and without computer support (Ahmed, 1998) indicates that PowerPoint does not affect the students' performance improvement. As more consistent finding, regardless of methodological differences, stans out a positive attitude of students towards teaching that is supported by multimedia presentations. From this perspective, it makes perfect sense to continue with the use of PowerPoint in educational process, because we can assume that a positive attitude of students towards lecture can affect more positive atmosphere in the classroom.

Bearing in mind presented studies, we can suggest that the lecturers who don't use PowerPoint presentations during their lectures, should not change their way of teaching just because of the trend that prevailed during the last decade. In favor of that, one can easily realize the advantages and disadvantages in use of PowerPoint presentations. Researches shows that grades of students' performances with use of this kind of teaching are not higher compared to the traditional teaching. Also, making a PowerPoint presentation does not require less time than creating transparency film. The biggest "excuse" for further use of presentation software is positive attitude of students towards teaching conceptualized with PowerPoint presentation. The next step in exploration of the use of PowerPoint software as instructional tool should be the identification of scientific areas which, based on the material they are dealing with, are suitable for this teaching format and, perhaps more importantly, determine in which areas of teaching computer support does not lead to improving or it's reducing students' performances.

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