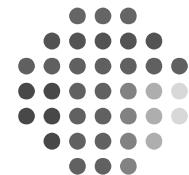


DisCo 2018: Overcoming the Challenges and Barriers in Open Education

13th conference reader



**Centre for Higher Education Studies
Prague 2018**





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Partners

Foreword

Dear Reader,

We are very pleased to present you with the proceedings of the 13th international conference *DisCo 2018: Overcoming the Challenges and Barriers in Open Education*, which was held June 25 - 26, 2018 in Prague, Czech Republic. Enjoying the pleasant atmosphere of the conference venue in the seat of Microsoft Prague, over 90 participants from 19 countries took part in this event. We had the privilege to welcome four outstanding keynote speakers:

- Brian Dorn, Associate Professor of Computer Science, the Union Pacific Community Chair in Computer Science Education at the University of Nebraska, Omaha;
- Stefania Bocconi, Researcher at the National Research Council of Italy (CNR), Institute for Educational Technology;
- Ivana Batarelo Kokić, Professor of Pedagogy at the University of Split, Faculty of Humanities and Social Sciences;
- Irena Briford, Director of Education, Microsoft Prague, the Czech Republic.

The conference strived to achieve academic excellence while establishing a platform for mutual collaboration and dissemination of ideas among professionals and academia. In addition to the four keynote speeches, it included over 40 further presentations.

In these proceedings, readers will find theoretical discussions as well as inspirational examples from praxis on how to use Open Educational Resources (OER) and why they are important. Universities should be a driving force in this area. The conference brought evidence that OER is an important EdTech topic with a lot of significant connotations. It touches important issues like quality assurance of education, sharing culture, learning analytics metadata, decentralized learning and also even smart cities, which could be noticed in the panel discussion. Brian Dorn, Ivana Batarelo Kokic, Stefania Bocconi and Miguel Gea from University Granada in Spain were the panelists and the topics they discussed were mainly connected to Open Education Challenges and Praxis.

In his presentation *Towards Learner-Centered Tools for Video Enabled Instruction*, Brian Dorn demonstrated that while creating instructional materials, the pedagogical and didactic balance is the first and only aspect they consider; second, the technical application comes. In general, the contrary happens. The course design was built firstly on LHC (learning design centered focus) approach and then HCD (human design centered) was introduced.

Stefania Bocconi's contribution was devoted to computational thinking in school curricula of various EU countries. Her keynote speech titled *Introducing Computational Thinking and Programming in Compulsory Education: A Perspectives on Recent Curriculum Reforms in Europe* was first focused on why students should learn coding at school. The same problem is currently being solved in the Czech Republic within the planned reform of ICT instruction. From this inspirational contribution, the audience could learn about key concepts of ICT in Italy which are: abstraction, algorithmic thinking, automation, decomposition, and generalization. Assessment regarding understanding the concepts of digital competences and IT thinking in various European countries was another subject framing the paper.

In pedagogy, a tension between theory and practice often exists; however, the conference emphasized the necessity to combine both. The paradigm of action research was clearly visible in particular articles. Almost all lecturers used and reflected upon this research tool.

We can also see the resurrection of Moodle returning to the conference limelight. Numerous authors especially from Eastern Europe and the Czech Republic have devoted their contributions to this practical learning management system. The proportion of presentations focused on pre-school education and field didactics in relation to technology in education was also relatively high. Majority of contributing educators used a similar scheme which does not only follow the didactics of language or mathematics, but tries to identify the problem and see if it can be solved with technology and in what way. We appreciate that this core scheme has appeared in a large number of lectures as it represents an important milestone in understanding the paradigm.

There is a visible shift from formal learning to non-formal; lifelong or informal learning is also crucial. It is a logical process. Now, I would like to point out several interesting papers from our collection.

Miguel Gea's contribution on *Transmedia Literacy Applied as the Learning Framework for Children with Intellectual Disabilities* explained that if e-learning is criticized, it is not the criticism of the concept, but rather those who prepare it. According to the author, to criticize e-learning as a form is nonsense. In his speech, he also thoroughly explained how transmedia literacy is related to learning with emphasis on children with intellectual disabilities.

Tamás Bokor, Zita Komár and Veronika Pelle presented their paper called *Powerful Personality = Persuasive Presentation? - Introducing ICT-Based Methodology for the Quadruple Helix*. In their speech, the authors proposed ways of university cooperation with

industry and private sector; they also focused on language and value mismatch between the worlds of theory and practice. Specifically, their DISCO project addressed the topics of online learning, content delivery and soft skills supported by the open access which enables students to acquire knowledge in diverse situations through different media.

Štěpánka Hronová spoke about *Customization of EFL Materials*. She introduced a scheme of customization applicable to preparation of instructional materials with the focus on business English for marketers and economists respecting the principles of OER. She also presented results of international research among language educators on adjusting teaching materials and use of technology in ESP classroom. The author considers technology to be a meaningful teaching and learning aid on the background of the mutual instructor-student relationship.

Athina Basha presented a lecture on *Albania in The Last Two Decades in Context of Media and Information Literacy in Libraries*, which offered a theoretical framework to follow the themes of information and media literacy by UNESCO.

This is just a small sample of treatises which can be found in our reader. The first part of the proceedings is made up by peer-reviewed articles; then a paper by Beba Stankovic *INELI Balkans E - Learning - The Successful Story about the Library Online Learning Platform* is presented. In her text, the author explains the role of the National Library in the field of education and highlights the importance of international cooperation particularly among the countries of former Yugoslavia and their neighboring countries. The final section of the conference reader offers abstracts of contributions submitted in a form of a presentation.

Finally, we would like to express gratitude to our partners for their sponsorship and support. First of all, we thank *Central Europe Initiative*, our general partner. We are also grateful to *Microsoft* for being our host and delivering very interesting workshops to our international audience. Our thanks go to *AAEI (Association of Adult Education Institutions)* the *Czech Republic*, *Navreme Boheme s.r.o*, *Prague Development Center*, *Veriod* and media partner portals *Open Education Europa* and *Edumenu*; further, also to journals *Andragogika v praxi*, *Aula*, *Ricercazione*, *Firemní vzdělávání* and *Ikaros*. Last but not least, we really appreciate the enthusiasm and work of the Program and Organization Committees as well as volunteers. Without their great effort and help, the organization of such an event would not be possible.

Jan Beseda

Articles

Gamification

VARIETY OF GAMIFICATION IN THE EDUCATION – THE POLISH AND CROATIAN PERSPECTIVE

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Key words: escape room, games, learning, media education, students

Abstract: Gamification in education operates under the assumption that the kind of engagement that gamers experience with games can be translated to an educational context towards the goals of facilitating learning and influencing student behaviour. The trend becomes more and more popular, especially in a non-formal learning environment, but still it is not very well known in the formal education process among people who are preparing to become teachers, educators or pedagogues in Poland and Croatia.

The aim of the qualitative and quantitative scientific explorations was to survey students preparing for taking up the profession of a teacher about the knowledge in the field. The survey was conducted during the first and second quarter of 2018 among 61 last grade students of Early Education at University of Silesia in Poland and among 30 5th grade students of Integrated undergraduate and graduate teacher's education at University of Split in Croatia.

Additionally, students' creation and animation about the gamification and role of games in learning and teaching process were analyzed. As a results of the observation and analysis we pointed examples of different kind of games (such as board games, card games, logical games, escape rooms) and mechanisms (such as cooperation, collecting points and badges, completing levels) that can be used in practical pedagogical work with students.

The approach to the variety of gamification in education produces a practical pursuit to its accomplishment. The study was designed to show the opinion and attitude of students to this problem in the context of future work but also to show the practical hints how to use such trend in higher education in the pedagogical field.

Introduction

The potential of games in terms of impact on social life is related both to their spatial and temporal-historical dimension. Initially, games were considered only an entertainment and were treated as a way of amusement – one of important human activities. As time went by, the role of games extended significantly. Historical evidence and archaeological exhibits confirm that already several thousand years ago people played games (Dzieliński 2013). In terms of the time aspect, different types of games invented across the centuries should be mentioned. Board games, card games and the whole variety of analogue games are referred to here, but also to those developed in the era of digital media – electronic games (e.g. computer RPGs (role-playing games); applications etc.), and recently to those games linking two dimensions (e.g. by the use of QRcodes, VR (virtual reality) or AR (augmented reality)). The technological revolution of games market made it possible to play together even for the people that are far away from each other in terms of physical environment. The game may take place online in a virtual world, via various media channels. People may play together regardless of barriers of distance, nationality or language. Spatial dimension of game gained a new meaning. “Games are everywhere. We play games while traveling, while relaxing, or while at work, simply to create enjoyable experiences for ourselves and for others” (Robson, Plangger, Kietzmann and Pitt 2015, 411).

The basic task of both traditional and electronic games is to provide pleasure and entertainment to players. However, it is more and more apparent that it is not the only significant element of the experience.

Sebastian Deterding underlines that “Games entice hundreds of millions of people across the globe to spend countless hours and dollars performing often menial tasks (...)” (Deterding 2012, 14). Further the author wonders how it is possible to make use of this energy for other purposes and tasks of more practical nature. One of the answers may be to the use of the games themselves and their mechanisms for the educational purposes. Franković (2016) states that the contemporary teacher needs to find a way how to facilitate and encourage learning by supporting students to think creatively and involving them in research and problem solving – using gamification in education could be a possible solution to achieve these goals. Yıldırım (2017) emphasizes that dynamics and mechanics of games make people more focused on the process by attracting their attention and positively affecting their motivation and curiosity. Medica Ružić and Dumančić (2015) also highlight the importance of gamification in education in increasing the interest and motivation in students, as well as empowering their communication and sharing ideas between them.

The easiest way to define gamification may be "the use of game design elements in non-game contexts" (Deterding, Dixon, Khaled and Nacke 2011, 1) or "The use of game-thinking and game mechanics in non-game contexts in order to engage users and solve problems" (Beseda, Machat and Palecek 2012, 36). “(...) gamification can be seen to have three main parts: 1) the implemented motivational affordances, 2) the resulting psychological outcomes, and 3) the further behavioral outcomes” (Hamari, Koivisto and Sarsa 2014, 3026).

Gamification which helps to shape behaviour of users (process participants) in the desired way is applied currently in business, marketing, HR, management, environmental initiatives (Dicheva, Dichev, Agre, and Angelova 2015, 75) and in other fields, but also, more and more often, in education. “Mechanics are the decisions that designers – those who wish to gamify a non-game context – make to specify the goals, the rules, the setting, the context, the types of interactions (i.e., opponents), and the boundaries of the situation to be gamified. (...) There are three different types of mechanics – setup mechanics, rule mechanics, and progression mechanics – which are tremendously important not only for games, but also for gamified experiences” (Robson, Plangger, Kietzmann, McCarthy and Pitt 2015, 414-415). The numerous mechanisms used in gamification during the process of education include: rivalry, cooperation, collecting points, awards and penalties, completing subsequent levels, loss of points or the so-called lives, leaders ranking, tracking progress, completing the so-called missions etc.

The important elements are the dynamics of the process itself, used mechanisms and emotions that accompany the tasks. Plantak Vukovac, Škara and Hajdin (2018) emphasize that gamification, when used in educational context, is being applied to improve learning and problem solving. Gamification in terms of broadly understood education process and bringing up is to maintain commitment of learners, increase their motivation and effectiveness of activities. “The main problems in modern education are related to the

lack of engagement and motivation of students to participate actively in the learning process. Because of that, teachers try to use new techniques and approaches to provoke students' activity and motivate them to participate in training. One possible solution is to reward the efforts and achieved results by awards, which leads to increased motivation for participation and activity. That decision is based on the use of game elements in the learning process" (Kiryakova, Angelova, and Yordanova 2014). Such tactics should serve the attainment of the selected goals and simultaneous use of game rules. This is how the term gamification is understood in the educational process. Medica Ružić and Dumančić (2015) note that gamification can enable students to be actively engaged and motivated in learning by elaborate mechanisms of winning badges, collecting points, passing the levels or winning the prizes. Activities such as sharing of tasks, exchange of ideas and expressing opinions may help the students to see the educational goals and achievements in a new light - as something proactive, dynamic and fun, not only dull and mandatory.

Plantak Vukovac, Škara and Hajdin (2018) conducted research among 124 elementary and secondary school teachers in Croatia about the usage of gamification in their teaching practices. More than half of the respondents (54,8 %) didn't know about the gamification concept, and 31,5 % of them knew it. Also, 91,9 % of respondents answered that they didn't have any training or organized education about the concept of gamification, so the authors conclude that most of the teachers who knew about the concept knowledge about it in an informal way. Only small percentage, 20,97 % of secondary school teachers and 17,7 % elementary school teachers, implement gamification in their classes. Those teachers who use gamification in education, the most commonly use these mechanisms: stories, points and tasks/challenges. As the main reasons for using gamification in education teachers indicated increased motivation of students (41.9%) and a more attractive lesson (33.9%). On the other hand, as the main reasons for not using the gamification in education were the lack of time to prepare the game teaching content (43.9%) and not knowing enough about the concept of gamification (29.3%).

The reaserch of Yildirim (2017) among 34 sophomores in elementary mathematics education in Faculty of Education, that had taken the Instructional Principles and Methods course in a gamification design, aimed to determine how the gamification of the educational process is perceived by students and whether the students' views unify around a common ground regarding the concept of gamification. The author stated that the students who participated in this research have a common positive thought about the gamification in education and that the prominent elements of this process are logic of the process, emotions towards the procedure, advancement structure, achievement points, and badges.

In terms of a theoretical analysis, it would be necessary to single out two aspects:

- I. the use of games (in the traditional analogue form or modern digital form) in education as a tool of expanding the process (this element cannot be identified with real gamification, as game is in such a situation often considered to be only a teaching aid);
- II. the gamification of teaching-educational process, understood as using game mechanisms for the purpose of modification of the whole cycle of the teaching process (this way of impacting applies rules, dynamics and mechanisms of games, but does not have to involve games (in a traditional, analogue form or modern digital form) on a physical level; learning itself may be a kind of game. The gamification may apply to the entire education cycle, single thematic area, a lesson unit or only some of the classes.

The second aspect constitutes a broader conceptual spin.

The gamification used in education refers to the assumption that a type of commitment and motivation that a person shows while playing a game may be transferred to an educational context for the purpose of achieving the selected educational goals and pedagogic modification of pupils' behaviour. As is shown by analyses and studies, this trend is becoming very popular, in particular in an informal education. However, in many countries it has not been implemented in formal education of students who are learning to become teachers. The research interest objects in the exploration processes the results of which have been presented in this article were two universities in Poland and Croatia.

The purpose of the studies was to understand the opinion of future teachers and educators on the role of gamification in education and using elements of games in learning and teaching.

Methodology

The main issue of the conducted research has been formulated as follows:

What is the role of games and gamification in education in the opinion of future teachers of the two selected universities in Poland and Croatia?

The search for the answers to such questions was focused on several more detailed aspects such as:

1. Opinion on the value and validity of the use of gamification in education depending on the age of pupils, form and level of education;
2. The previous experience of students and future perspective the implementation of gamification in education;
3. Knowledge of students on the rules of gamification in education;
4. Assessment of significance of educational games and gamification in media education.

The research was conducted in the first and the second quarter of 2018 on 61 students of early school pedagogy of the University of Silesia in Katowice/Poland (66.3% of the age-group) and 30 students of

teacher's education at the University of Split/Croatia (62.5% of the age-group). All of the respondents were students of the last grade of the programme of classes of their major. In Poland, this was pedagogical studies major – early school education, which has two-grade structure (three-year bachelor degree studies and two-year supplementary master's degree studies). After completion of five years of studies, the graduate obtains master's degree. She/he is authorised to work as a teacher in initial primary school classes. Programme of classes 1-3 is integrated and – except for several subjects (e.g. foreign language, physical education, religious education) – the whole programme is carried out by a single teacher. In Croatia, teacher's education major studies are five-year long and integrated. A graduate obtains also a master's degree and is authorised to teach the initial classes of a primary school. The education programme is also integrated, however, it covers classes 1-4.

We intentionally selected for the role of respondents the students in the last semester of their studies, as we can assume that by now, they have obtained knowledge and competences enabling practical work with pupils. Therefore, it is particularly interesting whether the knowledge they have includes information on a gamified education process. In this research, the main area of interest was the opinion of the focus group on the role of games and gamification in the broadly understood education. In the Polish sample all of the respondents are women, in the Croatian – 28 are women, one respondent is a man and one respondent did not declare sex.

In the research diagnostic survey method involving survey technique and tool was used – a survey questionnaire that was prepared in the Polish and Croatian languages. The questionnaire included the initial part, the main part and the personal information part, which was aimed at obtaining basic sociometric data. The main part included 16 open questions, semi-open questions and multiple choice questions, both using and not using a scale. The survey covered students' opinions and their self-assessment.

Additionally, hidden and uncontrolled observation was used. The observation was to deliver additional knowledge on the type of games the respondents willingly use during classes. Moreover, the analysis of the students' work in the form of short footages and animations, which were to show the understanding of the notion of gamification by future teachers from Poland, was carried out.

The research results were subjected to initial analyses. The analysis was limited to the methods of descriptive statistics.

Results

The respondents were asked whether they know and whether they knew before the very term "gamification". In Poland 85.2% admitted they knew the term, and 3.3% confirmed that they were not familiar with the described phenomenon, other respondents were not able to deliver a clear answer. Only

6.6% of the Croatian respondents declared that they knew the term before and as many as 86.6% did not have such knowledge at the moment of carrying out of the research. Other respondents were not able to give a clear answer.

It is worth pointing out that at this stage of the research, the definition of gamification was explained to the respondents in order to be sure that also this group, which previously did not have such knowledge, was able to validly express their opinions.

Within the scope of the first area of research interests, the participants were asked to assess on a 5-grade scale the value and validity of using gamification in education depending on the age of the target group, education form and education level. The results have been presented in Table 1.

TABLE 1. PERCENTAGE RESULTS OF THE EVALUATION OF VALUE AND USEFULNESS OF GAMIFICATION IN EDUCATION ACCORDING TO STUDENTS FROM POLAND AND CROATIA

Evaluation of value of applying/implementing gamification tactics in education																						
depending on the age of the target group	POINTS ON SCALE FROM 1-WORTHLESS TO 5-VERY VALUABLE														<i>M</i>							
	1		2		3		4		5		P	C	n	%	n	%	n	%	n	%		
	n	%	n	%	n	%	n	%	n	%	n	C	n	%	n	%	n	%	n	%		
CHILDREN	1 0	1 6. 3	0 6.	0 2	1 6	2 6. 2	0 9	0 7. 5	2 1	3. 3	4 5	6. 5	2 6.	2 6.	2 2	3. 2	2 7	9 0	2.45	4.86		
YOUTH	0	0	0	0	1	1. 6	0	0	7	6. 5	1	3. 3	9	1. 4. 7	1 8	6 0	4 4	7 1	1 6. 6	4.57	4.33	
ADULTS	0	0	0	0	0	0	1	3. .3	8	1. 3. 1	1 1	3. 6. 6	1 1. 0	1	3. 6. 6	4 2	6. 8. 8	7 2	4.55	3.80		
OLDER	0	0	0	0	3	4. 9	6	2 0	1	1 6. 3	1 1	3. 6. 6	3 3	5 4. 0	9 0	3 5	1 5	2 4. 5	1 3. 3	3.98	3.36	
depending on the form of education	1		2		3		4		5		P	C	n	%	n	%	n	%	n	%		
	P	C	P	C	P	C	P	C	P	C	n	C	n	%	n	%	n	%	n	%		
	1 6	1. 0	0 0	3 0	4 9. 1	0 8	2 5. 9	4 6.	2 6	3. 2	8 2	2 6. 6	0 0	0 0	2 0	6. 6	2 0	6. 6	2 0	6. 6	2.50	4.60
FORMAL EDUCATION	1 6	1. 0	0 0	3 0	4 9. 1	0 8	2 5. 9	4 6.	2 6	3. 2	8 2	2 6. 6	0 0	0 0	2 0	6. 6	2 0	6. 6	2 0	6. 6	3.37	4.63
depending on the level of education	1		2		3		4		5		P	C	n	%	n	%	n	%	n	%		
	P	C	P	C	P	C	P	C	P	C	n	C	n	%	n	%	n	%	n	%		
	1 6	1. 0	0 0	0 0	0 0	0 0	1 6. 2	2 6.	0 0	3 3	5 4.	4 3. 1	1 1	1 1	2 0	8. 6.	2 0	6. 6	2 0	6. 6	3.86	4.86
PRIMARY SCHOOL	1 6	1. 0	0 0	0 0	0 0	0 0	1 6. 2	2 6.	0 0	3 3	5 4. 0	4 3. 1	1 1	1 1	2 0	8. 6.	2 0	6. 6	2 0	6. 6	4.47	4.13
SECONDARY SCHOOL	1 6	1. 0	0 0	0 0	0 0	0 0	1 6. .7	2 6. 7	1 6.	1 0	1 6. 3	1 1	5 3. 3	4 1	6 7.	1 0	3. 3	1 2	3. 2	4.68	4.06	
STUDIES	0	0	0 0	0 0	0 0	0 0	2 6. .6	2 6.	3. 2	4 3. 3	1 5. 5	1 4. 4	4 6. 6	7 4. 4	1 2. 1	3 0	1 0	3. 3	1 3	3.54	4.03	
ADDITIONAL EDUCATION (after completing studies – trainings, excellent courses etc.)	2 2	3. 2	0 0	0 1	1. 6	1 6.	3. .6	2 6.	4 6. 6	8 6. 6	2 6.	4 2. 6	1 0	3. 3	6 8	9. 1	1 1	3. 6. 6	3.54	4.03		

NOTE:

P – POLAND/UNIVERSITY OF SILESIA (N=61); C – CROATIA/UNIVERSITY OF SPLIT (N=30)

THE PERCENTAGES DO NOT ADD UP TO 100% DUE TO ROUNDING UP OF DECIMAL PLACES OF THE PERCENTAGES

In the case of the assessment of the gamification value in education depending on the target age group (children, youth, adults, elderly people) the respondents from Poland assessed the value as the highest in the case of working with youth ($M = 4.57$) and adults ($M = 4.55$), in both cases the highest, fifth degree of the scale, was the most often (in 72.1% of cases and in 68.8% of cases, respectively) selected. The value of gamification was assessed as the lowest in the case of children ($M = 2.45$). The assessment was different in

the Croatian group, as 90% of the respondents of this group selected the highest grade of the scale in the case of children, which resulted in the value of gamification being assessed as the highest in the case of education of this age group ($M = 4.86$). It can be presumed that different results were caused by slightly different look at the entire process in the examined samples. On the one hand, there are arguments that the children constitute a group most focused on fun activities and playing, and that in the pedagogical practice some mechanisms e.g. collecting points (in a form of badges, symbols of smiling faces, stars or flowers) are frequently used. On the other hand, commitment and motivation to learn may decrease with age and then, in the case of youth and adults, an additional stimulating mechanism based on points, levels, rivalry or cooperation may be needed. Also in the older age group we can suspect a greater understanding of the tactics of using games mechanisms in the context of other areas of life.

Consistently, the Croatian respondents assigned the highest value and validity to using gamification with regard to the primary school education ($M = 4.63$), and Polish respondents – with regard to university education ($M = 4.68$). In the case of the second group, this result can be related to the specific nature of tertiary education in Poland, where there is a slightly greater freedom in terms of the methods used and provided knowledge than in strictly defined formal teaching processes at the previous stages. A teacher in primary school or secondary school must demonstrate a lot of determination and creativity to gamify his/her lessons or classes, which are stuck in a rigid structure of school education.

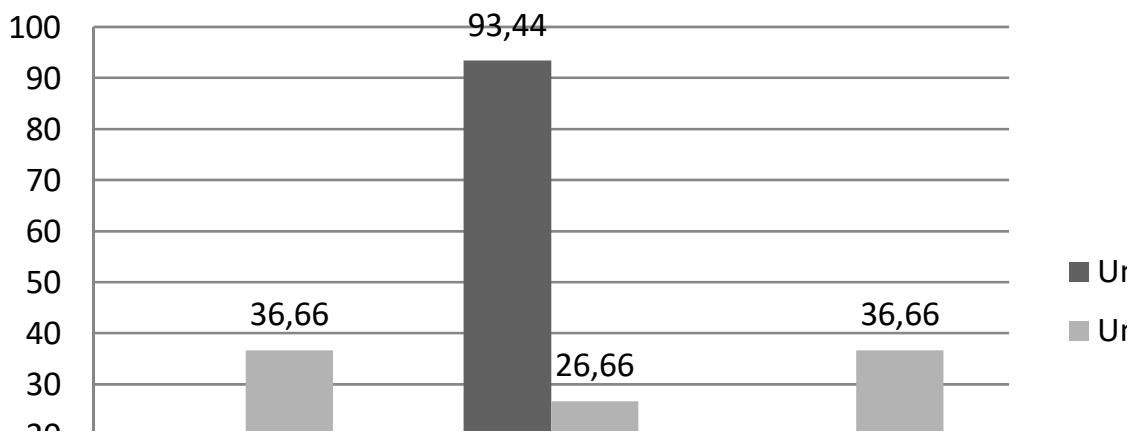
The validity of and the value of the tactics related to gamification in informal education was assessed as higher both by Poles ($M = 3.37$) and Croats ($M = 4.63$) in comparison to the gamified educational process in formal education (Table 1).

The respondents were also asked whether in school education the gamification mechanisms may be used in the case of each school subject. Most of the respondents – 68.8% of the Polish students and 46.6% of the Croatian students – believe that some mechanisms may be used in the case of each school subject. The Polish respondents emphasized that it will depend on a given topic, group and personal characteristics of a teacher, but it may always enrich the traditional teaching process and have a positive impact on the motivation of the participants of this process. The Croatian respondents emphasized that in the case of each school subject there is knowledge which can be communicated using gamification, the teacher just needs will and creativity, and this will make pupils learn faster and increase their motivation to act.

Another area of interest of the presented research is the previous experience of participating in the gamified education process and the will and perspective to use these tactics in the future educational work.

CHART 1. COMPARISON OF PAST EXPERIENCE RELATED TO GAMIFICATION IN THE EDUCATION PROCESS OF POLISH AND CROATIAN STUDENTS (%)

Have you met with the use of gamification in the process during your past school education?



Source: Own data

THE PERCENTAGES DO NOT ADD UP TO 100% DUE TO ROUNDING UP OF DECIMAL PLACES OF THE PERCENTAGES

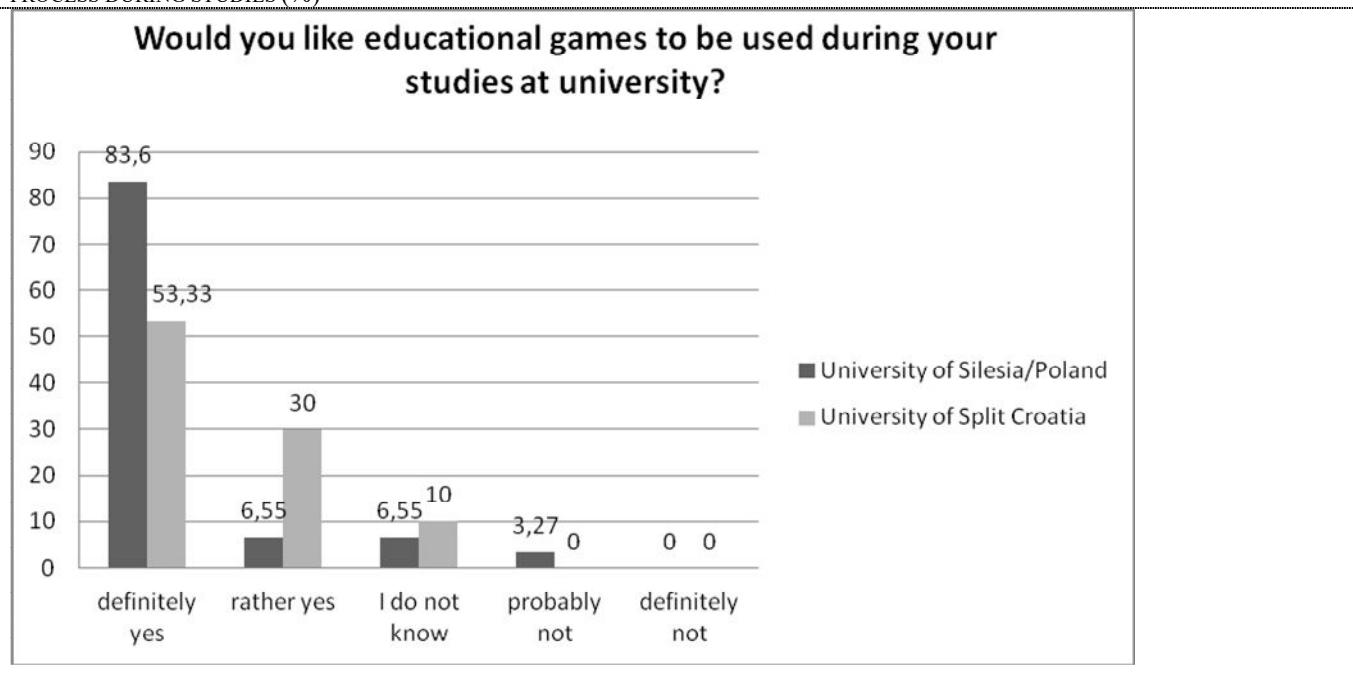
The future teachers from both countries were asked about experience associated with gamification in their educational career in the past. The results were presented in Chart 1.

In the Polish group, the vast majority (93.44%) admitted that they did not participate in an education process supported by tactics typically related to gamification while teaching in school in the past. The answers of the Croatian students are slightly more diverse, as the same percentage (36.6%) confirmed that they encountered gamification implemented in school education, but also the same number of respondents was not sure (could not deliver a clear definition). Such high uncertainty of the Croatian respondents may perhaps be connected with a high percentage of people that previously did not know the concept and the phenomenon (which is demonstrated at the beginning of this part of the article). We may only guess that since a large part of this group of students did not know the concept of gamification, it was difficult for them, while answering this question, to clearly specify whether these mechanisms were encountered in the past as elements of school education or not. Such an opinion can also be confirmed by self-assessment of competences, carried out by Croatian students in the next part of research.

As is presented in Chart 2, the majority of the future teachers in Katowice (83.60%) and Split (53.33%) would definitely want the educational games to be used as part of tertiary education. Percentages were similar in the case of the question about gamification tactics. 68.85% of the surveyed Poles would definitely like the gamification tactics to enrich the teaching process of tertiary education. 46.6% of the surveyed Croats hold the same belief. What is worth noting is that the use of games alone (in accordance

with approach 1 described in the introduction) is still more understandable and familiar than gamification tactics (described in approach 2), which is shown by a proportionally lower percentage of the most favourable answer (in spite of the fact that it is still dominating in the two analyzed samples).

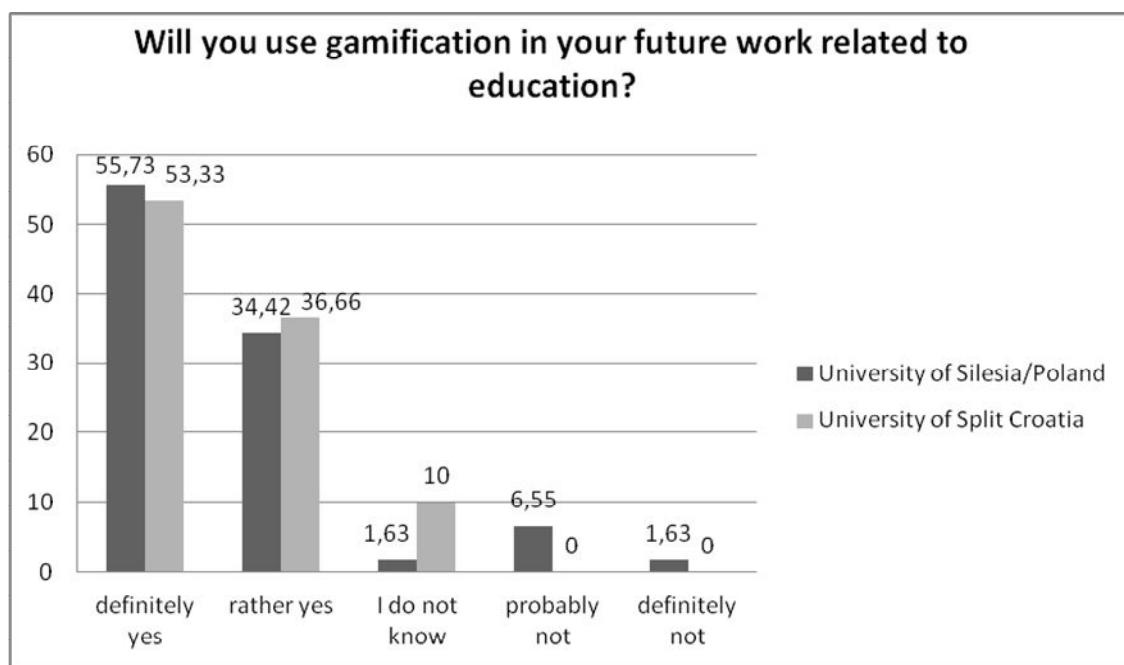
CHART 2. THE WILLINGNESS TO USE BY THE POLISH AND CROATIAN STUDENTS OF THE EDUCATIONAL GAMES IN THE EDUCATION PROCESS DURING STUDIES (%)



THE PERCENTAGES DO NOT ADD UP TO 100% DUE TO ROUNDING UP OF DECIMAL PLACES OF THE PERCENTAGES.
IN THE CASE OF THE UNIVERSITY OF SPLIT – TWO ANSWERS ARE MISSING

A very similar percentage of the respondents from both countries (Poland – 55.73%; Croatia – 53.33%), constituting more than a half of the respondents in each group, declare decisively that they will and want to apply games tactics in education, that is gamification in the future educational and pedagogical work (Chart 3).

CHART 3. COMPARISON OF DECLARATIONS OF USE OF GAMIFICATION IN FUTURE PEDAGOGICAL WORK AMONG POLISH AND CROATIAN STUDENTS (%)



Source: Own data

THE PERCENTAGES DO NOT ADD UP TO 100% DUE TO ROUNDING UP OF DECIMAL PLACES OF THE PERCENTAGES

The questions in terms of the second aspect are positioned in the axis the past-present-future. Although in general, past experience is not extensive in the studied group, the declared willingness to take part in the gamified education process in terms of tertiary education is high, and the perspective of using these tactics in the future is positive. However, we can assume that if gamification is not implemented in terms of programme of studies preparing students to become teachers, then, despite the good will and the willingness of students, the future teachers will not be able to use gamification in practice due to lack of practical competences in this respect.

The third area of interest refers to the knowledge of the surveyed students – future teachers – about the rules, principles and tactics used in gamification in the context of education. Both the respondents from the University of Silesia in Katowice and from the University of Split were asked by means of an open question to list three most popular, in their opinion, gamification mechanisms used in education. Taking all the respondents into consideration, the most frequently indicated mechanisms included: collecting points; advancing to a higher level; competition; deducting bonus; awards and cooperation. Polish students demonstrated higher knowledge of the mechanisms, as they listed many more proposals than their Croatian colleagues. Such a thesis is confirmed by the self-assessment carried out by the respondents themselves. They were asked to assess the level of their knowledge and potential skills enabling creation of their own educational game on a 5-grade scale, where 1 means the lack of knowledge and 5 means full knowledge.

Students from Katowice assessed their competences much higher: 86.8% of persons selected the highest, fifth grade on the scale; 9.3% – the fourth grade of the scale, and the remaining 3.2% – the third grade of the scale. In the same question, 43.3% of Croatian students selected the third grade of the scale. The highest, fifth grade was selected only by 10% of people in this group. As one could assume, the statements of students constitute an accurate reflection of reality. Polish students' study plan includes a subject called: New technologies in the education and upbringing (it includes learning about, the theoretical outline of the topic, among others), as well as optional subjects they can choose (which help to deepen the practical skills of designing and creating various educational games).

The research also involved an analysis of the results of work carried out by the Polish students – animations, footages and spots about ideas and variations related to gamification in education. 42 separate footages lasting from a dozen or so seconds to a few minutes were subject to a qualitative analysis. In the process of their creation, the students used such techniques as, among others, stop motion, computer animation, flip book, live time drawing, painting on sand, acting etc. The analysis of products showed that the most often presented mechanisms of gamification were: collecting points or gadgets and moving to subsequent levels. Then there were cooperation and competition; awards and penalties; tracking progress; badges. Most of the students presented understanding of the idea of gamification with their footage in an accurate way.

The last set apart (fourth) area of exploration of this research was related to referring of educational games and gamification to media education. Media education was in that context understood as deepening the media competence and shaping a responsible attitude that is critical, creative and open in respect of any media messages. Media education is, in other words, an education in terms of media reception, education about communication mechanisms and education provided by using media-technological tools. The respondents from the two countries were asked to evaluate the degree of applicability of gamification tactics in media education. The suitability and validity of gamifying of the teaching process in terms of media education were assessed as higher by the Polish students, although the respondents from both countries assigned quite a high score using a 5-grade scale. In the group from Katowice, 60.6% of the respondents selected the highest, fifth degree; 37.7% – the fourth grade of scale, and 1.6% – the third grade of scale. In the group from Split, the fourth grade of scale was chosen the most often (33.3%); 40% of the respondents selected the third grade of the scale, and 13.3% – the fifth (highest) grade of the scale. The rest of the respondents in this group did not provide answers. No future teacher from Poland and Croatia selected first or second grade of scale. The average in the case of the Polish respondents is very high – 4.59; in the case of the respondents from Croatia, it is also higher than half – 3.69. Higher grading in the Polish group is probably related to the experience of the students who had the possibility to participate in

classes of this type during their studies (related to media education during which games and/or gamification tactics were used).

The respondents were also asked about their evaluation of applicability of using educational games in the education process in the field of media education. Researchers were not taking into consideration the division into traditional analogue games (paper games, card games, board games etc.) and electronic games (with the use of ICT or of mobile applications). Both Polish and Croatian future teachers most often selected the highest, fifth grade of the scale (Poland – 86.8%; Croatia – 53.3%). Once again, none of the respondents selected the first or second grade of the scale. The validity of using educational games in media education was evaluated by all the respondents as high.

The hidden type observation of the Polish group was to provide additional knowledge about the type of games the respondents most frequently use during classes. While summing up the results, card games, traditional 2D and 3D board games, card-board games, logical games involving the use of QR codes, charades, crosswords, guessing games, wheel of fortune type games; escape room using modern technologies in 1:1 scale, as well as "escape room in a box" have to be indicated.

As part of the survey study, the respondents from both analysed universities were asked about the usefulness of educational escape rooms during classes. Most often selected answer, regardless of the country, was admitting that taking advantage of this technique is definitely useful (Poland – 52.4%; Croatia – 46.6%). 14.7% of the Polish and 23.3% of the Croatian students could not give a clear answer. Nobody selected a "definitely not" answer to the question on whether applying the escape room technique during classes is useful. At the same time, the answer "rather not" was selected only by 1.63% of the Polish group. The respondents are thus rather open to the use of the technique known as part of the commercial entertainment activities in the educational field.

Conclusion

Summing up the obtained results of the research, which was to present the opinion of future teachers from Poland and Croatia on the role of gamification in education, we have to refer to the four previously distinguished areas.

1. While analysing the opinion on the validity of using gamification in education depending on target group, area and form of education, it should be noted that the Croatian students, unlike the Polish students, usually assign the highest validity level to the use of game mechanisms in the education of the youngest group – children. According to the respondents, such technique is of a greater value in a primary school. Most of the respondents from the University of Silesia believe that the use of the technique is the most valid in relation to youth, as well as adults, and it is of the greatest value as part of

higher education. Both the Poles and Croatians assign higher value and validity to using gamification tactics in informal education compared to formal education.

2. The description of the gamification perspective using the axis: past experience-present will-future professional plans differentiates the groups from both countries in terms of the category of the past experience. The Croatians demonstrated that in the past their school education was based on the gamification techniques. The vast majority of Poles did not take part in the gamified education process at the previous stages of school education. Both groups proved high motivation to use both educational games and gamification tactics in the present education at university. Similarly, a high evaluation should be assigned to the reported perspective of using gamification elements in the future work of all the respondents.
3. In terms of the self-assessment of competences, knowledge, and skills enabling creation of an author's own educational game, the students from Poland assigned themselves higher scores. They also listed more gamification mechanisms in the answers to the open question.
4. The potential of applying both educational games and gamification strategies and tactics in media education was evaluated as very high both by the Polish students and the Croatian students. The students who had the possibility to participate in the mass media education classes used various traditional games and games enriched with technologies. All the respondents admitted that one of the useful games in education may be escape room.

Certainly, the use of games, gamification or game-based learning are trends that will keep on developing in the years to come. The positive attitude of the respondents to gamification may give hope that they will try in the future, as teachers, use specified and valid tactics, mechanisms or principles in the designed education process. It is important that they do it thoughtfully and in a professional manner. As the results of the experimental project related to early school education show, the achieved results are encouraging (Nowak 2017). Alina Nowak stated: The role of a teacher changes from a person being the main source of knowledge to an organiser and animator of various activities. A teacher should be an architect and a creator who supports and inspires a pupil in terms of his/her activities and plans. Especially important is the period of the first years at school, when the character of a person is shaped and during which a child is provided with basic knowledge. The experience with the elementary education determines also the attitude towards the further education. For this reason, it is very important to use in teaching such methods as gamification, which are effective in communicating information, include elements of play, game, facilitate acquisition of knowledge with their attractiveness, and thereby – increase effectiveness of education (Nowak 2017, 134). Other experimental studies carried out among first-grade pupils of primary school in Serbia also show that the use of educational games may have a positive impact on the

development of such cognitive operations as: recognizing, naming, abstracting, forming and defining geometric shapes (Stojanović, Milovanović, Ćirković-Miladinović 2016, 149).

What can be done to make the future teachers include such elements in their work with children and youth? In that context, regular implementation of gamification and educational games in university level education, as elements of majors preparing future teachers for their work, seems important. The introduction of such elements to the classes at the University of Split and extending them at the University of Silesia in Katowice may – in the opinion of authors – bring positive results. The reason for this is that experiencing advantages and disadvantages of these tactics, opportunities and threats related to them in the direct contact ensures the possibility of correct adjustment and designing this method in the future pedagogical work. The analysis related to the introduction of gamification in academic education (generally, without any special focus on specialisations and teacher's majors; the examined major is management) was carried out by Monika Wawer, who emphasises: gamification may be applied at the various levels of education – from the primary education to universities. The purpose of introducing it at universities may be, among others:

- encouraging students to a greater commitment and supporting their various activities,
- establishing social contacts and establishing bonds between students,
- strengthening positive relations between students and university (Wawer 2016, 200).

Despite the clearer and clearer trend of using gamification and educational games in the education process aimed at many age groups, an in-depth empirical analysis of this phenomenon is still needed. A significant research problem for further research should be related to the effectiveness of gamification with regard to the designed, implemented, and, as a consequence, controlled educational goals. Significant issues are also questions on constancy of motivation created by the use of mechanics and dynamics of games in education depending on age, target group and substantive area of education.

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DEVELOPING SERIOUS GAMES FOR EARLY CHILDHOOD EDUCATION		BELMA RAMIĆ-BRKIĆ Computer Science University Sarajevo School of Science and Technology, Bosnia and Herzegovina
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Keywords: ICT, Serious games, Education, Self-efficacy, Playful learning.

Abstract: Gaming industry continues to be the fastest growing industry. Young generations are born with easy access to technology and the number of young gamers is increasing at a faster pace than that age population growth. Taking all this into consideration, we are still lacking the implementation of technology within formal educational systems that could significantly benefit the students as well as the community in general. The most beneficial would be low- and mid-income countries such as Bosnia and Herzegovina where funding for educational purposes is almost non-existent. Furthermore, although there exists a number of serious games that foster the education, they are mostly developed in English language and therefore not adequate for children with disabilities, struggling with one (mother) language.

The work presented here, promotes the development of serious games and their use with pre-school and elementary school children. The games are developed within the Computer Graphics module offered at University Sarajevo School of Science and Technology. The games foster the education of letters, colours and shapes. Professional guidance was given by professionals working at an NGO “EDUS – Education for All”, program devoted to evidence-based work with children with disabilities. The received positive feedback on game design and logic, as well as the readiness of teachers to use a new technological approach in the learning of basic skills for children, provides solid basis for continuing the project.

Introduction

The gaming industry continues to grow at a high speed (Takahashi 2017). We are continuously offered new genres and categories of games for different groups of users. Since recently, the focus has been on educational games for children and children with disabilities. Educational games are “serious games specifically used for education” (Backlund and Hendrix 2013). Serious games is the term used to describe games “that are primarily designed for non-entertainment purposes” (Hauge, Pourabdollahian and Riedel 2012). Companies such as Toca Boca and Night&Day Studio are developing games that “delight kids and please parents” (Keyishian 2016).

With the development of technology, the question is how to include these new trends in education. The development of educational games can be attributed to the identified positive impact of games on learning (Connolly, Boyle, Macarthur and Hainey 2012). Researchers are interested in developing new tools to support learning, as well as to provide support for teachers and children. Developing a variety of educational games is the first step towards incorporating technology in education. However, to make the games effective, the key challenge is “finding the balance between game playability and fun and solid learning design that aligns learning outcomes with assessments” (de Freitas 2018).

The drawback of the available games is that they are only developed for English speaking population and therefore, inadequate for other children. The work presented here shows *novel educational games developed in collaboration with an education specialist* working at an NGO „EDUS – Education for All“, program devoted to evidence-based work with children with disabilities (edusbih.org). Each game covers a specific area of learning and as such could be used in conjunction with teachers in the classroom. These games are

appropriate for individualized learning allowing children to engage in the learning process in classroom or from the comfort of their room. Being stand-alone applications, created games can be installed on any platform and played at individual pace and time.

Related Work

Games are considered to be good motivational tools (Backlund and Hendrix 2013). Backlund and Hendrix (2013) stated that “digital game based learning may be a useful and productive tool to support students in effective learning”. Clark et al. (2015) also reported that “digital games significantly enhanced student learning relative to nongame conditions (Formula= 0.33, 95% confidence interval [0.19, 0.48], k=57, n=209)”. Furthermore, research has shown that PC-based interventions really improve child’s skills at a faster pace, compared to traditional teaching and learning methods (Bajraktarevic, Ramic-Brkic 2017; Tanaka, Wolf, Klaiman, Koeing, Cockburn, Heirlhy, Brown, Stahl, Kaiser, Schultz 2010; Putnam, Chong 2008; Annetta, Murray, Laird, Bohr, Park 2006).

According to a number of research reports, educational games should be personalized and have an immersive storyline, as well as options, from which the player will choose further progress (Hulusic and Pistoljevic 2017; Whyte, Smyth, and Scherf 2015; Catalano, Luccini, and Mortara 2014; Kapp 2012). Immersion plays a key role because children tend to be distracted by an event in an outside environment, while their focus should be on the game and the given task. Therefore, making games fun and playful is a recommended process (Hirumi and Stapleton 2009).

De Lope et al. (2017) presented a methodology revolving around a story and thus achieving good balance between playful and serious components. Following their methodology, for all games presented in this paper *we have completed start-up, design, production and test phase*. Post-production as a last phase of their methodology concerns updates and game improvements post its publication, as such, requires additional preparation, and is not part of the research presented in this paper.

Another concern in designing educational games are poor technical skills of teachers (Bjorner and Hansen, 2010). We have therefore *included teachers in the development process of here presented games*. Teacher’s feedback was of paramount importance, ensuring also their willingness to use the created games as teaching aids.

Game Development

In this paper, we will present initial prototypes of five educational games developed within the Computer Graphics course at the Department of Computer Science, University Sarajevo School of Science and Technology. These are:

- ABC – alphabet, vocabulary and colour (Bajraktarevic and Ramic-Brkic 2017).
- Veseli park (Happy Park) - colour and particular language prepositions such as on, behind.

- Farma (The Farm) – shape matching and general knowledge about Farm animals
- Classroom - alphabet and colour-matching
- Science Lab – visualizing simple science experiments

The presented games were developed by SSST senior year students during a period of one semester (15 weeks). Students enrolled in a class were given an option to create an educational or entertaining game. The development of educational games required more effort as it included collaboration with professionals working with children (EDUS Institute). During the semester, students received feedback from the instructor on the presented work.

The games were modelled in Cinema 4D, while the game logic was added using Unity game engine. Initially all games were developed in Bosnian language with the transition to other languages left open.

A brief description of each of the games is given below:

ABC - The game intends to help children learn alphabet, and improve their verbal skills through naming of objects and colours. At the start, a child is given an option of whether they would like to learn letters or they would like to virtually go to their room, where again they are given a choice of colours and shapes (Picture 1). Alphabet is divided in 4 levels, with each new level offering more letters. Virtual 3D room provides two interaction methods. One, a child clicks on an object and is provided with feedback on the name of the selected object. The natural reaction is that a child immediately repeats the name they heard. If not, a teacher or a parent then motivates a child to repeat the name. Second, selecting the question mark in the top right corner, a child is prompted with a question such as “Find a bear”. Finding and selecting a “bear” is followed by voice recognition of a selected object. A positive feedback, a child’s voice saying “Well done” or “Hurray” follows each correct action within the game.

PICTURE 1. GAME “ABC”



Source: Own

Veseli Park (Happy Park) - The environment of a game is a playground. A child needs to walk around and collect different balls found within a park (Picture 2). The game is composed of three levels, each having tasks slightly different from the previous one, but enough to enforce children to include different methods for object recognition and to make them notice different aspects of the surrounding area. A child is asked

either to collect all balls in the playground, balls of a particular colour, or balls at a given position (e.g. balls not on the ground).

PICTURE 2. GAME “VESELI PARK”



Source: Own

Farma (The Farm) - The game was developed to help children understand the basics of a farm environment, and learn about domestic animals in a fun and interactive way. According to Bartosh (2003), environmental education engages students in learning and raising their respective test scores. This game consists of two parts, exploration and learning which connect hearing aspect to the reading aspect. Within exploration part of the game, a child can select a particular animal (cow, horse or duck) to hear its sound and discover interesting facts about them (Picture 3). During learning phase, a child is given a silhouette of a domestic animal and must match the right animal with the silhouette (Picture 4). The emphasis is on the images in order to enhance the cognitive and visual abilities of the child. In the next level, the child learns about farm products that the domestic animals give in a similar manner of silhouette matching. For this game, we have designed a fun way to score the points. The points are not numeric, but are represented as cute rabbits (Picture 5). This is done in order to improve the focus of children. The rabbits are awarded after each question. A happy rabbit is awarded for each correct answer. Consequently, a sad rabbit is awarded for each wrong answer. The rabbits are followed with appropriate background sounds for the “correct” and “wrong” award.

PICTURE 3. GAME “FARMA” – EXPLORATION PHASE



Source: Own

PICTURE 4. GAME “FARMA” – LEARNING PHASE



Source: Own

PICTURE 5. HAPPY/SAD RABBIT ILLUSTRATIONS



“Wrong” answer award



“Correct” answer award



Overall score visualization

Source: Own

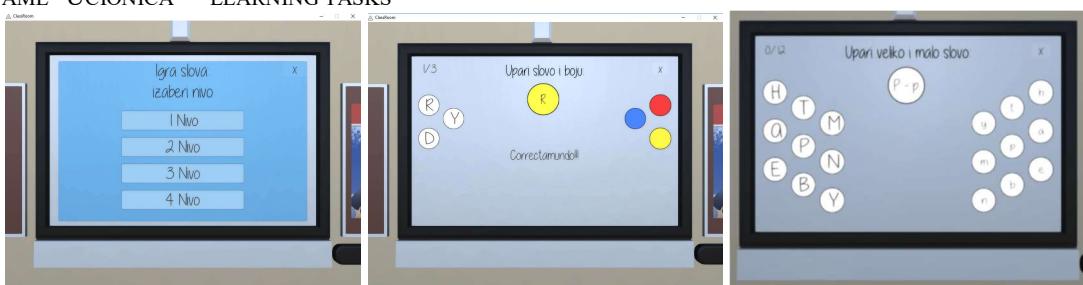
Učionica (The Classroom) - This game can be considered as an improvement of the ABC game, since its main focus is on alphabet learning. The environment is a school classroom (Picture 6). The game consists of four different levels (Picture 7). In the first three levels, the task of the player is to match a letter with the appropriate colour. The final level of the game is connection between upper case and lower case letters. A child can at any point exit the game or go back to previous list of levels. Each correct/wrong action is followed by an appropriate feedback. Each level is randomized to prevent child memorizing the correct match.

PICTURE 6. GAME “UČIONICA”



Source: Own

PICTURE 7. GAME “UČIONICA” – LEARNING TASKS



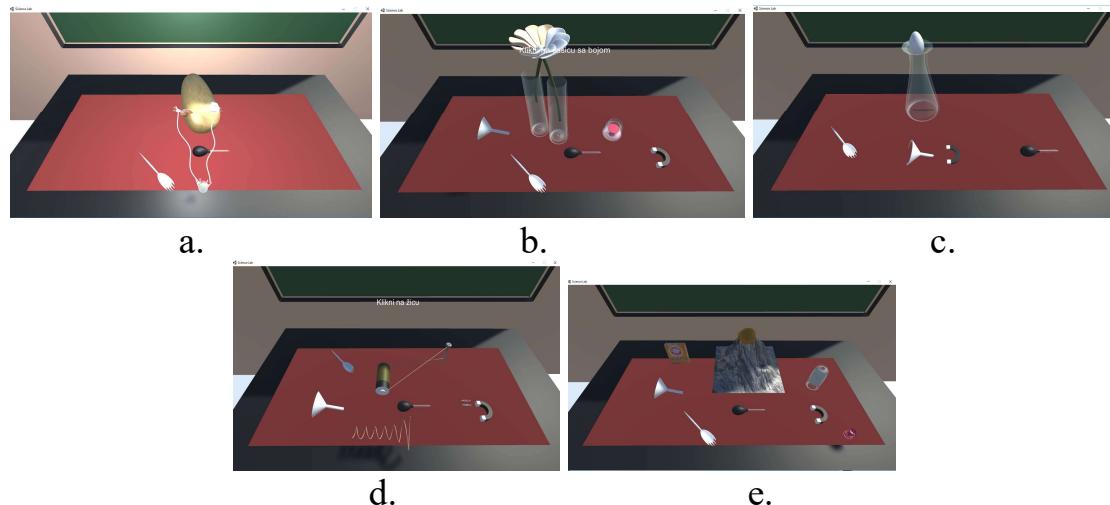
Source: Own

Science Battle - represents an innovative attempt in developing an interactive educational learning tool that gives children the opportunity to conduct different experiments in a safe environment. The game includes five experiments (Picture 8):

- a. Potato Experiment
- b. Flower Experiment
- c. Egg Experiment
- d. Nail Magnet Experiment
- e. Volcano Experiment

Having in mind the importance of visualization, children benefit from seeing how all science experiments work. This prepares them for several school-based projects, as well as provides them with ideas for science fairs and competitions. At the end of each experiment, a child can either repeat the level (experiment), go back to home screen, or play the next level. Each experiment is followed by an explanation that shows what happened in the experiment scientifically (Picture 9).

PICTURE 8. GAME “SCIENCE LAB” – DIFFERENT EXPERIMENTS



Source: Own

PICTURE 9. GAME “SCIENCE LAB”



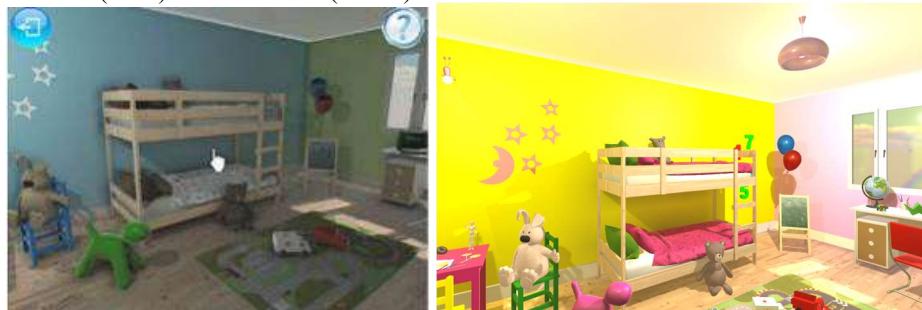
Source: Own

Discussion and conclusions

Overall children and instructors who participated in testing the games were pleased with the work presented. Each of the games has received corrective feedback to be implemented in order for the games to

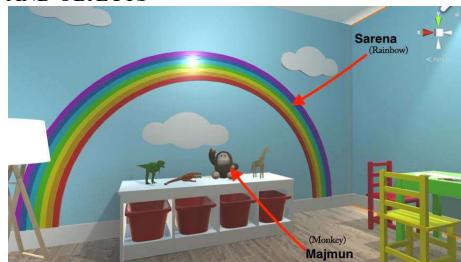
be used in the classrooms. From the games shown, the game “ABC” has already received the second iteration. A child attending the EDUS programme evaluated this game. Observing the child’s reaction to this game and, for example, the game “Veseli Park”, we concluded that the colour made a significant difference. “Veseli Park” is cheerful and composed of bright colours while the “ABC” game was composed of pale colours. Picture 10 shows a clear difference between the old and new scenes. A new group of students, working on the update of the game, used brighter colours, making the room beautiful and fun. They also modelled new objects such as Christmas tree, Lego and Playground that can be seen through the window. New sounds for colours and objects have been added. Currently, we have named all objects and colours. An example of new objects and naming is shown in Picture 11.

PICTURE 10. GAME “ABC”: OLD (LEFT) AND UPDATED (RIGHT) SCREEN



Source: Own

PICTURE 11. GAME “ABC”: NEW COLOURS AND OBJECTS



Source: Own

In conclusion, this paper focussed on explaining how games can be developed in existing higher-education curricula with the support of educational experts, without testing the games’ implementation in teaching. In countries with low and middle income, such as Bosnia and Herzegovina, there is still scepticism towards technology and its use for educational purposes. We have tried to overcome this problem by involving teachers in the research and development process.

We have received initial corrective feedback which will be used in refining the games, their learning goals and outcomes. The development process will be followed by a more detailed evaluation before games can be distributed for public use. We argue that games, as the ones presented in this paper, will be valuable resources for teachers, as well as for children and parents.

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Technology for work-based education

**POWERFUL PERSONALITY =
PERSUASIVE PRESENTATION? –
INTRODUCING AN ICT-BASED
METHODOLOGY FOR THE
EFFECTIVENESS OF PRESENTATIONS**

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Key words: presentation, video learning, soft skills, communication skills, methodology

Abstract: The genre of presentation is definitely one of the most common practices of communication, widely appearing in educational and business, public and private contexts. From the perfectly structured orations of ancient Romans and Greeks to the stunning visual presentations of our age, a good (self)presentation has always been a key to success in the hands of any communicator wishing to deliver a breath-taking speech, convey an irrefutable argument, make a powerful impact or persuade the audience on an idea, product or the speaker himself. However, the effect of any presentation depends on several factors, skills and competencies of the communicator. While, based on the impression made on the audience, it is generally easy to feel and decide whether a presentation overall was impressive or not, it seems to be a much harder task to recognize and name the specific elements and communication skills which fundamentally determine the success of the presentation. This paper intends to lay the foundations for a fresh Hungarian research attempting to zoom into the building bricks of the success of a presentation with the help of a complex methodology including ICT and video learning. Examining a number of university presentations with the method of video analysis, the aim of our research is to identify those – mainly soft – communication skills which make a presenter powerful as well as a presentation successful and examine them in correlations with the personality traits of speakers. This paper aims to give a literature overview and a close insight into the methodology of this (ICT-based) empirical research, which can serve as an optional starting point for rethinking the curriculum of any educational programme targeting the communication and presentation skills development of its learners.

Introduction

Rooted in the ancient discipline of rhetoric, there are various tools and exercises designed to support the speaker excelling an oral performance and also to deepen the meaning and understanding of oral presentations and speeches (which two basically share the same characteristics in this sense). The study of Greek rhetoric ultimately relies on decisions fuelled by the values, interests, and purposes one brings to the table and has a great impact on not just “what” to say but also on “how” to say it. However, delivering a powerful speech requires various rhetorical skills to which Aristotle refers as the “sources of proof” (basic to speech-writing and speech-giving). The above-mentioned triad of Aristotle contains three equally important factors: the *logos*, the *pathos* and the *ethos* – as he defines it in *Art of Rhetoric* (Worthington 2007).

In short, Aristotle explains rhetoric in terms of persuasion (as he recognizes that not all persuasion is of one kind), where logos outlines those cases when the orator persuades his audience by logically arguing the issue (relying on the concepts of topics, subject-specific and common premises, the enthymeme and the example, etc.). This is what we call rational argumentation.¹ Pathos has been defined as an appeal on the emotions of the audience: “The emotions are all those affections which cause men to change their opinion in regard to their judgements and are accompanied by pleasure and pain; such are anger, pity, fear, and all similar emotions and their contraries” (Aristotle, 1378a 19–22).²

¹ The rhetorical persuasion proceeds by words and thoughts, all of which must be selected and arranged in order (i. e., parts of speech) and strengthened with reasoning, examples, arguments, figures of speech, etc., so that the speaker may express himself clearly and in a suitable manner.

² Before reducing or restricting pathos to subjectively chosen decorations of thought, it is inevitable for one to consider the idea that this emotional appeal is not some kind of an extra-rational force; on the contrary, it is part of the rational process

Compared with the two other artful modes of persuasion (i.e., logos – rhetorical argument; and pathos – emotional appeal), ethos or persuasion through character – although it was not breaking the ground in Aristotle's times – is something that has a deeper meaning for us. Rhetoric is widely known to consist of persuasion and rational argument, but what lies behind this picture is a more complex and humanistic thought: "Among the artful modes of persuasion, Aristotle lists persuasion through character" (Worthington 2007, 114). Aristotle is not concerned with pre-existing reputation.

Moreover, he introduces the orator through what he says, which is to present himself as an upright person who is worthy of trust (Aristotle, 1356a 2–13). This persuasion by character outlines practical wisdom, virtue and goodwill as innate features of the speaker and expands the idea of the sources of persuasion. Ethos is responsible for making the speaker appear credible, wise, virtuous and full of goodwill which are key to influence and persuade any audience – today or 2500 years before. The persuasiveness of good character is strongly emphasized by the assertion "... moral character, so to say, constitutes the most effective means of proof" – as Aristotle describes it in his Rhetoric (Aristotle, 1356a 13).

Therefore, the process of speech-making depends on the interrelations of these three elements which will result in a strong and well-defined unity of rational thought or logic, emotional appeal and the character of the speaker (which is rather considered today as *charisma* or *talent* or as the influential skill of convincing the audience), giving rhetoric its artistic nature. While logos mostly lies in the speech itself and pathos has more to do with the audience, ethos is a humanistic feature establishing the credibility of the speaker, that is finally responsible for the "magic of rhetoric" to happen. Aristotle's art of rhetoric is fundamental to any study of classical Greek rhetoric, therefore our concept of persuasion relies on his idea as well, since the ethos (which is of highest importance in our research) can be easily found in modern settings, educational or business presentations as well.

Persuasive presentation and the powerful personality

According to Pearson's handbook of communication and public speaking, "[e]ffective public presentations are an artfully crafted combination of you, your ideas, and the ideas and opinions of others" (Pearson et al. 2011, 277) – secretly and joyfully resonating Aristotle's thought. Being convinced that rhetoric remains relevant in our times, we suggested the idea of examining the persuasive elements – strongly connected to ethos – in modern education and business-related presentations, defining the persuasive power of a speaker. Killingsworth had outlined rhetorical appeals as "efforts to overcome oppositions and divisions either by forming new solidarities, by reinforcing old ones, or by revealing distances and likenesses in order to transform attitudinal conflicts into [communal

highlighting and recognizing the involvement of thought in emotional responses. Not to mention that the possibility of misusing emotional appeal does not mean that pathos (or all types of emotional appeal) must be condemned (Worthington 2007).

forms of] action" (Killingsworth and Palmer 1992, 17). This and other definitions of the meaning of appeal is understood and widely discussed in business and management books, but a complete and detailed quantitative analysis of characteristics of persuasion is still missing.

As seen above, scholars have continued to study the importance of the speaker (who is the source of the message), highlighting that credibility is not something that solely the speaker possesses; instead, credibility is determined by the audience as well. A speaker's credibility in fact depends on the speaker, the subject being discussed, the audience and the situation. The personality characteristics of the audience members also affect their response to the message and to the speaker as a source of the message (Wood and Kallgren 1988).

Furthermore, the importance of communication skills is growing, and may be attributed to several factors: e.g., advising, persuading, instructing, interviewing, routine information exchange, public speaking, leadership, giving orders, problem-solving and listening (Di Salvo, Larsen and Seiler 1976). In order to identify the basic and effective communication skills, in our research methodology, we have compared several studies and findings (Conrad and Newberry, 2011; Christensen and Rees, 2002; Disalvo, Larsen and Seiler, 1976; Wardrobe, 2002; Dunbar, Brooks, and Kubicka-Miller, 2006; Patterson et al., 2000; Gray, 2010; Jones, 2011) of ethos-based competencies in consonance with the assumed communication skills of the speaker. As a result, our research design depends on (suggested) interrelations between personality traits and communication skills (primarily/persuasive competencies) in order to test the idea of "speakers aren't born, they're made".

Thus, following a literature review on the topic, we raised the questions: Are the above-mentioned characteristics primarily innate, rooting in the personality of the presenter or rather skills and competencies that can be trained? In other words, does the overall success of a presentation depend mostly on the personality characteristics of the presenter or there are no direct correlations between personality dimensions and the success/effectiveness of the speaker's performance? The first, in broad terms, would mean that one practically has to be born for being a really successful and effective presenter, while the second, on the contrary, would imply that practically anyone can be trained to become a successful presenter by acquiring the proper presentation skills and competencies. Our hypothesis takes a stand on the former, supposing that personality characteristics do play an important role in the success and effectiveness of presentations. Nevertheless, we believe that both possible empirical outcomes provide vital knowledge to any educational institution training students in presentation skills or any business choosing people to represent the company in various situations.

Before detailing our methodology for measuring the above-mentioned personal characteristic potential, the next chapter gives an overview about one of the most often used measurement ICT tools and another key concept of our methodology, the video-recording.

On various approaches of video learning

Learning, measuring and assessing one's performance and capacity (including rhetorical success) by and with video recordings, in order to give feedback or to enable self-assessment, can be summed up with the expression of *video learning*. Video, as a tool of learning and self-assessment as well as a mirror for soft-skill development and a smart channel of distance learning, has earned just as much importance in teaching methodology as new media tools. However, the literature represents various possible meanings of video learning, sometimes mixing it with *termini technici* like *online learning*, *video review* or *video models*.

„Due to ease of delivery, to attain new students and lower delivery costs, institutions have turned to distance education programs as cost effective growth centers. For learners, convenience of learning online has replaced many of the traditional educational environments and has given them more and greater opportunities to continue their education. Enrolment numbers support this trend as well” (Bentz 2009, 1). These outcomes, combined with the need of academic institutions and companies for reducing training costs, strengthened the importance of online learning tools both in the field of the academia and vocational trainings.

At the early era of online learning, connection dynamics proved to be the buzzword in video-based online learning environments. Understanding these dynamics „can make [learning] easier, and even enjoyable, by connecting people and bringing them closer through shared experiences such as playing a game together. A higher connectedness of people to other people, and to relevant knowledge assets, will motivate them to participate more actively and increase system usage” (Angehrn and Maxwell 2008, 29). Later, the importance of connectedness did not decrease, while other important issues (e.g., usability, effectiveness, low-cost design) were also brought into focus. Even in 2018, the technical background of online learning management systems (LMS), including video learning materials, is a crucial part of LMS development (see Bayazit and Akcapinar 2018, 15).

As the Community of Inquiry Model suggests, there are three dimensions of the dynamics of online learning environments: (1) social presence (the ability of learners to project themselves socially and emotionally, representing themselves as “real people”); (2) cognitive presence (the extent to which learners are able to construct and confirm meaning through reflection and discourse); and (3) teaching presence, the design, facilitation, and direction of cognitive social processes for realizing personally meaningful and educationally worthwhile learning outcomes (Garrison, Anderson and Archer 2000). From the perspective of the observed method, this kind of video self- and peer-assessment concentrates on the aspects of social presence (one presenting on the screen looks into an audio-visual “mirror”, thereby projecting and reflecting himself socially) and on the teaching/learning presence (assessing oneself and/or peer[s] can result in various learning experiences and recognitions, and revisits considering the behaviour, presence, speech, etc. during presentations).

Interestingly, academic resources on the development of communication skills with video-based learning tools can be found primarily in medical and pharmaceutical journals. To cite some examples, OSVE (Objective Structured Video Exam) is an assessment for lower-year medical students including a pre-recorded patient-doctor interaction video toolkit which, combined with a questionnaire, can be used in a short formal examination period in order to objectively evaluate students' performance in interactive professional communication (Humphris and Kaney 2000, 940). Secondly, video is not only used as an examination tool but also as a record for feedback: while observing first-year pharmacy students with a video self-assessment tool, “[v]ideo review resulted in an increase in the students' total scores (average score and percent of students overestimating performance) and the average score in all quartiles. Video review significantly increased the mean scores for students in the areas of communication of technical information and interpersonal communication” (Mort and Hansen 2010). Thirdly, analyses of Vorstius Kruijff, Huisman-Ebskamp, de Vos, Jansen and Slappendel (2016, 1867) show that physicians receiving a lecture about organ and tissue donation extended with video-based e-learning on communication about donation obtain a significantly higher consent rate for tissue donation compared with physicians who only receive a lecture. So, there might be some pieces of evidence that using video learning materials increase the effectiveness of communication seriously.

Regarding other fields of profession, results of Baecher, Kung, Jewkes and Rosalia (2013) indicated that the introduction of video models reduced the inflation of scores in self-evaluation and enhanced candidates' understanding of expectations for the performance assessment of teaching during early field experiences. Video as a transmedium has also been successfully used in teaching argument-building (Smith, Kiili and Kauppinen, 2016). According to a verified hypothesis of Acharya, Manohar and Wu (2017, 71) “case study videos [are] effective learning tools for students since they facilitate student learning by seeing and subsequently applying what they learn to solve problems in the real world. These focused videos [can] enhance the understanding of the underlying theoretical concepts presented in class (and in preparatory reading) and provide a context for their application”. By using a new audiovisual method combined with an observation-based survey and feedback, “active, engaged learning will enhance student experience, interests and learning” (*ibid.*).

In this paper, the concept of video learning is narrowed down to recorded presentations and other inter- or multipersonal communication activities, which serves as a learning tool to provide feedback about the presenter's performance via the evaluation of independent observers (the raters) as well as to provide individual feedback for their development in effective communication.

The methodology of using the ICT-tool of video recordings for obtaining feedback on one's communicative performance was applied by Kauffeld and Lehmann-Willenbrock (2012) as well, who video recorded team meetings at 20 medium-sized organisations in Germany, examining the communication of 92 teams in sum. More specifically, they analysed the various messages in

communication, created a typology and developed the so-called act4teams coding scheme for group interaction analysis. With this instrument, they were able to show how the frequency of certain message types in meetings correlated with team productivity and organisational success.

The above study is one of those few attempts which examined communicative effectiveness in business settings. However, during the process of reviewing the literature on the topic, we found that there is currently very little objective, evidence-based knowledge on this area because empirical research in the field is rather sparse. At the same time, it is clear that there is generally high demand for strong communication skills of job applicants among employers. In surveys conducted among employers (e.g., the NACE Annual Job Outlook Survey carried out in the United States by the National Association of Colleges and Employers), both written and spoken communication skills have been consistently listed among the most important attributes graduate applicants are expected to have. Since in our study programmes of Communication and Media Science at Corvinus University of Budapest we are training our students' communicative effectiveness as well, we made an attempt at bridging this gap partly over. Through a vibrant academia-industry partnership and academic research, and a project (EFOP-3.6.1) funded by the European Union, we have developed a video-based learning and research tool that can be used by students, teachers as well as employers and employees of small and medium enterprises for measuring and developing the communicative effectiveness of presentations.

Methodology

Following the desktop research, the empirical part of our examination started with developing our methodological tools. First of all, we made video recordings of presentations delivered by our students at the university during various courses. These video-recorded presentations are going to be assessed by a group of evaluators, evaluating the impression made by the presenter according to a specified set of criteria. In order to make up a set of criteria which embraces all aspects of what makes a presentation effective, we needed to operationalise the rather abstract and subjective concept of communicative effectiveness.

After conducting a content analysis on the available literature, we decided to build upon one of the most influential textbooks on public speaking, the 9th edition of “Public Speaking: Finding Your Voice” by Osborn, Osborn an Osborn (2012). In their work, Osborn et al. offer a theoretical framework, which breaks down the classical rhetorical concept of ethos into four basic aspects (the speaker’s perceived competence, integrity, goodwill, and dynamism), which are then further broken down into a set of specific indicators. This quantitative instrument will allow the evaluator of the video-recorded presentations to quantify the concept of ethos and measure their overall impression of a presentation.

As a next step, in order to find out whether this impression primarily depends on the personality characteristics of the presenter, we involved one of the leading models of personality research into our

examination, the Big Five personality traits model (McCrae and Costa, 1987). According to this long-standing and still leading model of human personality, the core of human personality is determined by five central traits: openness, conscientiousness, extraversion, agreeableness and neuroticism.

In order to test our hypothesis and find out whether there are correlations between these personality dimensions and the aspects of ethos, we needed to collect data about the personality characteristics of the presenters. For this reason, we developed the Hungarian adaptation of an instrument published by Maples, Guan, Carter and Miller (2014), which is a personal inventory based on a freeware collection of personality items, the International Personality Item Pool. We asked each of our presenters to fill in this questionnaire. Analysing their answers (which reveal their personality traits) and comparing them with the effect of their presentations (as assessed by the evaluators), i.e., testing our hypotheses about the correlations between the two, will show us whether personality traits play an important role in the success of a presentation.

If we manage to find these correlations, the results will suggest that, in order to deliver a successful presentation, having the right personality characteristics may be just as essential (or possibly even more important) than developing one's presentation skills. Thus, anyone becoming a participant of this video-based research instrument can receive valuable personal feedback and knowledge about their own perceived ethos, presentation skills as well as the effect and impression they make on the audience. Furthermore, the methodology of this study provides useful feedback for the heads and instructors of educational institutions offering trainings on presentation skills as well as employers and leaders of companies frequently selecting employees to represent the company with various presentations.

Conclusion

This paper presented the background and the methodology of a fresh Hungarian research identifying ethos-based communication skills in correlation with personality traits of speakers. The aim of the ongoing research is, in broad terms, to discover what makes a presenter powerful and a presentation successful. Since the concept of ethos roots in the ancient study of rhetoric, the article started with an introduction into this discipline by revisiting the fundamental skills and competencies of oral presentations and interpreting the ancient concept of ethos with a fresh look on its role in today's presentations and presenters' charismatic performances. The presentation of the (rhetorical) idea of persuasion, which is key to any speech or presentation, was followed by a brief review of literature and research on scientific approaches involving video-analysis as a method of learning. This provided background for the empirical research aiming at operationalizing the rhetorical idea of ethos and identifying the success factors of presentations with the help of ICT. Finally, the article presented the methodology which was developed for examining the research question introduced above, and which is currently in the phase of data collection. The expected results of this empirical research will give an

answer to the question whether personality characteristics play an important role in the success and effectiveness of presentations. However, they will hopefully not only provide valuable knowledge on the success of the communication of the individual, but they will also be able to serve as a starting point for generating discussions on rethinking the curriculum and the effectiveness of educational programmes as well as business trainings offering the development of presentation skills.

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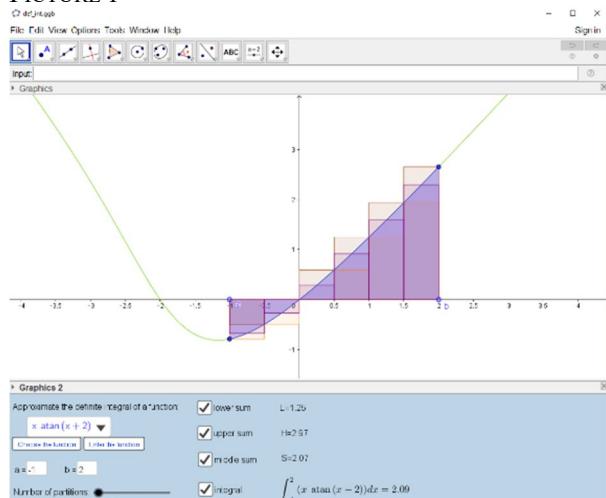
Key words: numerical integration, GeoGebra, interactive tools, education.

Abstract: The aim of the paper is to present our approach for education of mathematics based on the usage of interactive educational tools and materials. In the paper, some tools for teaching numerical integration will be described. The topic of the numerical integration is discussed during the courses of Numerical Mathematics. The students of a technical university must be able to compute the typical examples but also they need to understand the principle of using numerical methods, to use them in a correct way to solve practical and unusual problems that can be encountered in technical subjects or during the elaboration of bachelor or diploma theses. In lessons, we use Matlab for numerical examples computation and for programming of numerical methods. For a better understanding of methods principle and for visualizations, we prepared the set of GeoGebra applets which are accessible on the websites where students and teachers have them for usage. Students of our University have the Numerical Mathematics course in the sixth semester of bachelor study. The problem of the sixth semester is that it is short and takes only nine weeks. For this reason, we prepared for our students a set of the dynamical tools designed for the problems studied in the courses of Numerical Mathematics. The interactive materials are suitable for self-study and they can be used to better understand the discussed subjects. From a didactical point of view, the visualization and interactivity is a way how to achieve a better understanding. The GeoGebra software was used for a development of interactive tools. The GeoGebra is open source dynamical mathematical software suitable for all levels of education.

Introduction

In this paper we want to present our approach to numerical integration teaching. The authors teach the mathematics at the Faculty of Mechanical Engineering on VSB — Technical University of Ostrava. Our students study a definite integral and its application in the second semester. A basic concept of definite integral is introduced as the Riemann integral. Unfortunately, this definition is not easy to be understood for many students. That's why we explain the term of the definite integral by calculation of the area under the curve formalized by using the Riemann sums and their geometrical interpretation. It is important for students to understand the concept of the definite integral defined by the limit of Riemann sums. For visualization and explanation of solved problems we use dynamic applets in GeoGebra (Picture 1).

PICTURE 1



Source: Own

GeoGebra was created by Markus Hohenwarter in 2001. GeoGebra is the dynamic mathematics software designed for teaching and learning mathematics in secondary schools and college level. The software combines an easy usage of dynamic geometry software with certain features of a computer algebra system and therefore allows for bridging the gap between the mathematical disciplines of geometry, algebra, and even calculus (Hohenwarter and Preiner 2008). GeoGebra is the open source software and is freely available at www.geogebra.org.

When working on their bachelor thesis many students solve problems or tasks using some numerical method. The integration is frequently used when solving problems quantities in engineering, differential equations, etc. (Gilat and Subramaniam 2014) If the integrand is a mathematical expression for which the value of the definite integral can be found easily than they can determinate this value analytically. But if the analytical approach is difficult or impossible, or if the integrand is given only by the set of discrete points (tabulated data) than it is necessary to use a numerical approach. Our students study the subject Numerical methods in the sixth semester of the bachelor studies.

Numerical Integration – Simple Rules

In the section Numerical Integration which is one of chapters of the subject Numerical Methods we start with the motivation problem based on students' knowledge gathered in their previous studies. The solution of the motivation problem is the real value of the definite integral that represents the area under the graph of the function $f(x)$ between the lines $x = a$ and $x = b$. So, the goal is to evaluate the definite integral

$$I = \int_a^b f(x) dx.$$

The students know how to compute the antiderivative $F(x)$ the function $f(x)$ in special cases but in many other cases it is too difficult or even impossible. We show them the numerical approach based on using the Newton-Cotes integration formulas (Kučera and Morávková 2016). The students know that one of the simplest function to integrate is a polynomial function. We use polynomial interpolation to approximate the function: $f(x) \approx p_n(x)$. We derive the integration formulas based on the integration of the polynomial function

$$I = \int_a^b f(x) dx \approx \int_a^b p_n(x) dx.$$

We assume that values of the function $f(x)$ are given at $n + 1$ points in the interval (a, b) . We can write the interpolating polynomial of degree less or equal to n in the Lagrange form

$$p_n = \sum_{i=0}^n f(x_i) \varphi_i(x),$$

$$\varphi_i(x) = \prod_{j=0, j \neq i}^n \frac{x - x_j}{x_i - x_j}.$$

We therefore have

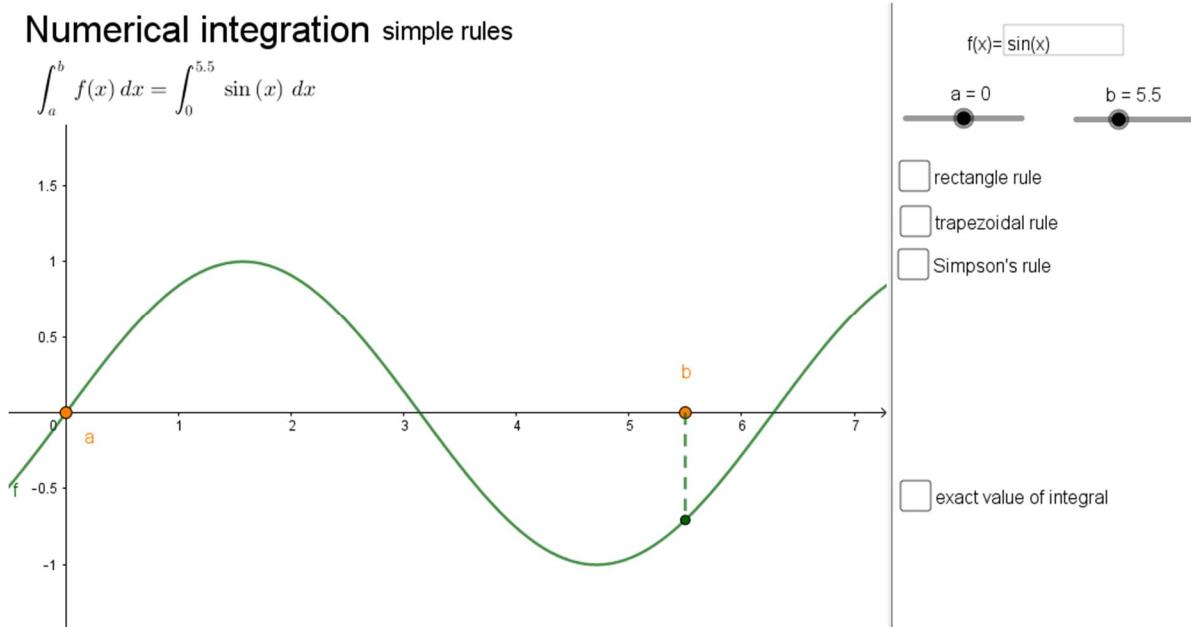
$$I = \int_a^b f(x) dx \approx \int_a^b p_n(x) dx = \sum_{i=0}^n f(x_i) \omega_i,$$

where the weight coefficients ω_i is determined by

$$\omega_i = \int_a^b \varphi_i(x) dx.$$

For better understanding of the topic we use the GeoGebra applet to demonstrate the derivation of three basic formulas (Picture 2).

PICTURE 2 SCREENSHOT OF APPLET – SIMPLE RULE FOR NUMERICAL INTEGRATION



Source: Own

For $n = 0$ the function is approximated by the constant polynomial in one point $x_0 = \frac{a+b}{2}$. Then we integrate the constant function and we get

$$\int_a^b p_0(x) dx = (b-a)f\left(\frac{a+b}{2}\right) \approx I_{rec}.$$

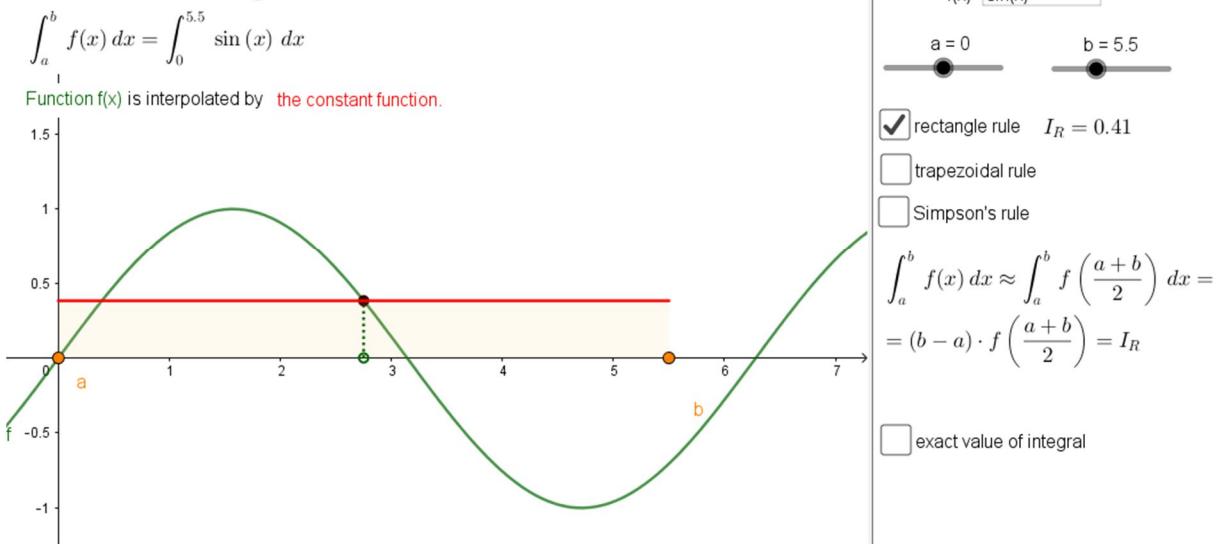
The rule above is known as the rectangle (midpoint) rule and is very clear for students. They have met this approach in the previous studies and it is easy to be understood. The advantage of a lecture with dynamical applet (Picture 3) is the fact that students can immediately observe that this approach is not too good - the error of the approximate solution (i.e. the difference from the exact solution) is too large. So we ask them if it is better to use the polynomial of the higher degree. They try to get $n = 1$

and we use the linear polynomial interpolating in two points $x_0 = a, x_1 = b$. Now we integrate the linear function and we get

$$\int_a^b p_1(x) dx = \frac{b-a}{2} (f(a) + f(b)) \approx I_{\text{tra}}$$

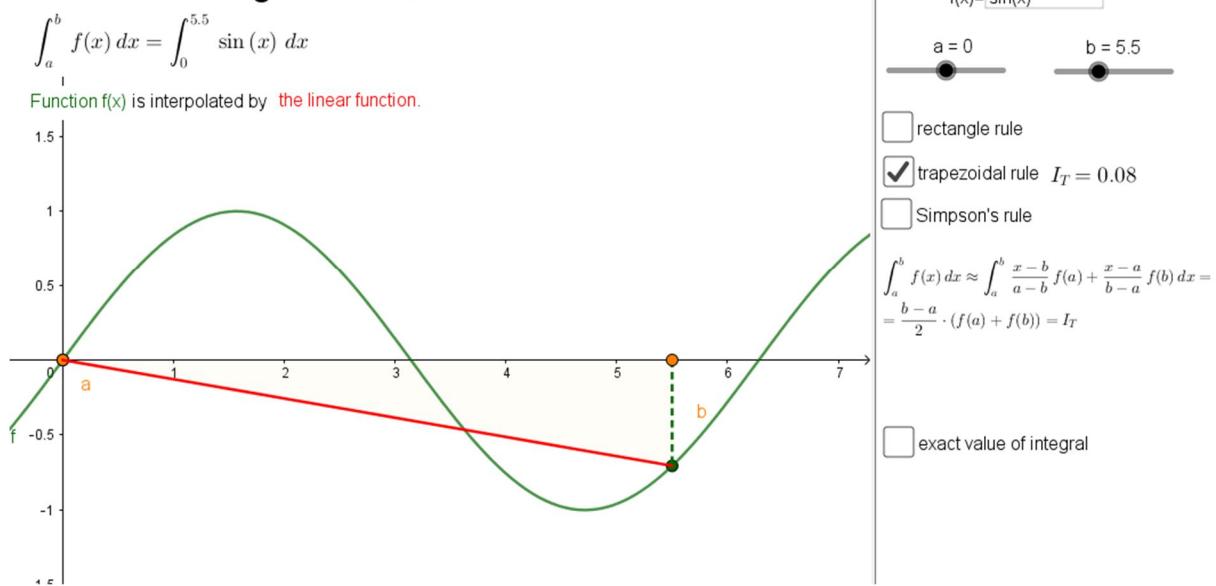
This rule is called the trapezoidal rule. We use straight lines to model the curve and students can observe that it is considerable improvement in comparison with using rectangles because the error is much less. This method is not too difficult for students because they know how to evaluate the area of a trapezoid (Picture 4).

Numerical integration simple rules



PICTURE 4 SCREENSHOT OF APPLET - SIMPLE TRAPEZOIDAL RULE

Numerical integration simple rules



Source: Own

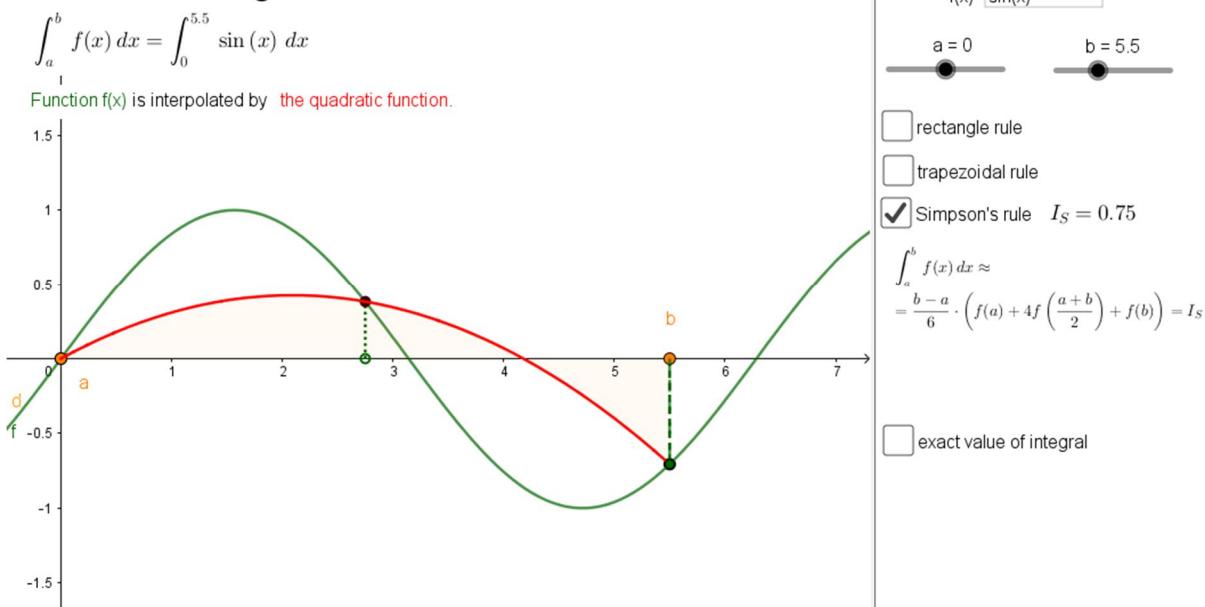
A problem occurs when we want to interpolate the function over the interval by the quadratic polynomial ($n = 2$). If the students try to draw the graph on the blackboard they have problem to determine the right position and the shape of the parabola graph for three given points. The GeoGebra tool is very helpful for a visualization of this problem. Students can try by themselves to approximate the function by the parabola. In this moment we devise the Simpson's rule that uses the quadratic polynomial interpolating of the function $f(x)$ in three points $x_0 = a, x_1 = \frac{b+a}{2}, x_2 = b$. We integrate the quadratic function and we get

$$\int_a^b p_2(x) dx = \frac{b-a}{6} \left(f(a) + 4f\left(\frac{a+b}{2}\right) + f(b) \right) \approx I_{\text{Sim}}.$$

In GeoGebra applet (Picture 5) it is possible to change a function, a rule and an interval. Student can see the area, the relevant formula and the comparison with the exact solution. Visualizing how the three mentioned methods approximate the integral over the interval illustrates why Simpson's rule is typically more accurate than the trapezoidal rule and the rectangle rule. Students can observe that the approximation given by the Simpson's rule is much more close to the actual definite integral than the approximation given by the trapezoidal rule. They can change the used rule or the integrated function and can see how this changes influence the difference from the exact result. The following question is how to get lower this difference. The students have an idea that the number of the dividing points can be increased and instead of the simple rule use the composite versions of the low order Newton-Cotes rules.

PICTURE 5 SCREENSHOT OF APPLET - SIMPLE SIMPSON'S RULE

Numerical integration simple rules



Source: Own

Composite methods

The composite rules divide the integration interval into n subintervals and apply the simple rule in each one of them. For the Simpson's rule the whole interval has to be divided into an even number of subintervals. The integral over the whole interval can be written as the sum of the integrals over couples of adjacent subintervals. The composite rule corresponds to exact integration of piecewise polynomials (Picture 6). The formulas can be found in Gilat, A. and Subramaniam, V. 2014.

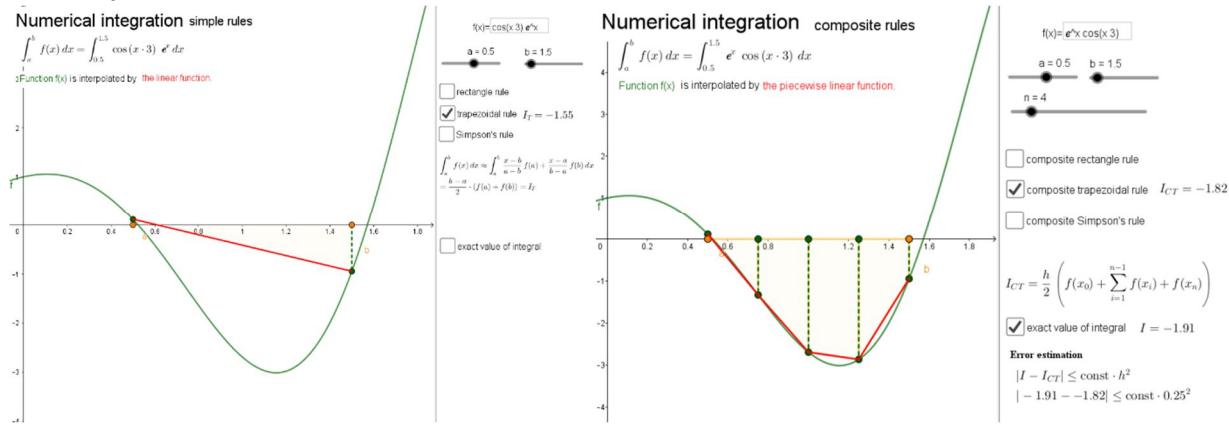
We use both of the applets (simple and composite rule) to compare that the composite rule is more accurate than the simple one.

Task for students: compare the trapezoidal rule (simple and composite) for the following integral

$$\int_{\frac{1}{2}}^{\frac{3}{2}} e^x \cos 3x \, dx.$$

As the length of the interval increases, the trapezoidal rule becomes less accurate. Since we calculate over the short interval, the difference in accuracy between the composite and simple trapezoidal rule is not as considerable as it would be over some longer interval.

PICTURE 6 Screenshot of applet - Comparison of simple and composite trapezoidal rule



Accuracy of methods

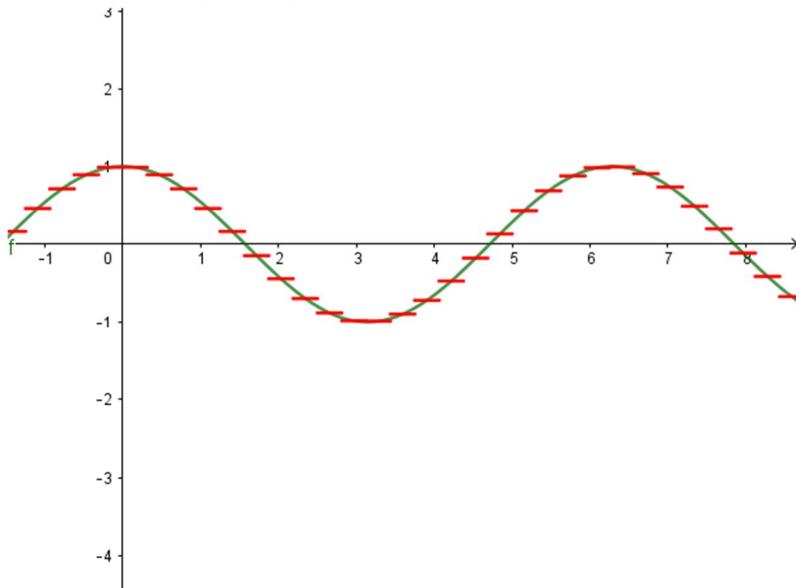
The composite methods for given n was shown in the previous chapter. We often need to calculate the value of the integral with the given accuracy. The next applet (Picture 7) is not effective only for the demonstration and the explanation of the methods but it can be also used for the numerical calculation with the required stopping criterion. In the applet we can define the integrated function, the upper and lower limits, the initial value of n and the computation rule. The advantage of GeoGebra is the possibility of dynamical (for increasing value of n) writing of the results to the table. The students can immediately observe the difference between two last values of the integral. This difference does not represent the error of the method but it is used as the stopping criterion.

PICTURE 7 Screenshot of applet - computation by rectangle rule with given accuracy

Numerical integration calculation with given accuracy

$$\int_a^b f(x) dx = \int_{-5}^{15} \cos(x) dx$$

Function $f(x)$ is interpolated by the piecewise constant function.



$f(x) = \cos(x)$			
$a = -5$	$b = 15$		
$k = 6$	$n = 64$		
<input checked="" type="checkbox"/> rectangle rule	<input type="checkbox"/> trapezoidal rule		
<input type="checkbox"/> Simpson's rule			
k	n	I_n	$ I_n - I_{n/2} $
1	2	1.6093	---
2	4	-1.2893	2.8986
3	8	-0.4065	0.8827
4	16	-0.3297	0.0769
5	32	-0.3137	0.016
6	64	-0.3099	0.0038
?	?	?	?
?	?	?	?
?	?	?	?
?	?	?	?

Source: Own

GeoGebra applets – task as a game

The first applet for the simple formulas can be used as a tool for better understanding of the numerical integration. The teacher defines some problems for his students. They try to solve these using various set up of the objects in the applet. Examples of some tasks:

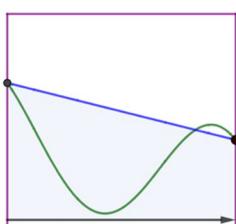
- a) What function can be exactly approximated using the rectangle rule?
- b) What function can be exactly approximated using the trapezoidal rule?
- c) What function can be exactly approximated using the Simpson's rule?
- d) Find some function and interval for which the approximation given by the trapezoidal rule has better accuracy of the estimate than the approximation given by the Simson's rule.
- e) Approximate the integral of the function $f(x) = x^2$ over the interval $\langle 0, 3 \rangle$ using the Simpson's rule and the trapezoidal rule.
- f) Approximate the integral $\int_1^2 e^{-x^2/2} dx$ using the simple trapezoidal rule if the result accuracy is given to 5 decimal places.

The students can examine their knowledge of the topic by several auto-tests that are created in GeoGebra too and that use its interactivity as well as its possibilities of the graphical visualization (Picture 8).

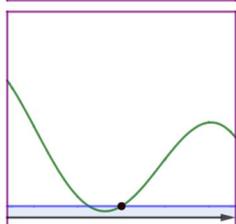
PICTURE 8 SCREENSHOT OF APPLET - AUTO-TEST IN GEOGEBRA

Numerical integration test

Drag and drop the red points with text into the corresponding pictures.

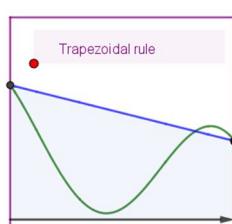


- Rectangle rule
- Trapezoidal rule
- Simpson's rule

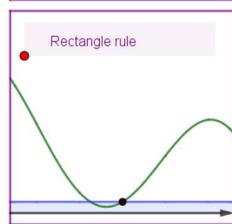


Numerical integration test

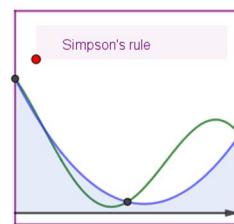
Drag and drop the red points with text into the corresponding pictures.



Great!



Rectangle rule



Simpson's rule

Source: Own

Conclusion

Teaching with dynamic applets is very efficient and we find it to be more fun for students. The teacher can use applets in lectures and tutorials and gain the time to discuss more examples and topics. This is especially very important for students of combined study program. One of advantage of GeoGebra software is that students don't need to know anything about using of GeoGebra to work with applets and they don't have to install GeoGebra on their computers. Since dynamic worksheets can also be provided online, the students can use them in lessons as well as at home. It is possible to create dynamic worksheets consisting of dynamic tools as well as of questions and tasks for students. This way of teaching can contribute to better understanding of mathematical concepts by allowing for interactive manipulations of the provided dynamic tool. The usage of GeoGebra applets can foster active learning. All applets mentioned in this paper can be found in the GeoGebra book (Morávková 2018).

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Key words: Corporate communication, Education and training, Human resources, Non-financial reporting.

Abstract: Education and training of human resources (HR) via formal or informal education seems to be an inevitable attribute of companies' existence in the 21st century where the speed of changes and new developments are enormous and fast. For companies and individuals to stay competitive, it is necessary to undergo a cyclical process of training and learning persistently. Especially for individuals, an open course at universities to receive novel information could be an option. Nevertheless, organizations shall definitely play their part in educating their human capital and deepening their HR's knowledge and skills, too. This article first offers theoretical information on the topic, where the literature review is compiled. Further, qualitative research is brought forward utilizing the content analysis. In specific, the author analyzes documents (sustainability/CSR corporate reports of 2015) published through the electronic platform (internet and corporate websites) in order to find out about disclosure of responsible behavior of companies towards their employees where educating human capital in organizations and the spread of information about this type of activities towards general public as well as other stakeholders are in the spotlight. The quantitative analysis then follows, looking at the research sample made up by 100 companies from the Czech Top 100 firms for the year 2015. The objective is to find out what percentage of companies educate their HR and report about these activities as well as in what form the general public and other interest groups can receive this type of information. Finally, it can be revealed whether the financial performance of companies is in correlation with the above mentioned nonfinancial disclosure.

Introduction

Employees are key assets of organizations. Education and training of these assets - human resources (HR) - via formal or informal education seems to be an inevitable attribute of companies' existence in the 21st century where the speed of changes and new developments are enormous and fast.

Pasban and Nojedeh (2016) see contribution of human capital for organizations mainly in the following areas: *knowledge and skills, creativity and innovation, added value* and *competitive advantage*. Chadwick (2017) mentions two processes determining the value and cost of human capital, which are: the creation of human capital value and the safeguarding of this value. Companies also have to maintain access to a skilled workforce in order to ensure their sustainability. (Lortie, Nadeau and Vezeau 2016) Leading human capital nowadays requires to use a modern concept of organizational management where emphasis is placed on transfer and storage of knowledge within and outside an organization; further, ethical behavior, openness of communication, transparency of activities and functioning with respect to the community and the environment are other important traits of companies at the beginning of the 21st century. Contemporary society is often called a *knowledge-based society*, and companies that care for knowledge, its deepening and focus on innovation are known as *knowledge-based organizations*. Also, the term *learning organization* has been enrooted in the language of institutions reflecting the trend of the importance in acquiring knowledge and skills due to the technological progress and information boom.

Organizations trying to keep up with the trend are called *sustainable* or having *good corporate citizenship*. Their activities might also be called *socially responsible*. Dimopoulos and Wagner (2016) highlight the important role of management and CEO of the company in establishing proactive corporate

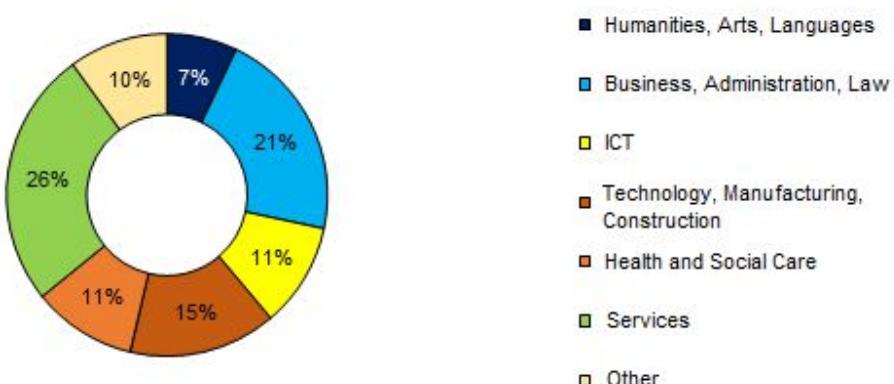
social responsibility. Newly, these practices are also called *sustainable corporate governance* (SCG). Nevertheless, based on Ehnert (2009) inclining to the paradox theory, managers often have to deal with a contradiction between the economic and social spheres: they are under pressure from the environment emphasizing the need to fulfill social goals (eg. support and education of employees) while at the same time they are pressed for higher savings and hence lower spending on social needs of their employees including educational activities.

No matter how difficult the situation in companies is, it is crucial to keep high-quality employees. In order to do so, it is important to provide them with background factors and workplace relationships supported by ethical management practices. Management should act with transparency and ensure equitable approach to employees; it shall also provide appropriate incentive programs and health-enhancing work environment. Staff needs to be further considered include: an inspirational work environment, motivating financial rewards, work-life balance, recognition of work, empowerment, a delegation of authority and working interpersonal relations. Opportunities for further education and overall personal development are also very important.

For companies and individuals to stay competitive, it is necessary to undergo a cyclical process of training and learning persistently. Especially for individuals, formal university education leading to a degree as well as open courses at universities for receiving novel information could be an option. Nevertheless, organizations through planning, organizing and financing shall definitely play their part in educational activities of their human capital and deepening their HR's knowledge and skills, too.

Based on the Czech Statistical Office data collected in 2016, almost half of Czech adults take part in lifelong education, mostly in job-related courses. 46% of Czechs aged 25-64 are engaged in any form of further education where the non-formal or informal education are the most frequent forms of the out-of-school education including various courses and training. (See Graph 1)

GRAPH 1. STRUCTURE OF WORK-ORIENTED NON-FORMAL EDUCATION BY SUBJECTS OF EDUCATION IN CR



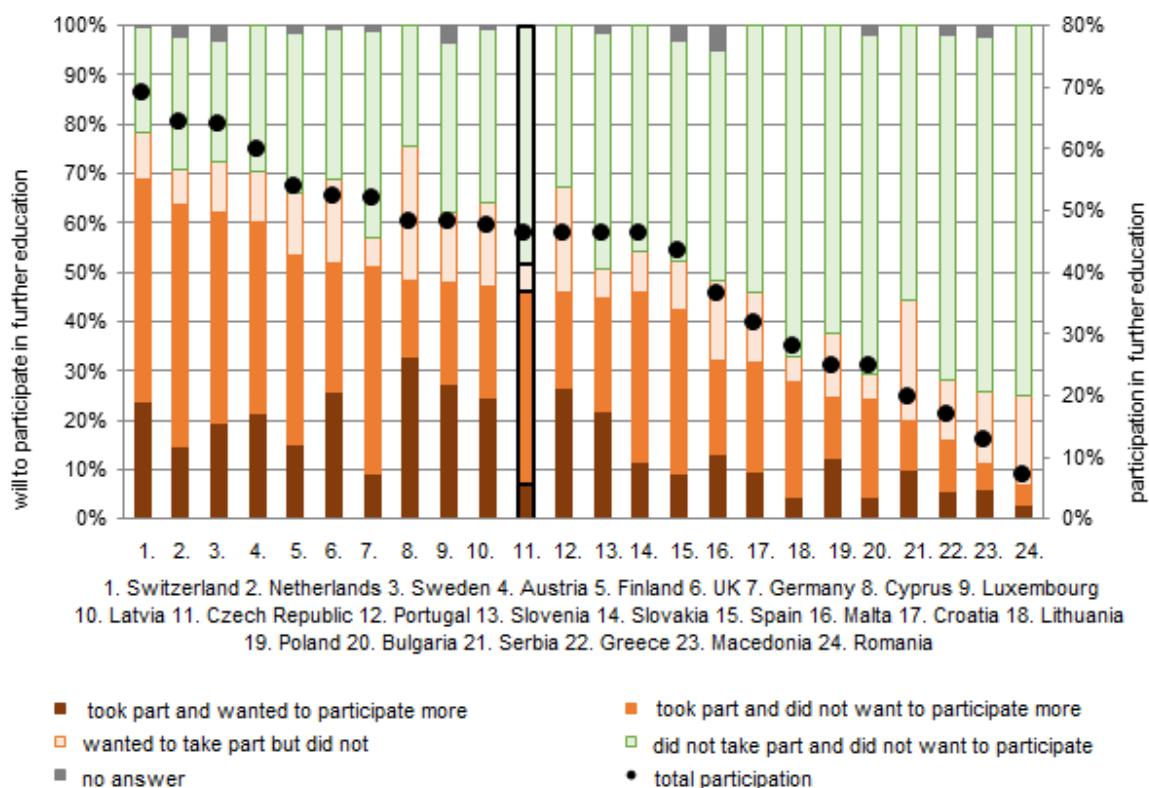
Source: ČSÚ, 2018 based on AES 2016, EUROSTAT. Translated by authors

In the vast majority of cases, workers are financially supported by their employers and are given training which frequently takes place during working hours. Optional courses and training are provided to more than half of the surveyed employees by their employers where this opportunity is offered more often by large companies. The most frequently educated workers are people in finance and insurance. On the contrary, the lowest amount of persons involved in further education are in the sectors of catering and hospitality services. (ČSÚ website, 2018)

The vast majority of non-formal education activities (86% women, 91% men) is related to working life and is motivated by better qualifications for the profession, increasing work performance or improving the position on the labor market. In the monitored age group of 18-69, 38% of men participated in some labor-oriented education, but only 29% of women. Women, on the other hand, were more often involved in out-of-work, e.g. privately-oriented education (13% of women compared to 6% of men). (ČSÚ website, 2018)

An interesting comparison can be further made based on the Eurostat *Adult Education Survey* from 2016 about involvement in education and willingness to engage in further education in the 25-62 age gap. (See Graph 2). Czech Republic placed 11th among the 24 involved countries with Switzerland as the leader and Romania being on last place. (ČSÚ, 2018)

GRAPH 2. INVOLVEMENT IN EDUCATION AND WILLINGNESS TO (FURTHER) ENGAGE IN EDUCATION (25-64 YEARS) - INTERNATIONAL COMPARISON



Source: ČSÚ, 2018 based on AES 2016, EUROSTAT. Translated by authors

In a view of the increasing pressure on sustainability reporting and transparency of information, firms have gradually responded to this situation voluntarily by disclosing information on the diverse areas of their responsible behavior including education and training. Various formats can be used including: a separate CSR/ sustainability report, integrated report or a CSR/sustainability section in an annual report.

The two last mentioned issues create a subject scope of the paper: *HR education and training* and *non-financial reporting* towards all stakeholders. Thus, the research questions are as follows:

RQ1: Do companies from the Top Czech 100 inform about their socially responsible activities including education of their employees in their non-financial/ CSR/ sustainability reports?

RQ2: Is there correlation between the social reporting (inclusive of HR education and training reporting) and financial performance of the companies?

Research method

When compiling the literature review for the introductory section, the most renowned databases were searched and the authors looked for studies with the intention to find the newest and the most relevant articles and data. A three-phase model was followed where the literature research is sequenced into three steps: an exploration, an interpretation and a communication phase.

This paper first offered theoretical information on the topic in its introductory section, where the literature review was introduced. Also, the opening part was compiled based on the websites of the Czech Statistical Office and Eurostat. These had been searched in order to get the newest data concerning adult education in the Czech Republic and the European Union.

In an initial phase of the own research, qualitative research was brought forward utilizing the content analysis method. In specific, the authors analyzed documents (sustainability/ CSR corporate reports of 2015) which had been published through the electronic platform (internet and corporate websites) of one hundred companies listed among the *Czech Top 100* - financially most successful firms.

The objective of the paper is to find out whether responsible behavior of companies towards their employees is revealed in non-financial reporting where educating human capital in organizations and the spread of information about this type of activities towards general public as well as other stakeholders are in the spotlight.

The quantitative analysis then follows, looking at the research sample made up by these 100 companies. The objective is to find out what percentage of companies discloses about educating their HR in reports.

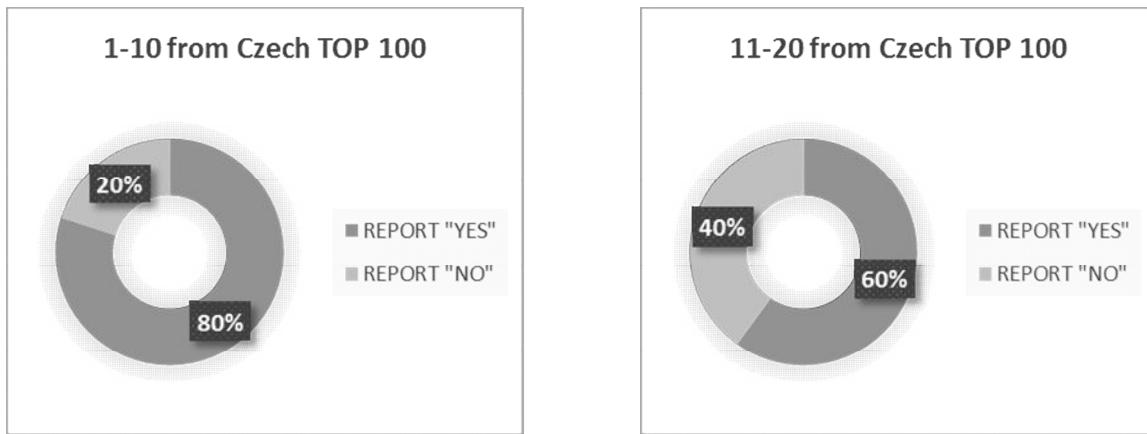
Finally, it can be revealed whether the financial performance of companies is in correlation with the above mentioned non-financial disclosure.

Research

The authors used a content analysis method in their research in order to find the answer to the following research question. *RQ1: Do the companies inform about their socially responsible activities including education of their employees in their nonfinancial/ CSR/ sustainability reports?*

The research sample was made up by 100 companies from the *Czech Top 100*. *Czech Top 100* is the ranking of the hundred most successful companies in the Czech Republic. These companies were examined in terms of their possible non-financial reporting including section about education and training.

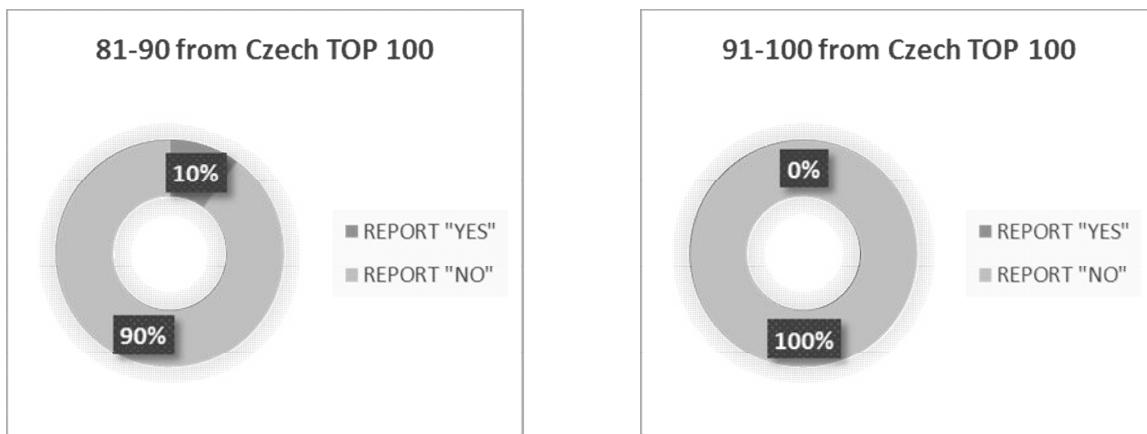
GRAPH 3. COMPANIES 1-10 AND 11-20 FROM THE CZECH TOP 100 AND THEIR REPORTING AND NON-REPORTING SCORES ABOUT SUSTAINABLE ACTIVITIES, TRAINING AND EDUCATION



Source: Own

It was found that altogether in 2015, 35 % of companies prepared their sustainability/ CSR reports having a section informing about educational activities and training. Graph 3 shows that 80% among the first ten companies and 60% among the second ten firms have prepared their non-financial reports. (See Graph 3)

GRAPH 4. COMPANIES 81-90 AND 91-100 FROM THE CZECH TOP 100 AND THEIR REPORTING AND NON-REPORTING SCORES ABOUT SUSTAINABLE ACTIVITIES, TRAINING AND EDUCATION



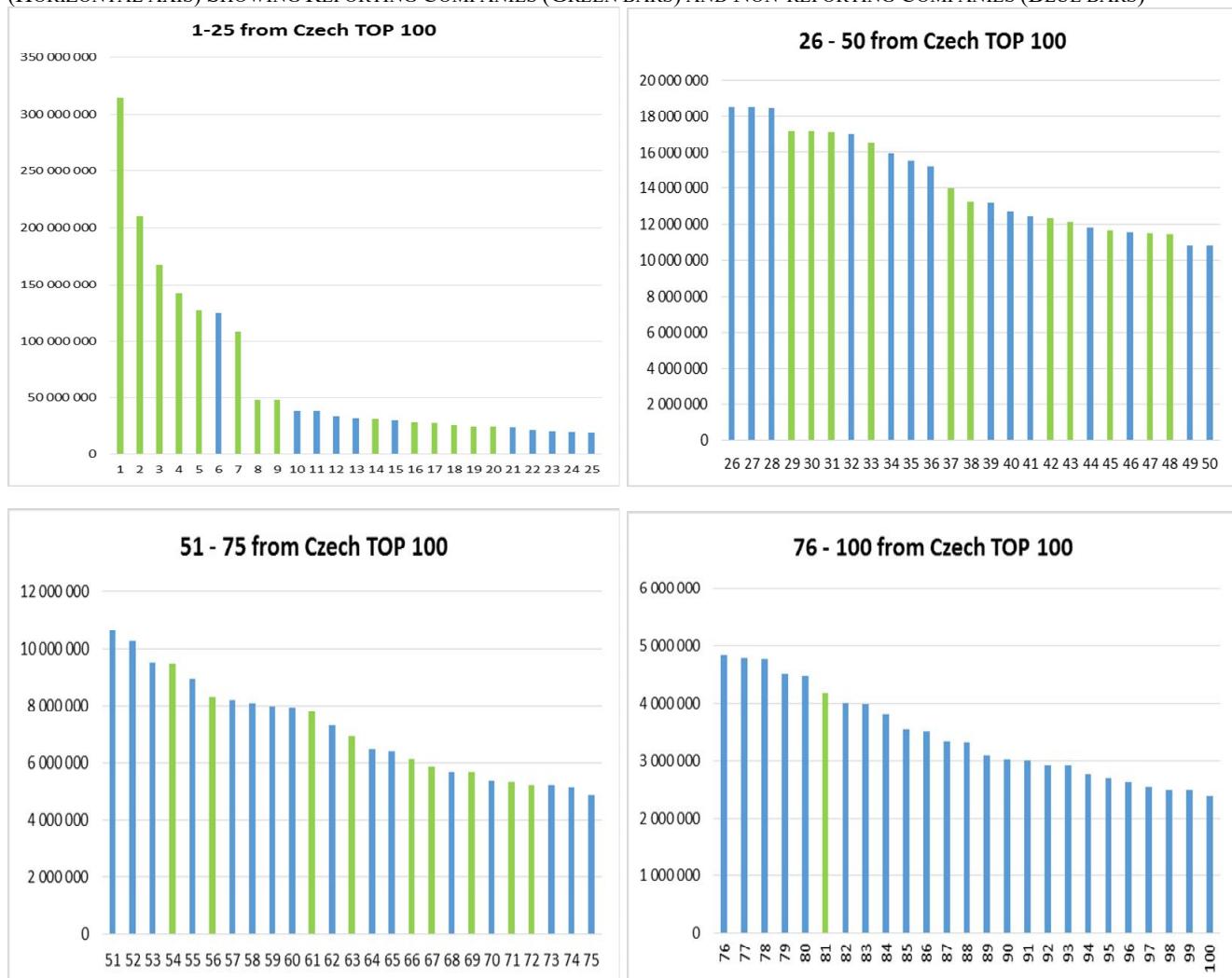
Source: Own

In Graph 3, the first twenty companies from the list of *Czech Top 100* were looked at. Further, the authors prepared graphs for the last twenty firms. It was discovered, that only 1% of organizations on positions between the 81st and 90th reported while none of the companies which ranked among the last ten from *Czech Top 100* had this document with a section about education prepared. (See Graph 4) Thus, an answer to the RQ1 based on all rated firms is that more than one third of companies from the 2015 *Czech Top 100* informed about their responsible activities and education and training in an on-line document.

Further, an answer to the RQ2 was looked for. *RQ2: Is there correlation between the social reporting (inclusive of HR education and training reporting) and financial performance of the companies?*

The below bar charts (See Graph 5) were elaborated to distinguish the companies from the Czech Top 100 in 2015 which reported (green bars) and the non-reporting ones (blue bars). The horizontal axis marks the companies' ranking (1-100) and the vertical axis shows their sales with the highest at 315 billion CZK.

GRAPH 5. CZECH TOP 100 COMPANIES IN 2015 – THEIR SALES IN THOUSANDS CZK (VERTICAL AXIS) AND POSITIONS 1-100 (HORIZONTAL AXIS) SHOWING REPORTING COMPANIES (GREEN BARS) AND NON-REPORTING COMPANIES (BLUE BARS)



Source: Own. Note: Vertical axis showing sales in K CZK (the highest 315 billion CZK, the lowest 2,4 billion CZK)

Czech Top 100 organizations are ranked by annual sales of companies in the given year. The first 20 companies based on their sales in 2015 were: Škoda Auto a.s. (at the first place with the sales standing at 315 billion Czech Crowns), ČEZ a.s., AGROFERT a.s., RWE Supply & Trading CZ a.s., FOXCONN CZ s.r.o., Energetický průmyslový holding a.s., UNIPETROL a.s., BOSCH Group ČR, AHOLD Czech Republic a.s. and České dráhy a.s., O2 Czech Republic a.s., Lidl Česká republika v.o.s., METROSTAV a.s., SIEMENS s.r.o., GECO a.s., MAKRO Cash & Carry ČR s.r.o., VEOLIA Česká republika a.s., PORSCHE Česká republika a.s., OKD a.s., T-Mobile Czech Republic a.s. (at the 20th place with its sales standing at 24 billion Czech Crowns). On average, among those companies 70 per cent prepare non-financial report. As stated above, the lower the companies in the ranking, the lower the percentage of sustainability and education reporting. The last 10 companies had on average 0% of reporting.

There is a visible correlation between the corporate sustainability reporting (including information about education and training) and financial performance. The higher the companies are ranked based on the amount of money earned, the bigger the percentage of reporting companies is. Therefore, an answer to RQ2 is: in this research, there is an evidence of positive correlation between the financial performance of a company and its sustainability & education reporting.

Conclusion

Human resources are considered key assets of organizations and education and training of these assets are inevitable for organizations in the 21st century. Contribution of human capital for organizations is discussed by many authors. The literature frequently mentions their knowledge and skills, creativity, innovation and creation of human capital value. These shall definitely be supported and looked after well by corporate HR policies. In general, overall ethical and transparent approach of management is desirable.

Companies reflecting the trend of the importance in acquiring and nurturing knowledge and those interested in innovations, storing and sharing the data, can be called *learning organizations*. In order to stay competitive, companies as well as individuals take part in training and learning persistently. Especially for individuals, formal university education to get a degree or open courses at universities could be an option. However, companies through planning, organizing and financing play a major part in non-formal educational activities of their human capital and deepening knowledge and skills of their employees.

Czech Statistical Office informed that in 2016 46% of Czechs aged 25-64 were engaged in any form of further education which was most often financially supported by their employer. The vast majority of non-formal educational activities was related to working life and was motivated by better qualifications for the profession, increasing work performance or improving the position on the labor market. A comparison was

also made based on the Eurostat *Adult Education Survey* from 2016 focusing on further education in the 25-62 age gap, where CR placed 11th among the 24 involved countries.

Responsible companies which support their employees considering social aspect being very important usually inform about their activities in a form of a sustainability/ CSR report usually published on-line. Two areas created the scope of this research paper: *corporate education and its reporting*.

The paper first offered literature review inclusive of some statistical data, then own research was introduced by the authors. The research sample was represented by companies doing business in the Czech Republic which ranked the best from the whole population of firms based on their annual sales. The list is called *Czech Top 100* and the companies on the list served as the research sample. The qualitative analysis was undergone first utilizing the method of content analysis of the CSR/ sustainability reports of these companies. Then quantitative analyses took place.

The results of the survey showed that out of these 100 companies only 35% prepare sustainability/ CSR report where they inform stakeholders about their socially responsible activities including education and training. The higher the companies ranked based on their financial performance, the more frequently the non-financial reports appeared. This has brought an evidence of the correlation between the better financial performance and the higher occurrence of sustainability (incl. education and training) report. Both research questions were thus replied to.

Practical implication of the findings is the fact that responsible reporting companies can be considered more trustworthy for their potential business partners and therefore it can be more likely that they will be chosen for cooperation based on their transparent behavior. Implications for science is the further evidence brought by this paper of the correlation between the responsible corporate acts (including educational and training practices) represented by non-financial reporting and the better financial performance of these companies.

The presented study might inspire further research concentrated on corporate educational activities, the overall sustainability and their non-financial reporting with the focus on possible correlation between the responsible and transparent behavior of companies and their financial performance.

Acknowledgement

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**THE SPECIFICS OF TEACHING
PROGRAMMING**JÁN PILLÁR
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Catholic University in Ružomberok, Slovakia**e-mail of corresponding authors:** jan.pillar@ku.sk, igor.cernak@ku.sk**Key words:** teaching of programming, project teaching, cooperative teaching, individual teaching, global education.

Abstract: The article deals with the specific issue of teaching the programming in the conditions of the college. It describes a several-year course of research on the suitability of proposed teaching methods of several programming languages in various semesters of student study. The research was attended by mostly students who were newcomers in programming. In particular, the suitability of the use of project teaching with elements of global education was studied, following a cooperative or individual approach. The aim of such training was to develop new knowledge and practical skills in programming, especially web applications. The article finds conclusions and research-based recommendations for practice. These conclusions can also be applied to other areas of education.

Introduction

Designing and programming web portals or applications for mobile or other platforms has recently been a very desirable service for business, nonprofit and government entities. With this in mind, the study of computer science often focuses on these knowledge and skills.

Teaching programming in any modern programming language and for any target platform has its own features and rules. A good programmer has to master a great deal of theory and practice. It is not possible to learn to program well by mastering only one part of that section.

Since teaching usually takes place over a relatively short timeframe (college semester, school year at secondary school or elementary school), it brings different difficulties to this learning process. In order to be able to start programming, the student must master at least the theoretical knowledge of the chosen programming language, relating to language logic, authorized commands, syntax, and overall approach to project development. Especially for beginners this process takes a lot of time until the student gets into more complex programs. This is also a relatively boring period.

This article discusses an ongoing research at our university that focuses on the specificities of teaching programming in different programming languages. Its aim is to identify and recommend the best approaches to this process so that future programmers are best prepared for their work.

It can be said from practice that not everyone has the ability to become a good programmer, but with the right amount of effort, at least everyone can master the programming basics. After a few hours of teaching, it is very likely that you can tell who can become a good programmer and who should be doing other activities (in which he can be excellent).

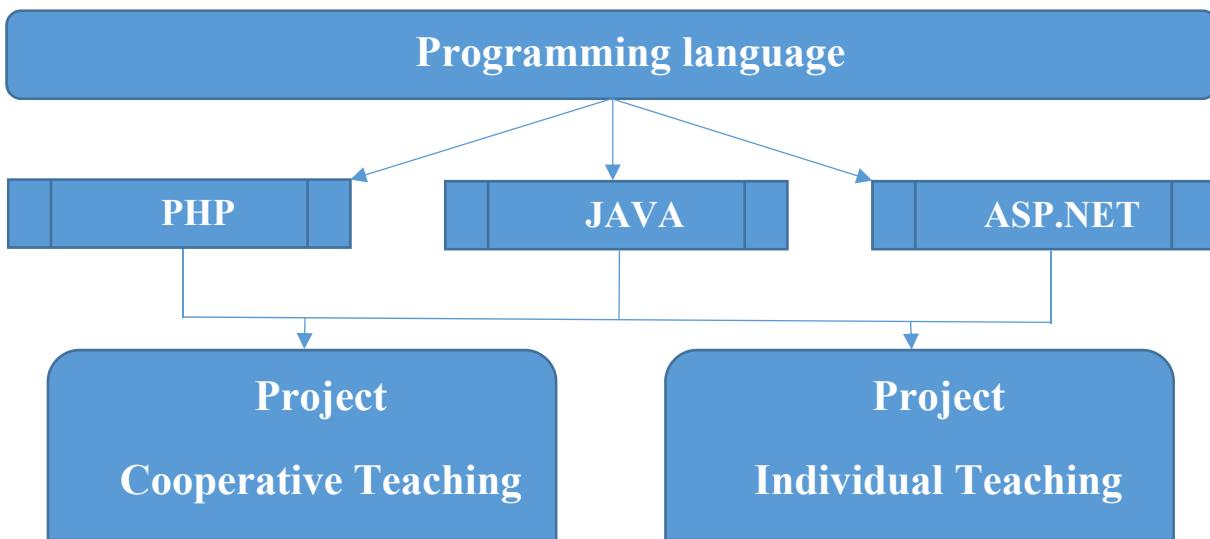
Conditions and execution of the research

In order to confirm the above, we have explored the possibility of the most optimal teaching of different programming languages as part of our teaching program at our university. This was the

programming language PHP, JAVA and ASP.NET Core framework. HTML5 and CSS3 have already been mastered. These languages, currently required, form the main part of the teaching of student programming in three separate semesters of study, with the aim of always being able to master the basics of programming in the appropriate language. This means acquiring both the theoretical and the practical part.

As a teaching method, due to the specificity of the teaching of programming, "Project Teaching with Elements of Global Education" was chosen. In addition, the suitability of using "Cooperative Teaching" and "Individual Teaching" was examined (Figure 1). The individual methods were used according to the generally defined characteristics and principles that are not the content of this contribution. Individual lessons in this case are understood by the teacher-guided study and the student's work separately, not in groups.

FIGURE 1 CONTENT AND METHOD OF TEACHING



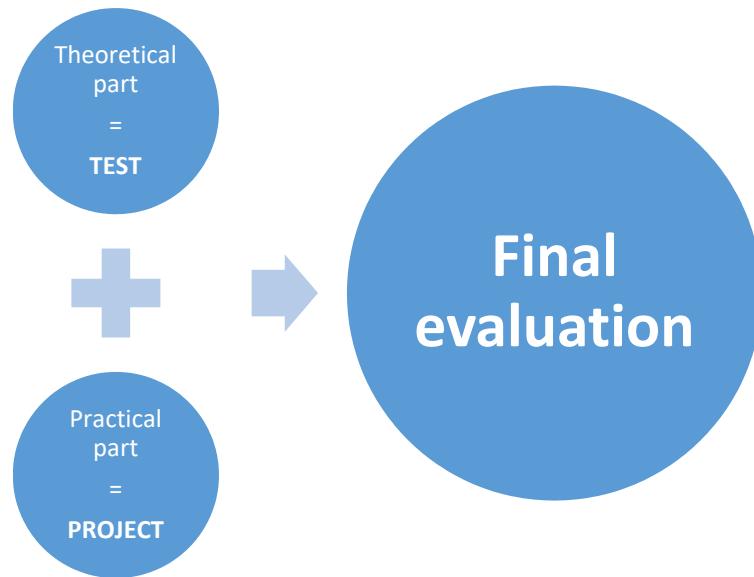
Source: Own

The research was conducted over the last two years, and in each semester it was attended by about 10 students of daily and external studies in one to two groups in each subject. So far, about 60 students have participated in it. In the case of cooperative learning, the groups formed were composed of 3 to 5 students on the basis of their spontaneous choice, always choosing a leader group who then led the group. In the case of individual lessons, each student worked and was responsible for his own project.

In every lesson or problem solving programming, elements of global education have been brought, as far as possible, in order to encourage student cooperation, a correct overview of the world, its problems, globalization, positive attitude towards the environment, colleagues, other opinions, etc. This is a long-term role that needs to be developed consistently throughout the learning process.

At the beginning of each semester the students were acquainted with the condition of mastering the theoretical part (Rosa 2007) and the practical part - designing, programming and defending the final project (Figure 2). The practical part was evaluated only after mastering the theoretical part.

FIGURE 2 ESTABLISHED CONDITIONS FOR MASTERING THE COURSE



Source: Own

The theoretical part was tested by a final test in learning management system Moodle (Tezer, Cimsir 2018). It has always been about answering 40 - 50 questions depending on the particular programming language. The questions were designed to verify basic knowledge approach to the use of the programming language, mastering the most common commands, syntax, using logic to solve the problems raised, analysis, presented additional programming code, finding bugs in the code and so on. Each question required one or more correct or incorrect answers, which required a large focus from the students (Rakovská 2017). In any case, there was no emphasis on memorizing theory, on the contrary, the aim was to enable students to present their creativity and logic in solving programming problems. For this reason, inaccuracies in programming languages command were tolerated and considered correct. It also comes out of the fact that today's modern development environments almost always offer a different name called superstructure that directly offers so-called contextual help for possible commands or patterns of their correct syntactic use in the programming language. Nowadays, apart from the logic and creative approach, the programmer now needs a complete overview of the language, its capabilities, its suitability for solving a particular problem, or its uses. Commands today are similar or even identical in many programming languages.

The practical part was examined by submitting and defending the final project (Yagci 2018). The students were in the initial hours guided in the choice of projects with practical use and benefit.

Subsequently, they independently chose the focus and title of their project and made their overall design in terms of functionality, design and target group of potential users. It has always had to be a useful project for a particular target group. Programming and debugging of projects took place directly in and out of the classroom. In the case of PHP and ASP.NET Core, students used the development environment of MS Visual Studio, for programming in Java it was Eclipse. The projects were stored on the GitHub portal and then presented in MS Azure Cloud thanks to Microsoft's Imagine Student Program (Figure 3). All resources are available to students for free.

FIGURE 3 RESOURCES FOR THE PRACTICAL PART OF PROGRAMMING



In the case of cooperative learning, group members deliberately divided the tasks into the project and presented the project's progress throughout the team web site. The GitHub.com portal has always been used for collaborative work, so work progress has been very easy to inspect on a continuous basis. The state of the project has always been documented on individual hours. The final defense of functional projects in cooperative teaching was carried out by the whole group together, with each member presenting, advocating and explaining to him the closest part of the project, including source codes.

If the student was working on the project alone (individual teaching), he did all the activities personally, but without the team website of the project. Due to the possibility to continuously monitor the progress of the work on such a project, the GitHub portal was also used here.

Found findings

Although the project continues for another year, it is now possible to evaluate it and draw some useful conclusions from the results and experience gained.

The level of programming knowledge or the corresponding programming language for students at the beginning of the semester (its study) varies. In the research conducted, most students with programming or programming languages started, only exceptionally were those who actively programmed before. Some students have declared a great interest in programming, others have taken it only as a necessary condition for the progress in the study, and have focused on a different direction. From this point of view it can be stated that the student's relation to the programming at the beginning of the study significantly influences the achieved results in the final exam.

By comparing the results obtained in the final tests, it was found that basic knowledge of the programming language and the use of its commands could be achieved by developing the appropriate dose of effort and self-study. This should be encouraged by constantly repeating on the lessons. Since the aim of the theoretical part is, in particular, to verify the basic knowledge of the programming language required for the practical part, it was found that it would not be detrimental to allow students, if necessary, to repeat the final theoretical test, provided that they are reasonably large enough and sufficiently covers theoretical requirements.

For this reason, the theoretical test always contained quite a number of differently focused questions. The final test has thus become, to a certain extent, the "coercive" means as well as the less gifted or diligent students to master at least the basics of the programming language theory. Since successfully completing a theoretical test was a prerequisite for evaluating the practical part, it has been shown that it is very important to correctly determine the minimum threshold of points obtained therein so as to achieve the objectives of the test. Practically, it was found that although the test is called "the final", it is good for the students to have completed several lessons before the semester ends so as to have enough time to repeat it for the reasons already stated.

Substantially worse results were achieved in the theoretical test on questions that were focused on using logic to solve problems and subsequently create or add code in the appropriate programming language. Also, understanding of finished programmed solutions has often been very difficult for many students. It was found that even the repetition of the final test brings only slight improvement in the results obtained in this type of question. It is obviously a long-term process in which it is necessary to focus on solving the problems of using logic and creative problem solving instead of memorizing and preference for the disproportionate amount of theoretical knowledge. It has been shown that this area is likely to be greatly underestimated already at elementary and secondary schools, so that students come to college studies, which are primarily about creativity and autonomy, insufficiently prepared.

Comparing the results achieved using the method of cooperative teaching with the results of the individual teaching method, it was found that, despite the benefits in particular of improving the socialization and communication skills of students in cooperative learning (Zahn, Kagan and Widaman 1986), the individual teaching of programming is more appropriate (Durmuscelebi 2013). The student has to rely only on himself, to solve all the problems he encounters in programming, with the possibility of communicating, consulting with colleagues, learning from more skillful and so on, since about half of the lessons have always been devoted to practical work on projects. In cooperative teaching, it became a more clever team member to carry out a larger part of the project work and weaker members did not have to try so hard. This problem, of course, also relates to the maturity of individual members of the groups created and their interest in programming or study. It is clearly

possible to argue that individual teaching programming is more appropriate in most cases than cooperative teaching. However, it is possible or even likely that, if it were to teach more advanced programming techniques, cooperative learning would be more appropriate. However, this hypothesis should still be verified.

The solution of the practical part of the teaching of programming in the form of processing and defense of own projects has proved to be an excellent choice for achieving students' interest and promoting their creativity or competitiveness. In many cases, projects have been created that have been capable of immediate use in practice. The weaker students, by creating their (though easier) project, have found that they are capable of managing the programming problem, which is very difficult at first glance. This has helped to increase their self-confidence and confidence in their own power. Sometimes it was very sympathetic and gentle to watch as students – the novice programmers, had sincerely enjoyed the first web site they had successfully programmed in a programming language that had not recently known and placed it in the cloud, thus becoming online available to anyone who sent this address. Ongoing and final defense of the project, the students gradually gained experience from correct presentation, argumentation and also discussion on professional problems (with colleagues and with the teacher).

Recommendations for practice

Based on past research and the results achieved, it is possible to set at least a few recommendations for practice that could help improve the teaching of programming:

- Programming teaching always focuses on mastering the necessary theoretical foundations and mastering the practical part - programming of projects.
- Use with advantage comprehensive tests with multiple repeatability to master the theoretical knowledge.
- The practical part to focus on solving useful projects focused on common problems of students' life, which will stimulate their interest and motivation, while the final evaluation will take advantage of the student's ongoing performance with information on the status of the project and the final defense associated with the discussion.
- For teaching programming (beginners), individual teaching is more appropriate than cooperative, and it is beneficial to design it as a project-based teaching with elements of global teaching for life in a modern global information society.
- Dismiss the excessive memorization of theoretical knowledge at elementary and secondary schools and instead focus on solving logical problems, developing creativity and autonomy as essential prerequisites for the successful implementation of individuals in modern society.

Conclusion

The article presented facts and conclusions deduced from them are not final, since research will continue for one year. They still appear to be interesting and trustworthy. The larger number of students who will still participate in the research is likely to confirm even more the conclusions outlined.

Despite the fact that the teaching of programming beginners confirmed that individual teaching than cooperatives is more appropriate, it can be expected that cooperative programming is already better applied to more advanced programmers. The basics of cooperative programming will already be dominated by students, which will be of great benefit, progressively conceiving it as a project-based teaching with elements of global teaching for life in a modern global information society.

Several projects of our students will be used for the needs of the department, respectively as a partial result for the benefit of the collaborative workplaces. However, the most important thing for us is the fact that some students declared they had a great interest in programming after completing their teaching, which could be key to their practical professional career.

Application programming is a specific activity that requires certain assumptions, particularly the appropriate theoretical knowledge, the ability to think logically and creatively, and also the pertinent dose of endurance. Subsequently, after a long period of practice, the programmer becomes really good at his job. The goal of this ongoing research is to best prepare programmers for practice.

Acknowledgement

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Key words: mathematics, students, distances studies, interactive, LMS.

Abstract: Last year, we introduced you our making video tutorials for students. We placed the materials on youtube.com and students often use these materials to study. Students also asked us questions that were mainly about the high school mathematics. Ignorance of the high school mathematics is a problem that accompanies them throughout the whole study. In this article we will introduce you to our plan to create a new interactive distance learning materials for students of VŠB - TU Ostrava. This type of material will be created at our Department of mathematics for the first time.

Introduction

The number of students who have been studying at VŠB - TU Ostrava has dropped rapidly during the last 10 years. A further amount of students give up studying in just a short time after the start, almost 40% of students are leaving school during the first semester without completing it and doing some exams. One of the reasons for this is the difficulty of studying. Students have to master the first year of mathematics, physics and chemistry. These are generally demanding subjects, especially if the knowledge of secondary school students is insufficient. However, it is not said that, despite this handicap, they can not successfully master VŠB. There are two ways to keep students at the school. One, very unfortunate in our opinion, is to reduce the demands on student knowledge, to change the curriculum, to take away the number of study materials. Unfortunately, it may happen that this knowledge will be greatly missed in vocational subjects and they will have to learn the content anyway, and usually by themselves. The second way, which we think is more meaningful, is to fill in the gaps in knowledge, so the students can prove to themselves that they have what it takes, which leads them to gain self-confidence and finish the studies successfully. So we focused on the deficiencies of our students in mathematical knowledge. We sent them a questionnaire asking about individual areas of mathematics, and how they feel about their knowledge. Although 62% of students made their school-leaving-exam from math, their knowledge is often at an elementary school level, and some of them are mistaken even in those.

Where do students come from

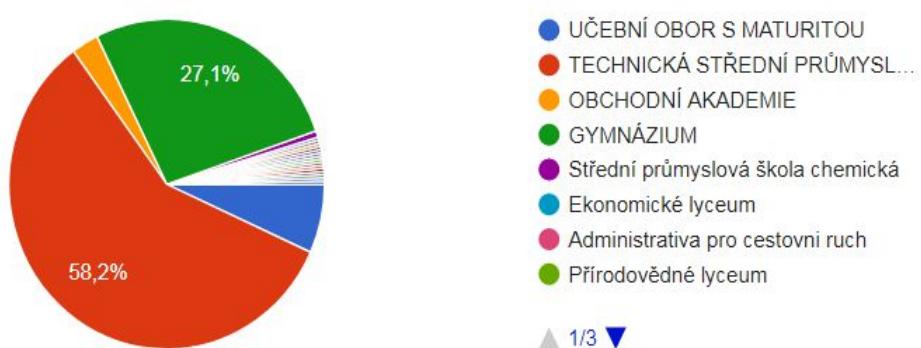
Students of master's programmes come to the VSB-Technical University of Ostrava from various specializations and the level of their knowledge of mathematics is therefore diametrically different. (Dlouhá and Hamříková 2018). However, our firstyear students are recruited from different types of secondary schools. Students from grammar schools (Czech *gymnázium*) are usually well prepared for further studies on technical university, while students from different types of high technical schools have less lessons of mathematics during their studies on secondary school and therefore their level of knowledge is often insufficient. First year on our technical university is then complicated for them, even almost

impossible to pass, although they are interested in their branch of study and they would like to fulfil our requirements. Easily we could say, that we teach our first-year students basic principles of differential and integral calculus, differential equations and linear algebra, but there are also students that still have problems with logarithms or trigonometrical functions. Similar situation arises with students of life-long learning courses which are many years behind their secondary school and their knowledge of mathematics is usually poor. Therefore, the main goal of our task was to overcome gaps between knowledge from different types of secondary schools and level of mathematics needed for successful study at Technical University of Ostrava. (Hamříková, Kotůlek and Žídek 2017).

PICTURE 1. HIGH SCHOOLS

STŘEDNÍ ŠKOLA

325 odpovědí



Source: docs.google.com/forms/

Subjective evaluation of knowledge in mathematics

We asked students how they evaluate their knowledge of high school mathematics. The subjects of secondary school were divided into short thematic units and those in smaller areas. We sent a questionnaire to those students, who went through the study after the first semester of the first year, and they gave a mark to themselves from each area.

The subjective view of students is that they have no problem with numbers, they can modify algebraic expressions and solve linear equations. However, we have exactly opposite experiences. It is the insufficient basic mathematical literacy which is the problem during basic courses of university mathematics and is the cause of their failure to solve problems. On a sample task, we can see that the student has learned to solve the double integral over the general area, but is unable to plot the area and determine the limits correctly. The calculation itself is then loaded with a number of errors.

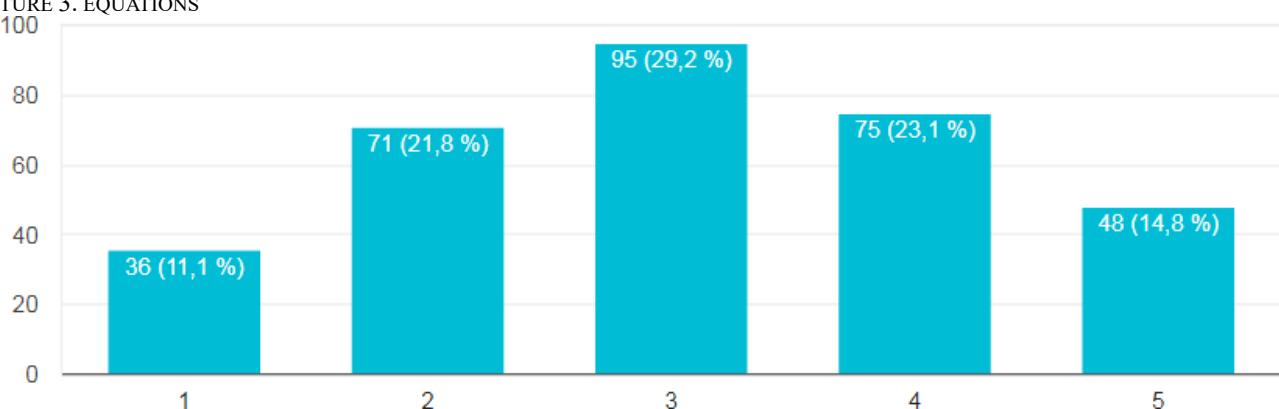
PICTURE 2. TEST

$$\begin{aligned}
 & \iint (2x+2y) dx dy \\
 & \text{Region } R : x \geq 0, y \leq 4, y \geq x^2 \\
 & \quad x=4 \quad y=x^2 \\
 & \quad x \in [0, 4] \\
 & \quad y = x^2 \in [0, 4] \\
 & \int \left[\int (2x+2y) dy \right] dx = \int_0^4 \left[2xy + 2 \cdot \frac{y^2}{2} \right]_{x^2}^{4} dx = \int_0^4 \left(2x \cdot 4 + (4)^2 - (2x \cdot x^2 + (x^2)^2) \right) dx \\
 & = \int_0^4 \left(8x + 16 - (2x^3 + x^4) \right) dx = \left[8 \cdot \frac{x^4}{4} + \frac{x^5}{5} - 2 \cdot \frac{x^4}{4} - \frac{x^5}{5} \right]_0^4 \\
 & = \frac{4^4}{2} + \frac{4^5}{5} - 4 \cdot 4^2 - 16 \cdot 4 - (0 + 0 - 0 + 0) = \\
 & = \frac{256}{2} + \frac{1024}{5} - 64 - 64 = \frac{1280}{7} = 182.857
 \end{aligned}$$

Source: Own

They admit that they often have problems solving equations and inequalities (quadratic, irrational, logarithmic, exponential and goniometric). The worst self-evaluated ability was to solve equations of absolute value. (Hamříková 2008).

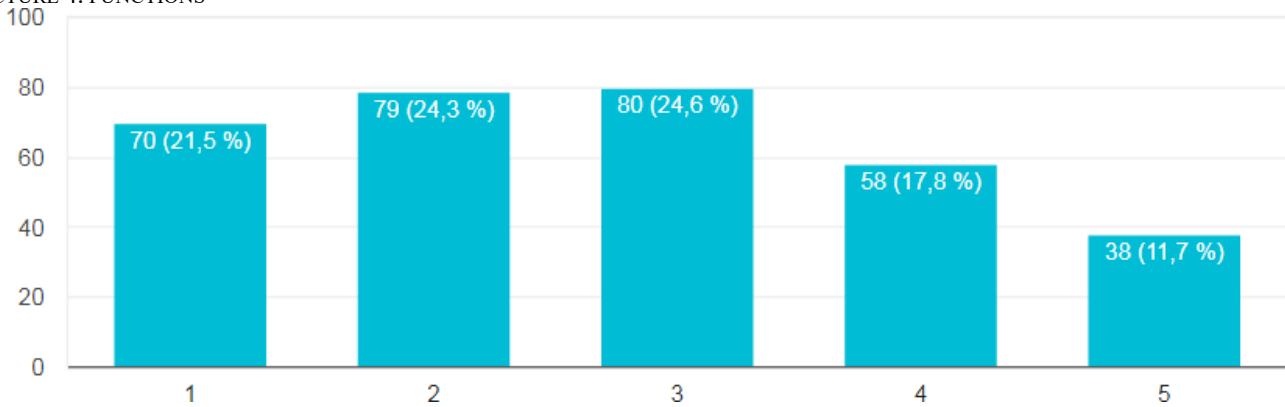
PICTURE 3. EQUATIONS



Source: docs.google.com/forms/

They feel certain in the graphs of functions, it is worse on graphs of exponential, logarithmic and some goniometric functions.

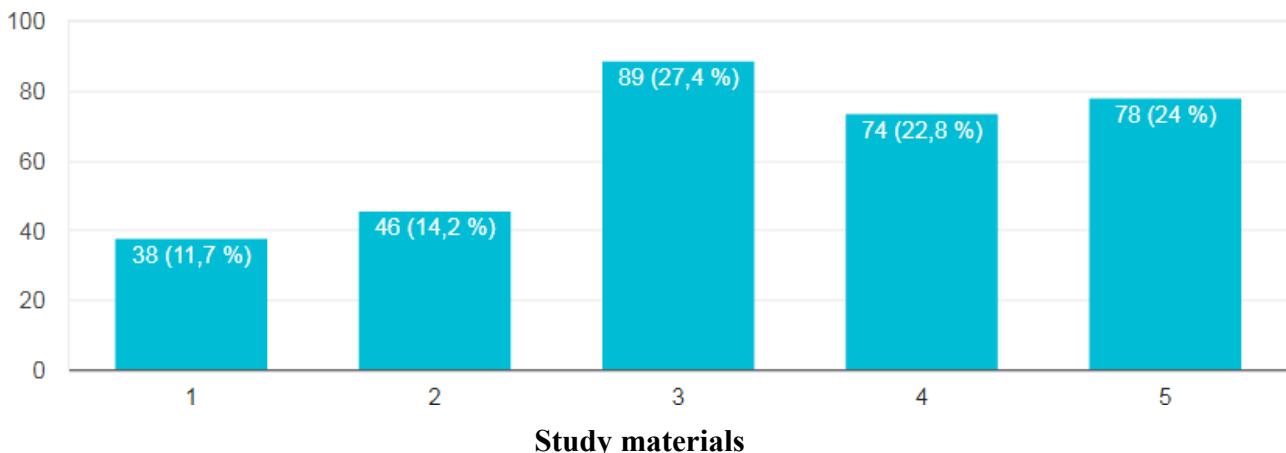
PICTURE 4. FUNCTIONS



Source: docs.google.com/forms/

Then they mention large deficiencies in all areas of analytical geometry.

PICTURE 5. GEOMETRY



Study materials

We asked the students what they use to prepare themselves, and which materials do they like the most. While on the lesson, they are guided by the teachers where the study materials are. Even though students are satisfied with the offer of our materials, they are still looking for others on the Internet. They are trying to complement their potential gaps from videos on youtube and solved examples on the internet. Only 2% of students do not need to replenish anything.

68% of students are looking mainly for solved examples, whether in the form of videos or on websites, only 20% of students surveyed use unresolved examples.

Our survey showed the trend of today's time: "When I do not know, I'll look at Youtube." The success of the video tutorial is ascribed to its design, which attended to and even incorporated key qualities of paper-based tutorials, while also capitalizing on the strengths of video. (Meij and Meij 2016, 332-344).

On the contrary, students almost do not use LMS - Moodle. But this is because there are very few materials in LMS, so the students can not use them for their study. Nevertheless, this is an ideal material for self-study and a great benefit for educators because they can display the results of student testing and immediately see, what the student can and can not do. Based on the above considerations, we have decided to create LMS materials for students, which will include theory, solved examples, video with solved examples, and test assignments in which students will test their knowledge. The time that students will devote to distance learning depends on their level of knowledge of high school mathematics.

E-Learning environments may contribute to the teaching and learning process if the integration is done within the framework of proper pedagogy. Building customized E-learning programs places high demands on design, programming skills, and time. (Kotzer and Elran 2012).

Study materials in LMS

Each sub-area will be shown to students as a page with a brief overview of the theory on the subject and two solved examples. If the student would find everything to be clear, he can go straight to the test tasks that will be generated by a random sample from a sample bank. The student will choose the correct answer from the given choices of possible results. If it would be successful, he may continue to study another sub-areas. If he fails or does not feel like doing the test yet, a link to a more detailed explanation of the theory is prepared for him, also links to videos of solved examples with exercise, which is being led by the teacher's voice. (Hamříková and Dlouhá 2017).

Example from the area of "Quadratic inequalities"

Before we go into quadratic inequality, please repeat the quadratic functions and quadratic equations.

$$\begin{aligned} 2(x-2)^2 + (1-x)(x+1) &< 3(7-3x) \\ 2(x^2 - 4x + 4) + (1-x)(1+x) &< 21 - 9x \\ 2x^2 - 8x + 8 + 1 - x^2 - 21 + 9x &< 0 \\ x^2 + x - 12 &< 0 \end{aligned}$$

We modify the specified inequality, removing the parentheses and converting all the members to the left. We will get the zero points by solving the corresponding quadratic equation.

$$\begin{aligned} x^2 + x - 12 &= 0 \\ D = 1 - 4 \cdot 1 \cdot (-12) &= 49 \\ x_{1,2} = \frac{-1 \pm \sqrt{49}}{2} &= \begin{cases} 3 \\ -4 \end{cases} \end{aligned}$$

The solution of the inequation can be seen from the function graph, part of the parabola under the axis x – negative values, part of the parabola above the x axis – positive values, zero points – x = 3 and x = -4.

Since our function is less than zero, the result is an interval where the functional values are negative. Zero points do not belong to the interval – the value is 0, it is not negative. (Picture 6)

Solved examples and test

After finishing studying students can solve 20 examples of exercises in which the student can gradually uncover the solution and thus gradually check the accuracy of his steps. After completing each thematic unit, the student will get a comprehensive test of 10 tasks that involve the trained matter from individual sub-areas.

Conclusion

Our main goal is to help the new students to clarify their real knowledge of secondary mathematics as soon as possible. We will test them at the beginning of the first semester, so they will have a clear idea of their level. Based on the result of the test, we will then individually offer them a suitable procedure to eliminate their shortcomings. We will repeat the test at the end of the first year. This way we will be able to see, how their abilities would change over a year, and hopefully for the better.

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**DEVELOPMENT AND IMPLEMENTATION OF
E-LEARNING COURSE BY USING
KNOWLEDGE ENGINEERING AND
SOFTWARE ENGINEERING METHODS**

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Keywords: e-learning course, knowledge engineering, software engineering, software development life cycle, knowledge types

Abstract: E-learning is a very popular topic in education, not only at schools and universities, but also as a part of education in companies. The development and implementation of an e-learning course is not an easy task. Many educators are preparing their e-learning courses without deeper pedagogical training and a lack of knowledge from software development. Good educators are not always familiar with IT and from the other side, the IT experts are very seldom good teachers. This problem is the motivation for the research and arises from our IT support experience for LMS users and from a short survey. The process of e-learning course creation should be a combination of pedagogical know-how and the knowledge of software development. Although there are many software tools for course development, to choose the appropriate one and to use it in the right way needs some knowledge from software engineering methods. The paper focuses on e-learning course development as a software development life cycle. It suggests the modification of agile software development methodology as appropriate methods for course development and explains the reasons for this suggestion. The main reason is, that the e-learning course is a software for supporting the knowledge life-cycle. It means, the course is a space for creating, storing, sharing, refining and using the knowledge. For creating such a course we can use various knowledge technologies (e.g. knowledge discovery systems, collaborative workspaces, multimedia, document libraries etc.) and we have to use the adequate software development method, which allows further evolution of the course. The paper provides useful and practical steps of development method and explains the main phases such as analysis, design and implementation of e-learning course creation using the techniques from knowledge engineering and software engineering.

Introduction

The twenty-first century brings new challenges in many fields of daily life. New technologies are involved in industry, business and in Smart Cities as new technology solutions for Technology Framework in the city. The concept of Smart City includes more than we are able to see at first sight. It is necessary to talk also about Human Framework, Institutional Framework, Energy Framework, Data Management Framework and about the ecological impact of all changes. When we talk about Human Framework, we talk about Human Infrastructure, which contains, for example, creative occupations and workforce, knowledge networks, voluntary organisations and all activities leading to sustainable development of a city and whole society. The concepts of Learning City and Knowledge City are very important in the Smart City. The Knowledge City is described in many ways, but for our purpose, the appropriate characterization of Knowledge City is from (IGI Global, 2017): “The culmination and synthesis and reintegration of the creative city and the science city where knowledge, arts and sciences become unified in a uniquely human 21st century urban ecology”. The universities have a main role of Knowledge City and surely all educational institutions. The importance of education institutions is related to the sustainable learning of city management, government, business management in the city, developers in various areas and all citizens. Therefore, learning is an important feature of future Smart City. Skills, innovations and knowledge are the drivers in the development of whole society not only in the Smart Cities. All the mentioned abilities are the human features, so it is important to teach people, who live in very a fast

changing city environment. From that point of view, UNESCO defines a Learning City as a city that (UNESCO, 2017):

- effectively mobilizes its resources in every sector to promote inclusive learning from basic to higher education;
- revitalizes learning in families and communities;
- facilitates learning for and in the workplace;
- extends the use of modern learning technologies;
- enhances quality and excellence in learning;
- fosters a culture of learning throughout life.

The Learning City concept covers too many non-heterogeneous groups of people, a wide range of organizations (starting from family education, schools, universities, communities, organizations, government, etc.) and a huge amount of information. Therefore, it is not easy to achieve the goal of sustainable learning in all life aspects by using only the face-to-face way of teaching. So universities as the leaders in Learning and Knowledge cities can play the main role and they should build open centers for education by using a high tech way of learning. The perception of high technologies (mainly ICT) in education is a little bit controversial because it is not easy to deal with them without adequate IT expert support. Many teachers and educators use the technology supported education (Misút 2013), where face-to-face teaching is more important than technologies. The teachers are focused on the subject content, not on preparing the technology platform. New IT based on server-client architecture offers more opportunities how to shift the teaching from blended learning to distance learning and finally to fully automatic learning systems with virtual tutors or virtual reality (Rakovská 2015). All these technologies are bonded to „e-learning topic“, which is still in the center of researchers' care and attention. E-learning has a lot of definitions (Misút 2013) from various points of view. On the one hand, the main research focus is given on impact technologies at the pedagogic issues, for example, teaching methods, learning styles (Teach 2018), learning theories etc. On the other hand, there are a plethora of companies offering „the best IT practices how to create“ an e-learning course and give to teachers innumerable quantity of advice how to create „the best course in the world“. Surely, this advice does not without costs and does not fit exact to teachers needs, because many of them come from IT experts without deeper pedagogical education and skills. There is the communication gap between teachers and IT developers in the practice.

As we mentioned before, universities and learning organizations are the crucial players by implementing new technologies in the whole society, not only in the Smart Cities. The university teachers, educators, and IT experts should cooperate by preparing effective ways how to spread education by using

IT. Our article tries to make easier communication between software developers and educators. The reason, why we started to work on the topic of e-learning in terms of Software engineering and Knowledge engineering is, that the e-learning course can be seen as a set of software tools supporting the knowledge acquisition, dissemination and storing it. We came out of long pedagogical experience in the IT teacher positions and from practical experience with various Learning Management Systems on different positions (user, student, teacher, manager, administrator) and from the short survey about e-learning perception at secondary schools and universities. A survey data analysis shows us the important variation in e-learning perception and a lack of knowledge about e-learning course development and implementation. When we look at the e-learning course as a set of information technology tools, which we can implement and use in the educational process, then we are able to perceive it as an Information system (Bieliková, Šimko&Šimko 2017). From the other side, the e-learning course usually contains a variety of knowledge technologies for supporting a natural knowledge life cycle (Mikulecký 2003). Our research has a primary practical purpose: to guide the teachers how to use a development model for creating the e-learning course and how to analyze all the aspects of using the information technologies from the point of knowledge engineering view. The second purpose is to remind, that the pedagogical education needs deeper IT knowledge in the 21st century. And finally, science purpose is to show the close relation between three sides of current education: knowledge management, e-learning, and software engineering.

From knowledge management to e-learning course

In the previous section we explained the importance of open education and in this case also a significant role of e-learning and mainly the e-learning courses, which can include a wide range of IT tools. Open education is one of the feature of Knowledge management (KM) and is necessary for knowledge acquisition and sharing in the whole society. In the beginning, the KM was mostly viewed as a discipline relating to business and its importance was oriented on the business profit. Current understanding of KM covers the whole society, thanks to the new IT as well. It is not easy to give an exact definition of KM, because it has more aspects (Bureš 2007; Hajric 2010). Guus Schreiber (2000, 72) in gives the KM characterization: „Knowledge management is: a framework and tool set for improving the organization's knowledge infrastructure, aimed at getting the right knowledge to the right people in the right form at the right time.“ Other useful definition is given by Emil Hajric (Hajric 2010): „Knowledge management is the systematic management of an organization's knowledge assets for the purpose of creating value and meeting tactical and strategic requirements; it consists of the initiatives, processes, strategies, and systems that sustain and enhance the storage, assessment, sharing, refinement, and creation of knowledge.“ The knowledge is the center of interest within KM. There is many other KM definition and we can speak about some KM schools (Galvis-Lista, Sanchez-Tores 2013). The three main approaches to KM are:

- Technocratic approach, where the main focus lies on technology use for knowledge handle and supporting the knowledge life cycle;
- Economic approach, which arises from business management and stress business processes. Business processes are based on knowledge (how to do something);
- Behavioral approach, where the most important care is about people, who are the knowledge owners.

These three approaches say about knowledge in the practice see in Picture 1:

- a. Knowledge is an intangible asset and it is human property (Who is knowledge owner? Human being.)
- b. Knowledge has sense and importance only in the practice. (What to do with the knowledge? Knowledge as a driving force in process.)
- c. Knowledge is not easy to gain and gather, because it comes not only from learning, but also from experience and intuition. So it is necessary to find a way how to store and reuse the knowledge and involve them in the practice in a new way by using IT (How to handle the knowledge? Use appropriate technologies.)

PICTURE 1. KNOWLEDGE IN PRACTICE



Source: Own

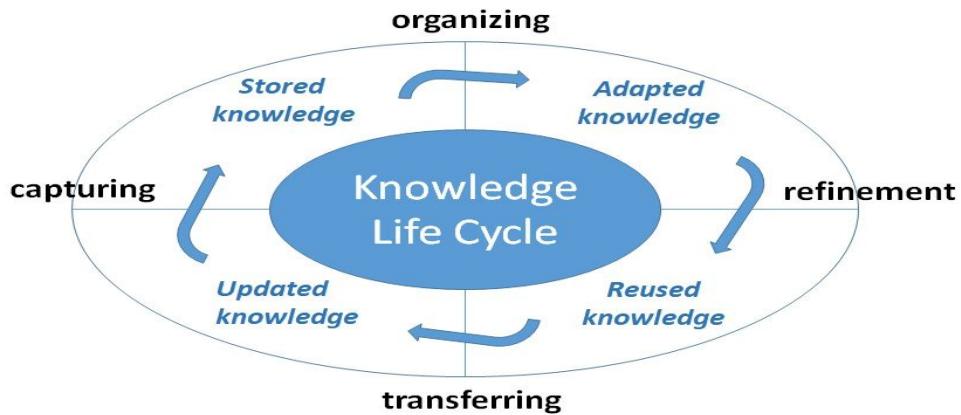
Guus Schreiber (2000, 4) wrote „Knowledge is the whole body of data and information that people bring to bear to practical use in action, in order to carry out tasks and create new information.“ Schreiber's characterization is important, because it merges IT, processes and people in a very effective way. It brings two views of knowledge:

- The knowledge is information in action;
- The knowledge is able to create new information.

These two views are the basic principle of knowledge life cycle (Awad, Ghaziri 2004), which is incremental in the practice. In this context, it is more than clear that to manage knowledge is totally different than to manage information. KM within the organization follows the knowledge life cycle based

on four main processes (Awad, Ghaziri 2004): capturing, organizing, refinement, and transfer. The mentioned four processes are in Picture 2 with four added states of knowledge.

PICTURE 2. KNOWLEDGE LIFE CYCLE WITHIN ORGANIZATION



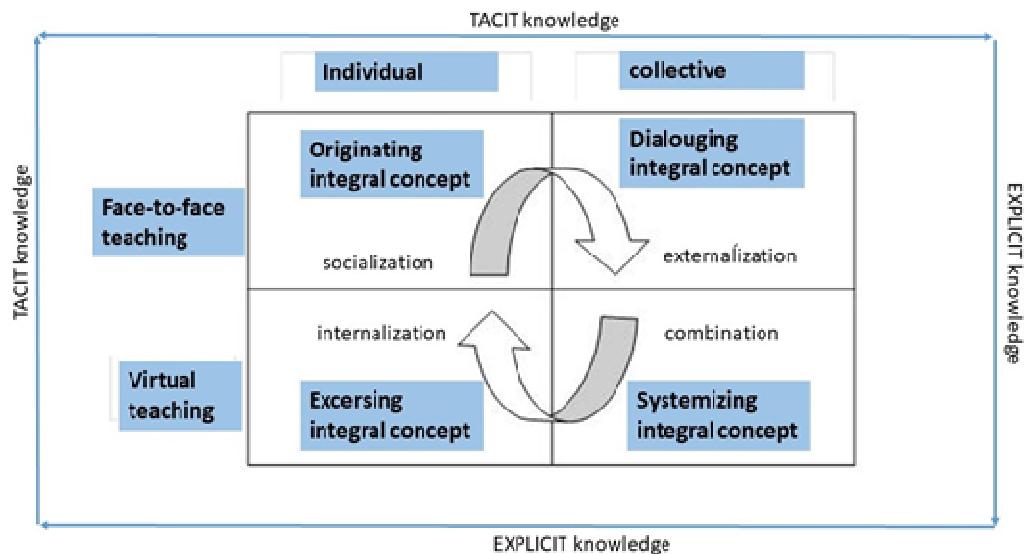
Source: Own

We can see that each process transforms the state of knowledge within the organization. The process of capturing contains more techniques as brainstorming, interviewing, learning from lectures, observations, scenarios etc. But the capturing also means ways how to store the knowledge. This process uses storage information technologies such as databases, knowledge bases, big data, and web space. Here we are able to store and then organize gained knowledge by another techniques (web farming, using metadata, mapping, filtering, indexing etc.). In the process of knowledge organizing, we adopt the knowledge for concrete purpose and concrete people within the organization and so prepare it for refinement. The refinement process has the similar or the same techniques, but it is often made in concrete person action. In this action knowledge is changed and the state is: reused knowledge. And finally, reused knowledge is updated with acting to new and higher level and produces new information, which can be again involved into the knowledge life cycle. The whole knowledge life cycle can be covered by various information technologies. Emil Hajric in (Hajric 2010) presents and describes in a more detailed view the importance of IT-based knowledge management tools in these categories:

1. Groupware systems & KM 2.0
2. The intranet and extranet
3. Data warehousing, data mining, & OLAP
4. Decision Support Systems
5. Content management systems
6. Document management systems
7. Artificial intelligence tools
8. Simulation tools
9. Semantic networks

All these IT tools categories support the Knowledge life cycle in some processes. To choose and implement an appropriate IT tool is difficult task and it depends on the knowledge type and features. Bureš (Bureš 2007) categorized the knowledge by using attributes like a conceptual level, an abstract level, the degree of measurability, degree of applicability, degree of importance, degree of certainty, time, place, programmability etc. The most important knowledge categorization is based on the possibility to express and declare it in an explicit form. This categorization is well known in the SECI model by Nonaka, Takeuchi (Virkus 2011) and we know explicit and tacit knowledge (sometimes embedded and implicit knowledge) (Bureš 2007). SECI model describes the conversions between pairs of knowledge. We know four modes of conversion (9): socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit) and internalization (explicit to tacit). The explicit or tacit knowledge form has an impact on the way of implementation four processes within the knowledge life cycle. Therefore, the form has an impact also in the way of teaching the knowledge. SECI model is easy applied in education (Cool, Thompson, Thorton, Varner 2011), where is described the “integral concept” within which knowledge it is shared, created, and utilized. Nonaka, Takeuchi (in Cool, Thompson, Thorton, Varner 2011) delivered the integral concept of education based on four conversion from SECI model. The authors of (Cool, Thompson, Thorton, Varner 2011) delineate the four integral concepts for education in **Picture 3**.

PICTURE 3. TITLE



Source: Own

In previous rows, we noted, that there is a difference between teaching the knowledge and information. Information has mostly explicit form (we hear or read it). Knowledge also involves our experience, skills, intuition and a specific way of doing things. In Picture 3, we combine the SECI business model with education model and here we sketch that

- Teaching tacit knowledge face-to-face for individuals needs empathizing (socialization comes from observation and behaviour patterns);
- Teaching tacit knowledge face-to-face more people (a collective), means articulating the knowledge and turn it to an explicit form;
- Teaching explicit knowledge in a virtual way more people means to connect various explicit forms of knowledge (to combine more explicit sources);
- Teaching explicit knowledge in a virtual way for individuals means to change explicit knowledge to a daily routine. Or to take explicit knowledge from the theoretical world and join it to practice (to embody explicit knowledge).

When we look at the integral context for teaching from the point of knowledge assets view Nonaka and Takeuchi 1995 (in Cool, Thompson, Thorton, Varner 2011), described four groups of knowledge assets in Picture 4.

PICTURE 4. FOUR CATEGORIES OF KNOWLEDGE ASSETS (NONAKA & TAKEUCHI, 1995)

Experiential knowledge assets Tacit knowledge through common experiences • Skills and know-how of individuals • Care, love and trust • Energy, passion and tension	Conceptual knowledge assets Explicit knowledge articulated through images, symbols and language • Product concepts • Design • Brand equity
Routine knowledge assets Tacit knowledge routinized and embedded in actions and practices • Know-how in daily operations • Organizational routines • Organizational culture	Systematic knowledge assets Systematized knowledge explicit knowledge • Documents, specs., manuals • Database • Patents and licenses

Source: (Cool, Thompson, Thorton, Varner 2011)

Khademi, Kabir, Haghshenas (2011) suggested that the e-learning has more benefits in the business within the frame of Knowledge Management. It brings more personalized learning, flexibility, knowledge development, and cost effectivity. These features play the significant role at universities and secondary schools, where the information and knowledge are changing fast in some subjects. E-learning as a part of distance learning, of course, covers the virtual teaching from Picture 3 and systematic knowledge assets and routine assets as well (Picture 4). Although it seems to be impossible to use e-learning for sharing and teaching tacit knowledge, some new technologies could be helpful.

The next section is devoted to an e-learning perception survey and its IT development. The main focus of the survey is whether the teachers are familiar with software engineering and variety of IT tools. Also

whether they are able to assign the adequate software tools to some knowledge types. Although we sent a questionnaire to many people and spread it to universities, it is still a problem to gain enough respondents.

E-learning perception and experience at universities and secondary schools

Our research stress some typical problems when the teachers want to start with e-learning in Slovakia (although a few respondents teach at czech universities). Usually, the teachers do not know an exact reason for using e-learning tools. A reason is not always clear. The teachers want to find something, what makes their work easier, more effective and often the reason is a distance learning or non-heterogenous group of students (to the 2nd degree come more students from other universities). Most teachers have no knowledge of the Learning management systems or software tools suitable for the distance learning. Some of them have poor pedagogical knowledge on how to use information technology to teaching and lack of the necessary skills. By doing the survey we received many e-mails or answers face-to-face, where the teachers give the reasons for not responding the questionnaire:

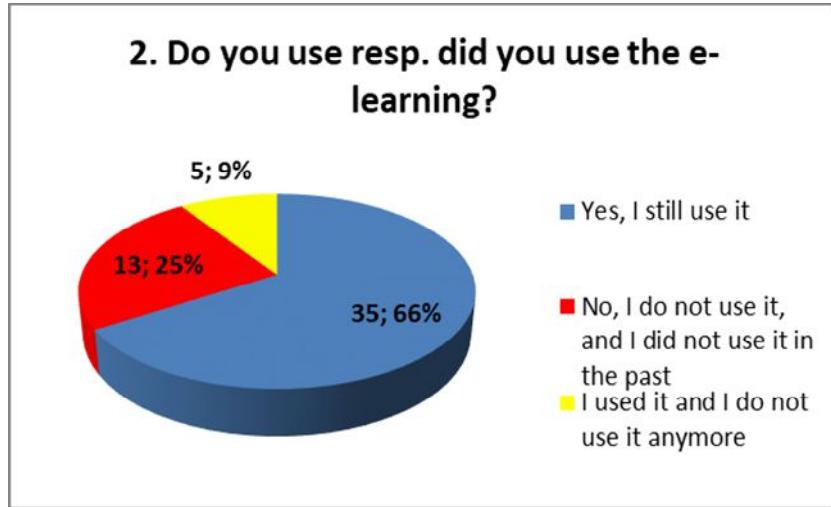
- I do not use the e-learning, my subject is not possible to teach by e-learning (math, statistics, programming, logic etc.);
- I do not use the e-learning, it cannot update, upgrade and increase knowledge concerning my subject;
- I am from IT sector, I have my own way of teaching (programming, various project teaching etc.).

The questionnaire was also created for those teachers who do not use (did not use) the e-learning courses, because we want to detect the reasons for not using e-learning, to detect what they know about types of knowledge in their subjects and what they expect from the e-learning. Finally, we want to find out what can help them if they decide to make the e-learning course.

Our expectation was: Most teachers make their e-learning course alone, without support. They develop the e-learning course only intuitive.

The survey has 55 respondents and all are teachers and was in Slovak language. We asked more than two hundred teachers, but most of them did not respond. From 55 respondents, 39 (70,9%) teachers are from the Universities and 16 (29,1%) teachers are from the Secondary schools. The first question of the survey was: „Do you use respectively did you use the e-learning?“ Chart 1 shows, that the most of respondents are teachers who still use the e-learning courses (66%).

CHART 1. ANSWERS TO QUESTION 2. OF SURVEY



Source: Survey among teachers

The Question 3 in our survey was for those respondents, who terminated or never have used the e-learning courses. We want to know the reasons for terminating the e-learning courses or why the teachers do not want to use the e-learning courses. Table 1 describes the reasons and in the first, second and last row are the answers, where the teachers could write they own reasons (the answer was: „Other - you can write your own reason“). The reasons are interesting, but as we supposed the primary reason is: „The preparation of the e-learning materials takes too long“ and second important reason is: „My subject cannot be taught through the e-learning“.

TABLE 1. ANSWERS OF QUESTION 3 „IF YOU ARE NOT CURRENTLY USING E-LEARNING, PLEASE STATE THE REASON“

ANSWERS	COUNT	%
Other: I have completed a credit training, I have created materials, but we do not have the software installed at our school.	1	5%
Other: E-learning is meaningless because it is only providing materials. The students do not learn more than the materials contain.	1	5%
E-learning does not improve the quality of education. I do not use it.	3	16%
<u>My subject cannot be taught through the e-learning.</u>	6	32%
<u>I have no support of the IT department for a serious job with e-learning</u>	1	5%
<u>The preparation of the e-learning materials takes too long</u>	6	32%
Other: I have had no time to prepare this kind of teaching and I prefer other ways of teaching	1	5%
SUMMARY	19	100%

The next Question 4 focused on the e-learning perceiving „What is an e-learning by your opinion?“ and there were multiple choices of answer. Table 2 shows, that the most teachers perceived e-learning as a possibility of Learning Management System usage.

TABLE 2. ANSWERS OF QUESTION 4 „WHAT IS AN E-LEARNING BY YOUR OPINION?“ (MULTIPLE CHOICE)		
ANSWERS	COUNT	%
Providing the electronic text materials to students	30	54,5%
Online lectures e.g. using skype	10	18,2%
Creating courses for students, for example, using Learning management systems (such as Moodle), where students have the materials, the lectures, submit assignments and solve tests (both for external and daily students)	45	81,8%
Using various IT for education (software, multimedia, mobile devices etc.) Not necessary to use them online	16	29,1%
A study web portal from which students have access to all necessary resources, working environments, software, tests, exercises, assignments and materials needed for study	30	54,5%
Video tutorial on the subject, where the students can watch the exact procedures (practical procedures)	21	38,2%
An online course with interactive presentations, with a video (from lectures by a renowned lecturer), or a video that explains the specific topics of the subject	26	47,3%
An online course (similar to the previous one) with the tutor	21	38,2%
ANSWERS TOTAL	55	

In the next part of the questionnaire, we focused on the problem with the relevant preparation of the e-learning course (whether the teachers have the pedagogical knowledge, whether they had some training on how to start with e-learning course and who trained them etc.) Chart 2 and Chart 3 shows the answers, where it is more than clear, that although the teachers have some pedagogical knowledge about IT in education (54%), 45% of teachers have had no adequate training on how to start with e-learning course. And 13% respondents gave no answer concerning the training.

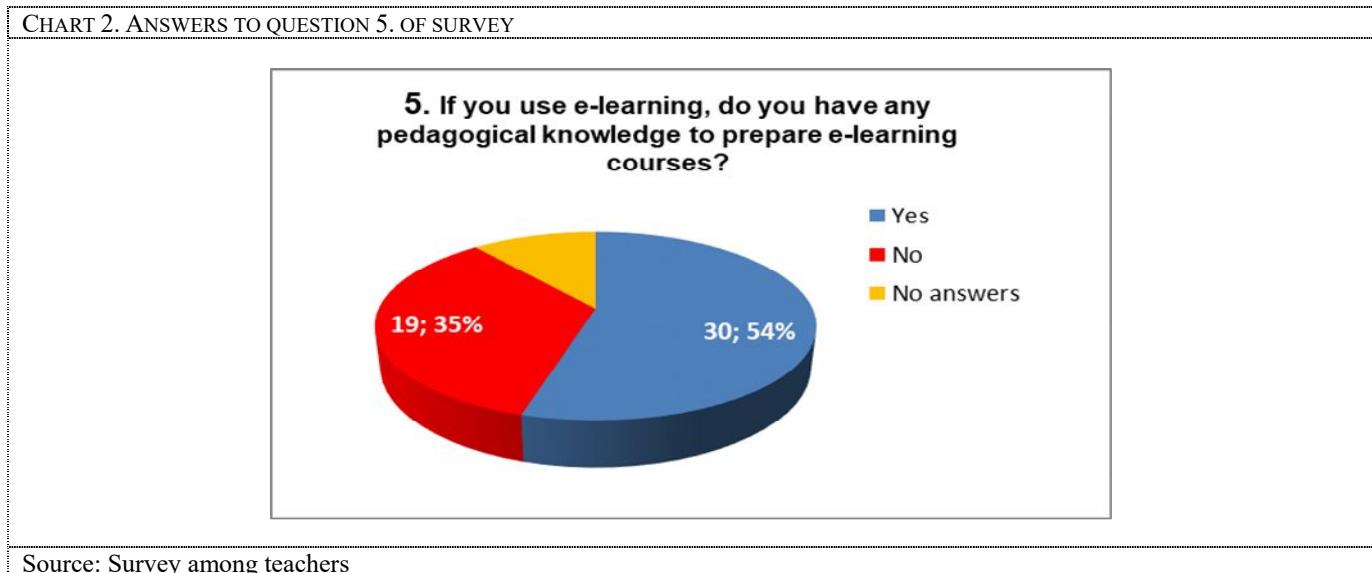
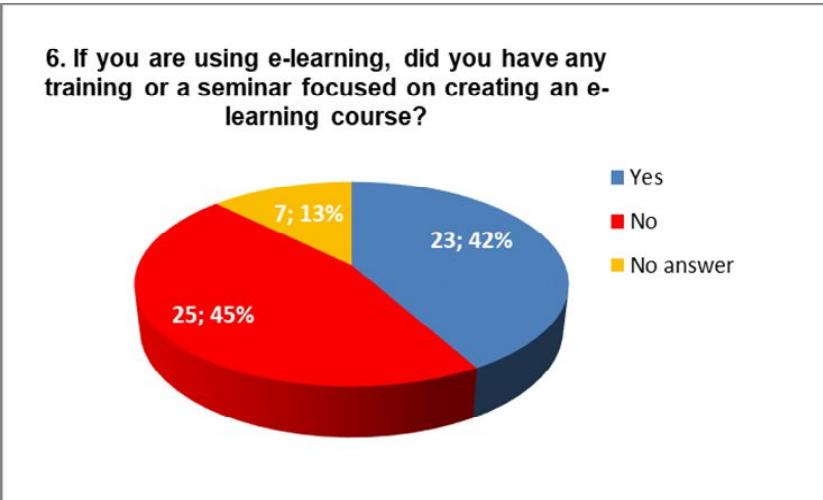


CHART 3. ANSWERS TO QUESTION 6. OF SURVEY



Source: Survey among teachers

The next two Questions (7,8) reveals who train teachers if they need a help with the e-learning course preparing. We can see from Table 3, that the information about the e-learning preparation is usually shared with the colleagues (IT or non-IT teachers). But there we have also answers about self-study and using manuals (individually). The Question 8 follow the previous one: „If you were not trained/educated by anyone, how did you start with e-learning?“ (Multiple choices). One-half of all respondents (22 teachers responded this question) answered: „I started to use the school Learning Mangement System, which I found by the way“ and 14 teachers started with the preparing their own web page or their own online tests.

TABLE 3. ANSWERS OF QUESTION 7: „IF YOU USE E-LEARNING, WHO WERE YOU EDUCATED/TRAINED BY?“

ANSWER	COUNT	%
A person with an e-learning training certification	6	15,8%
A person from an external IT company	3	7,9%
A person from the IT department who is also a teacher and who teaches	1	2,6%
A person from an IT department who is not a teacher and who not teaches	3	7,9%
Nobody	1	2,6%
A teacher who has IT education	11	28,9%
A teacher who does not have IT education (eg a colleague)	6	15,8%
Individually (Other)	7	18,4%
TOTAL	38	100%

We wanted to investigate the topic concerning the teachers' ability to distinguish the various types of knowledge and if they are able to assign the adequate information technologies to some knowledge types. Seventy-one percent of teachers are informed about learning styles (a visual-non-verbal style, auditory, verbal-visual, kinesthetic learning style). It seems, that the teachers are able to distinguish an explicit and a tacit knowledge. Only one teacher answered, that he/she does not know, what kind of knowledge he/she teaches. Twenty-eight teachers (50,9%) assumed (they believe) that they teach only the tacit knowledge („The so-called tacit knowledge. The knowledge that is unspoken, quiet knowledge, which are often part of practical procedures and that can be learned by observation“). Fourty-five percent of respondents wrote

that they teach only the explicit knowledge. Table 4 discovers an interesting fact. Although more teachers are persuaded, that they teach only tacit knowledge, most of them wrote, that they teach logic, accurate knowledge, based on exact principles (37 teachers, 67,3%), which are necessarily explicit.

TABLE 4 ANSWERS OF QUESTION 11: „WHAT TYPES OF KNOWLEDGE IS CORE IN YOUR SUBJECT? (SELECT TWO OPTIONS)		
ANSWERS	COUNT	%
Logical knowledge, accurate, based on precise principles, exact knowledge	37	67,3%
Knowledge based on experience, estimates, often subjective	12	21,8%
Practice-oriented knowledge; how to do something, capturing procedures	27	49,1%
Rapidly changed knowledge (eg. IT and technology)	14	25,5%
Knowledge that is difficult to verify, cannot be supported by experiments (e.g. in socio-economic sciences)	8	14,5%
Explicit knowledge, that requires a considerable degree of memorizing	7	12,7%
Knowledge that is highly specialized, which cannot be taught without understanding the fundamentals of the domain	19	34,5%
Knowledge, which is based on the experts' opinions and is explicit declared. Often is necessary to learn an experts' opinions.	9	16,4%
FROM TOTAL ANSWERED	55	

The following question was about an assignment the adequate IT to types of knowledge from the previous question. The Table 5 confirms that the teaching subjects contain mainly explicit knowledge to a great extent, because the teachers use the technologies as the lectures in presentation form (ppt files) or documents in PDF format, or as Electronic textbooks, books, monographs etc., or by using the print material, pen and paper. Only a few respondents use the scenario software, video of lecture (where you can show the practical proceedings) and some people chose possibility „Other“ and mostly they use special software (IT teachers). Here we can see the contradiction between teachers' opinions and judgments (that they teach a tacit knowledge) and the reality (they have used mostly the IT that supported sharing and teaching the explicit knowledge).

TABLE 5: ANSWERS TO QUESTION 12: „PLEASE, CHOOSE TECHNOLOGIES THOSE ARE WELL SUITED TO THE TYPE OF KNOWLEDGE THAT YOU TEACH AND THAT YOU HAVE IDENTIFIED IN THE PREVIOUS QUESTION”

ANSWERS	COUNT	%
Lectures mostly as MS PowerPoint resp. as a pdf file	47	85,5%
Electronic textbooks, monographs, books	30	54,5%
Print materials (textbooks, paper materials etc.) so that students can mark and write notes in the text	30	54,5%
A paper, the pen and my “live” lectures	21	38,2%
Special software (e.g. mathematical, simulation of procedures, Matlab, Simula, Opnetmodeler, software for simulating natural sciences, language software, etc.)	21	38,2%
Video recordings from my “live” lectures	14	25,5%
Online discussion via skype	4	7,3%
Written discussion (various forums) and chat	8	14,5%
Wiki, where students share multiple insights into the topic	8	14,5%
Video tutorials with instructions (how to do ... how to handle the software, etc.)	11	20,0%
Software with the scenario in which the student can work (follow the instruction or situation)	12	21,8%
TOTAL ANSWERED	55	

The next part of survey was oriented on a structure and content of the e-learning course. Here is the main problem with creating the e-learning course, because the teachers „are strong individualities“ and they do not feel the necessity to cooperate with somebody by preparing materials (content) of the course. Often there is a greatly competitive environment at Universities and the teachers do not like to share the knowledge with the colleagues. We received 47 answers for the question: „Do you create the e-learning course structure yourself (how will it look like, whether it will contain videos, texts, web pages, audio recordings, chats, wiki etc.)?“ Thirty respondents (64%) do not create the course structure and other prepare the course structure themselves (17 respondents). In the next question, many teachers said, they use school’s LMS structure (almost half of them) and other cooperate with colleagues or students by preparing the course structure. Only one respondent wrote, that the school has the specialist for online education methodology and administrator of online center. We asked also about the possibility to cooperate with somebody by preparing the e-learning course content. Seventy-six percent of respondents prepare the content of the course without help. Those teachers who are willing to accept help mostly consult and cooperate with two or more colleagues in the same field. Only a small number cooperate with IT department.

We did not ask respondents many questions, because too many questions people discourage. Therefore we focused on well known framework for an e-learning course development – ADDIE (Serhat 2018). We asked, whether the respondents are familiar with ADDIE. First, we asked the respondents if they know any development method for an e-learning course. Thirty-three respondents (60%) state that they do not know any development method for an e-learning course and 22 respondents (40%) know some method. Then we asked for ADDIE, because it is the well-known instructional systems design (ISD) framework for training

developers and the course developers. Thirty-four respondents (69%) do not know ADDIE, some of them want to learn more about it and only seven respondents know ADDIE, but only three of them use it. Five teachers use other e-learning course development method. One respondent said, that he has totally different imagination about the course development method (not ADDIE).

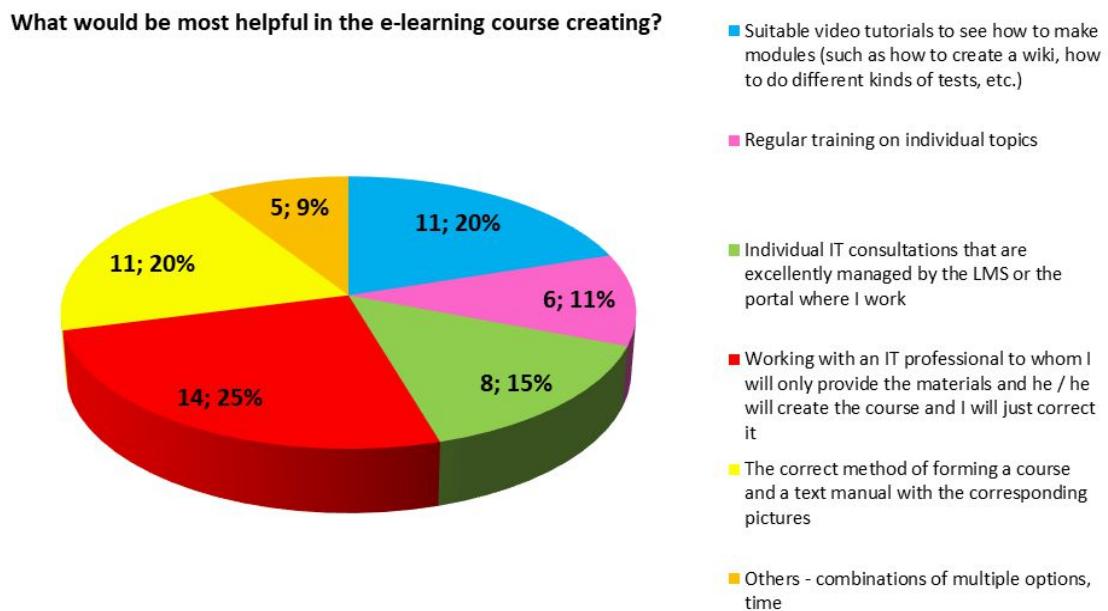
Finally, we were wondering, whether the teachers would like to invite somebody to collaborate on the course development, which tools they wish involve into the courses and what would help them with the e-learning course creating. Teachers' preferences when selecting the team members are as follows (the respondents could choose any number from six possibilities or he/she could add other person):

- An expert on the content of the subject (e.g. If the course is from informatics, so an expert in the informatics) – 30 respondents
- A course administrator and tutor, who is involved in the implementation phase of the course and motivate students – 26 respondents
- A course designer responsible for the course design and strategy, who has knowledge of pedagogical techniques as well as their connection to design elements and IT – 23 respondents
- Only person as technical support for hardware (net and hardware support) – 20 respondents
- A web and software developer, for example, for web site creation, software support, database creation, course installation and editing – 19 respondents
- A course manager, for example, he/she manages human resources, individual activities for the course, and so on – 15 respondents
- 4 respondents wrote their own „other” opinion and we can summarize the answers: I do all myself and I do not need anybody.

One respondent wrote, that it is necessary to have a department for online teaching at University and the last respondent was sceptic and wrote: „It is inconceivable that the University would give me some people to the online course creation”.

The question concerning the software tools shows us, that the most of teachers (40%) prefer LMS with other software tools as MS Office or Open Office, tools for interactive content, tools for supporting graphics and animation as Adobe Illustrator, Adobe Photoshop etc. What is interesting, that 14 respondents (25,5%) have no idea, which software tools are suitable for the e-learning course and for their teaching subject. The last question, but very important gave us the picture how to help the teachers with an e-learning course creation and further development. The **Chart 4** shows the respondent answers. +

CHART 4. ANSWERS TO QUESTION 6. OF SURVEY



Source: Survey among teachers

Survey results. The short survey confirms our primary assumption: Most teachers create the e-learning course content alone using the LMS, which they found „by the way somewhere at university/school“. They have lack of real information about the possibility to use some concrete method for the e-learning course. Although they have ever heard (or read) about the methods, they use none of them. We recognized the two main reasons for preparing the course only by one person:

- The competitive university environment (the teachers do not like share they knowledge with colleagues, they do not like the criticism, they are “strong individualities”, they are worried about the loss of the job position;
- There is a lack of university teachers at all.

The research reveals another result: the teachers are not familiar with knowledge management and they cannot distinguish the types of knowledge and then assign the appropriate IT for education. As we discussed before (see the Table 4 and Table 5), there is a problem with recognition the type of knowledge, which is taught. From the previous section is clear, that shared knowledge via information technologies is generally explicit. It is too difficult share tacit knowledge by using IT. It is difficult, but not impossible and we will speak about it in the next section. However, the most important finding is, that there is missing the real e-learning support on the University side. As we mentioned, only one respondent wrote about school job positions at university: administrator of online teaching and specialist for the online education. This university is Private University, but not all respondents from this University mentioned these two positions and the IT support is missing them. The last but not least is a finding, that the university teachers have not

enough time for preparing, maintaining and improving the e-learning courses without help of IT department and support of the university.

E-learning course development is more art than engineering

The previous section shows some typical problems with creating and using the e-learning courses. Our survey was mainly focused on teachers who do not teach information technology and they want to continue with using the e-learning courses. This section combines some important rules from knowledge engineering (Schreiber 2000) and software engineering (Bieliková, Šimko&Šimko 2017), which can help the teachers start and improve the e-learning course. Although the web space is full of best-practices, rules, patterns, modules, and advice how to create e-learning course and how to avoid the problems it is very complicated and time-consuming to start read all and combine it in some way. We stress on the basic principles of the software engineering and the method ADDIE (Serhat 2018), which is suitable for preparing training courses and e-learning courses. ADDIE gives a good framework for building e-learning course following various software engineering approaches and allows to add some steps from knowledge engineering.

Software engineering is concerned with specifying, designing, developing and maintaining software. It uses knowledge from computer science and project management and other areas. In other words, software engineering deals with the theory, methods, and tools needed for software development. The definition result is, that software engineering is oriented more on the practical software development. It means it suggests the appropriate methods and technics of software development. Here is necessary say, that also in e-learning we can use many software tools, but we do not need to develop each of them. We consider the e-learning course as a knowledge system. It is a system, where we integrate more software tools (documents, presentations, multimedia etc.) usually on one platform. We know more methods and technics how to develop and implement software, but always it is important to come out from the software characteristics. For example, for robust information system development, we should use a different method as for the development of a small desktop application. However there are some differences between methods, software development has its own step order. The progression of software development is compound from the phases. We know the six main phases (Bourgeois, Bourgeois 2017):

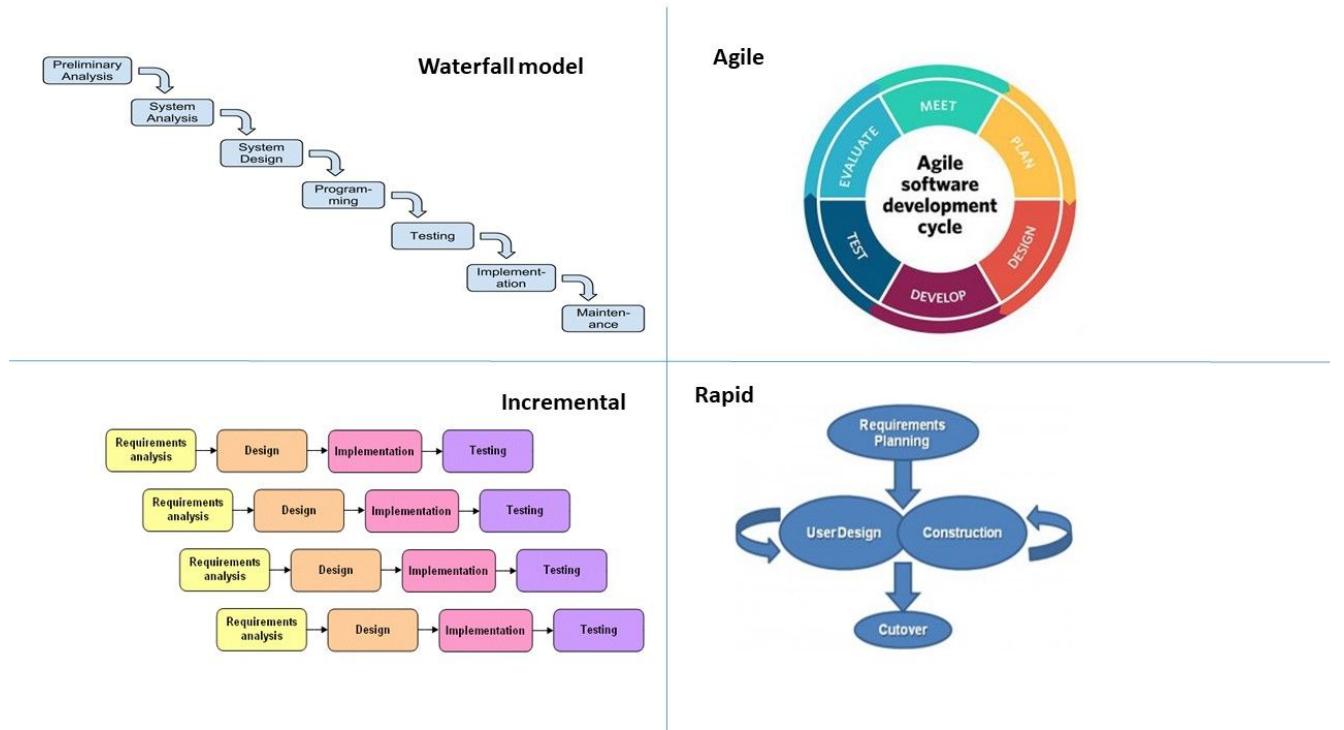
1. Analysis of future software, respectively of an information system. It mainly includes detection of software requirements and future software features. In this phase is important to find relevant domain area and purpose of future software within the scopus of many alternatives which are offered. It is also necessary to gather requirements from future software users.
2. Creating a Design. A software design is based on the analysis and should be more detailed turned into the technical language (the various technics, diagrams, which should follow strictly some principles necessary for programming) in this phase.

3. Implementation. It means coding software in chosen programming language. The code is created based on more detailed technical design.
4. Testing. The phase of testing is about software tasting against the previous users and project requirements. Here we know functional-testing as unit testing, integration testing, system testing, testing of acceptance as well as non-functional testing.
5. Deployment. It is the phase of spreading the created software to customers.
6. Maintenance. It contents real-time software implementation and maintenance. It is necessary to care about software (to make updates, upgrades etc.) during the whole time of software use.

The other software engineering methods use these development phases with some variations. The concrete method is describing a sequence or a repeating of individual phases in its own way. There is a plenty of software development models and further models belong to the most popular (ISTQB 2017). All of them are in Picture 5:

1. Waterfall model. In a waterfall model, each phase must be completed fully before the next phase can begin. At the end of each phase, a review takes place to determine if the project is on the right way.
2. Incremental model is divided into some functional builds. It means that the software is built through separate blocks/parts. Every part is put into practice as soon as it is created.
3. Agile model is a kind of incremental model, where each release is focused on the better software quality. This methodology is widely spread among project teams and customers because it shows a continuous process and fast results in the practice.
4. Rapid model is another where a project development is divided among small teams who work simultaneously.

PICTURE 5. SOFTWARE ENGINEERING IS LIFE CYCLE MODELS



Source: (Bourgeois, Bourgeois, 2017), (PM, 2017), (TechnologyUK, 2018)

All these models are usable also for the e-learning course developing with some specifics. (Winstead 2017). The Waterfall model was first and used especially in the past, but it shows necessary phases, which are included less or more in each of further. The disadvantage of a waterfall model is a long time from the first phase to the realization. In these days the software development should be faster than before. Therefore the agile methods are preferred more in the practice (for example SCRUM, XP, Adaptive Software Development, etc.). As we mentioned before, there is an e-learning development method named ADDIE that follows the principles of a waterfall model. ADDIE was developed as a hierarchical model, but it is possible to use it more dynamically. ADDIE stands for Analysis, Design, Develop, Implement and Evaluate. These phases are in Picture 6. (Exploring ISD&eContent 2011)

PICTURE 6. ADDIE METHOD OF IMPLEMENTATION E-LEARNING COURSES



Source:(ADDIE Framework 2011)

1. Analysis phase classifies the instructional problems and objectives, and identifies the learning environment and learner's existing knowledge and skills.
2. Design phase is a systematic process of specifying learning objectives. The phase stresses on the detailed design of storyboards, prototypes using the appropriate tools for user-interface, graphic design and for the content of the course.
3. Development phase means an actual creation (programming) of the content and learning materials based on the Design phase. This phase contains also the testing and feedback before implementation.
4. During the implementation, the plan is put into action and a procedure for training the learner and for the teacher is developed. It should have been prepared learning outcomes, methods of delivery, books, and ways of testing. This phase is usually made by course manager.
5. Evaluation phase consists of the formative and summative evaluation. The formative evaluation is present in each stage of the ADDIE process. The summative evaluation consists of tests designed for criterion-related referenced items and providing opportunities for feedback from the users. Revisions are made as necessary.

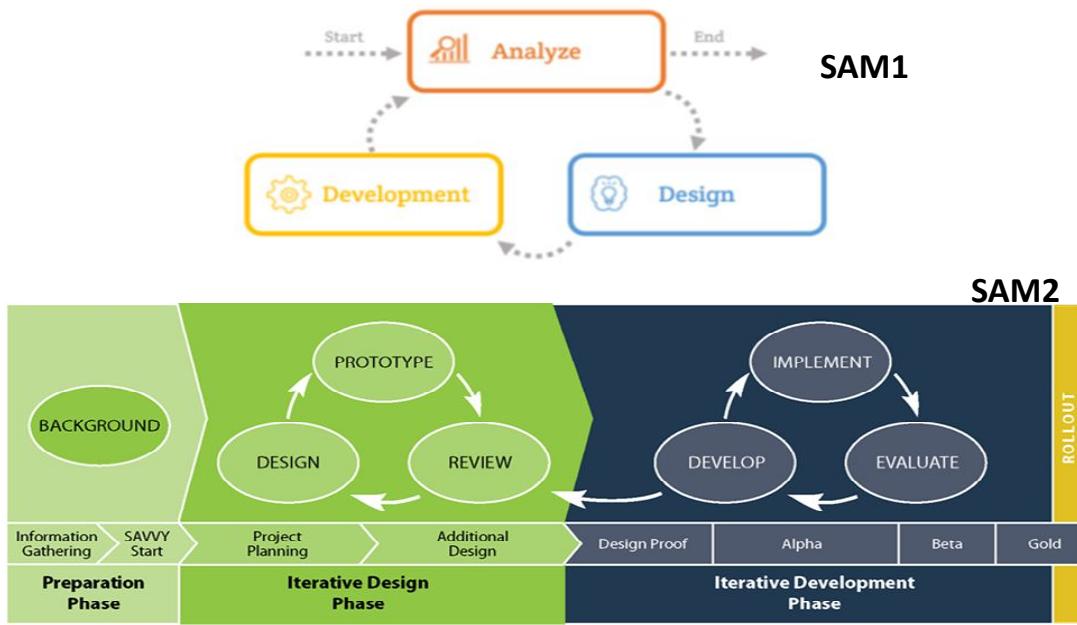
However ADDIE is primarily waterfall model, there is a possibility to change it into the faster and more effective agile model. Each agile model uses sprints lasting very short times (1-2 weeks) with visibly clear progress. Winstead offered in (Winstead, 2017) five steps how to switch e-learning course project ADDIE into the agile one. The most important is not to use a “big picture” of all materials and functions and do not try to prepare it in all details at once. It is necessary to start step by step with short periods (sprints) and add or change the functional tools, which can be implemented at in a moment. So the feedback of users (learners) is very fast. An agile software development is very popular and has also a strong impact on the e-learning courses development. So there is well known model SAM (Successive Approximation Model)

for Instructional Design. The founder of SAM is M. Allen and he outlines necessary criteria of the ideal process modeling (Allen 2012). The SAM is designer model, which meets all these criteria.

- The Process must be iterative - a development is done in small steps with the frequent early evaluations those allow changes.
- The Process must support collaboration - a project team collaborates effectively to take advantage of the ideas, opinions, experience, and knowledge of team members.
- The Process must be efficient and effective.

As Rimmer, T. writes in (Rimmer 2018) “SAM offers an instructional design approach consisting of repeated small steps, or iterations, that are intended to address some of the most common instructional design pain points, like meeting timelines, staying on budget, and collaborating with Subject Matter Experts”. SAM can eliminate the shortcomings of ADDIE (prolonged development cycles, the communication gap between subject matter experts-the teachers and the developers, no time for testing) and brings a good opportunity for cooperation and collaboration of all stakeholders. Agile process SAM allowing teams to create and refine prototypes based on users feedback (again Evaluation). Ideas and assumptions are discussed and tested early, thus allowing for relatively quick development. Although the SAM seems to be great, because of high flexibility, it is not always true. The problem can start when the expected feedback of users does not come after each iteration. Agile methods are based on the process-oriented methods, where after each iteration is necessary to wait for user feedback. The testing and adding new user requirements or corrections brings new development iteration. Therefore the SAM in the clear form is better for instructional design in business companies (e.g. education and e-learning for employees), not for stone universities. The university environment and the users (students) feedback are not fast and flexible enough for bringing another iteration in the course development in a short time. SAM has two modification: SAM1 and SAM2 (Rimmer, 2018). SAM1 is a basic model well suited for smaller projects and repeats the process through three iterations — Evaluation / Analysis, Design, and Development (Picture 7). SAM2 is advanced model and is more suitable for more complex e-learning projects and for e-learning development that requires advanced programming skills (e.g. open source LMS with the possibility to create new modules and features. The work in the model is divided into the three distinct phases: Preparation, Iterative design, and Iterative development (Picture 7).

PICTURE 7. SAM AGILE METHOD OF IMPLEMENTATION E-LEARNING COURSES



Source: (E-learnign heroes 2018), (Agile e-learning development 2018)

Looking back to software engineering we can see that the instructional design models follow the phases of software engineering except the last one: the maintenance. The maintenance is very important and is hidden in the iterations of SAM, because the requirements of users (the teachers and the students too) are changing in the time and the content and structure of the e-learning course can be changed (the maintenance of knowledge and IT tools maintenance). The ADDIE also allows to make maintenance in the cyclic form. We described only the two valuable instructional design models from many others (Cullata, Kearsley, 2018) to find software engineering approaches. But the creation of e-learning course at university has some specifications. It was shown in the survey. Instructional Design models are more oriented as team projects and it is the main obstacle comparing the results of survey. The teachers usually design and create the e-learning course without “project team”.

Although the creation of the e-learning course is activity, that takes a lot of time, there is a possibility to do it step by step in an incremental way similar to SAM1. Especially, when one teacher is the creator of the e-learning course. Here is necessary to follow the main three questions of knowledge engineering: “Why? What? How?”

First question “Why?” means: why I want to create the e-learning course; whether it brings some benefits not only for me as a teacher but also for students; whether I can use the course with some modification in the future; whether the support of my effort will be evaluated by university management etc.

Second question “What?” contains some important questions concerning the content of course. The most important is, whether the course should give only information for students or the knowledge (here is a difference by choosing the IT tools). Then is necessary to identify the type of knowledge, as was

mentioned before. And finally to define structure of the course (lectures, exercises, discussion, assignments etc.) and to make a plan how to create the course incrementally (what is the priority for first step – to offer lectures or to give some home-works, assignments or tests etc). There is more ways how to get started e-learning course, but very useful is to prepare plan of future incremental implementation (independent from IT tools).

The third question “How?” is oriented to choose the appropriate information technologies and their adequate usage. Usually, the teachers use school LMS, but not always it is the best solution (depends on content and knowledge type). However in this phase is important to implement incrementally all learning materials following the partial learning objectives. Incremental implementation means to divide whole process into a few cycles. For example to choose the first cycle of implementation: first learning objective is to offer study literature and lectures and therefore the first cycle contains the selection of appropriate IT tool for the lectures based on previous analysis (presentation, pdf files, videos, audio files etc.) In this case, the e-learning course creation is a long-term process with many cycles (adding functionality, changing IT, evolving a new knowledge etc.), so the main question of analysis “Why? What? How?” are actual in every development and implementation cycle. There is a huge amount of advice on websites, a huge amount of methods, but in the fast-changing environment and fast-changing requirements, which often make a press on the teachers, are the three questions good help for fast analysis in every life cycle of the e-learning course.

Conclusion

The article deals with the development and implementation of e-learning courses through the use of knowledge engineering and software engineering. Both of these disciplines help to design and implement e-learning courses. Knowledge management is important in selecting the types of knowledge and information to be taught. KM explains the difference between teaching knowledge and teaching information. The development and implementation of e-learning course is similar in many procedural processes to the software development process. Software engineering deals with software development. The most important approaches to software development are waterfall approach and agile approach. Both approaches are used in the development and implementation of e-learning courses - in the ADDIE methodology and the SAM1 or SAM2 methodology. The ADDIE methodology is based on a waterfall approach to software development but can also be modified to agile approach. SAM1, SAM2 methodology is an agile methodology for teamwork.

In continuation of the survey study, a questionnaire survey was carried out which focused on the use of e-learning and the creation of e-learning courses. Teachers of university or secondary school was attended the survey. The survey showed that teachers are not focused on teamwork. Most teachers don't know the methodology development and implementation of e-learning courses and don't know well to differentiate

the type of knowledge they teach. Based on the review and survey, we can conclude that an appropriate method of implementation e-learning course is agile approach. It is appropriate to use the modified ADDIE methodology or the SAM1 or SAM2 methodology to implement the e-learning course. In the initial analysis, it is necessary for both approaches to define the types of knowledge that will be the content of the course and to select the appropriate tools for creating an e-learning course. SAM methodology is oriented to support teamwork for process modeling and should be used when creating e-learning course just when we have minimal 3 members of the team for example developer - course creator, content creator - teacher, students -for feedback. If the e-learning course is created by of teacher or developer himself, it is appropriate to use the modified agile version of the ADDIE methodology, but do not forget about the maintenance of the e-learning course.

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e-mail of corresponding author: ladislava.knihova@mail.vsfs.cz, vladislav.pavlat@mail.vsfs.cz**Key words:** Assessment, Innovative training methods, Knowledge transfer, Open education, SMEs.

Abstract: This paper aims to address the question of knowledge transfer within small and medium sized enterprises (SMEs). The authors will identify, analyse and put into context successful learning transfer pre-conditions and their role in the business achievements of SMEs on the verge of Industry 4.0 with its almost unpredictable innovations. The underlying premise is that the transfer of knowledge and skills as a process following formal education has a significant impact on the value that the organization gains. In business practice, training and development in SMEs is usually evaluated with the help of quantitative indicators, e.g. number of training sessions and courses, and employees' feedback on the perceived content comprehensibility, or lecturers' performance. However, the real transfer of knowledge into company practice is measured infrequently. The authors of this paper perceive current practice as a painful point in the whole process of education and training assessment. Even a small enhancement of knowledge transfer into SMEs' daily operations has a significant impact not only on their position in the competitive market-place but also on their bottom lines. On the other hand, insignificant or almost invisible knowledge transfer is a waste of considerable financial resources. Employing literature review and specific examples from business practice, the first section of the paper examines the transfer of learning in relation to business results and sustainable HR management. The second chapter gives a brief overview of innovative education and training methods used in corporate education and learning. The next part of the paper focuses on learning events and barriers to learning transfer. The exploratory analysis findings and their interpretation will provide a stepping stone for further work with the aim devising a state-of-the-art methodology for the evaluation of education and training through the prism of learning transfer accompanied by tangible benefits for stakeholders in the sector of SMEs.

Introduction

As a rule in current business practice, corporate education assessment usually takes place at a rudimentary level. It is common practice for companies to obtain feedback from their employees (graduates of corporate training) that is related mostly to the training content and the quality of the lecturers. From this, a basic evaluation process follows. Unfortunately, more revealing questions such as, e.g. *Which of the newly acquired skills can you use in your work tomorrow?*, are rare. In addition, the real transfer of knowledge into company practice is measured very sporadically. The authors of this paper perceive current practice as a painful point in the whole process of education and training assessment. It is significant to mention that a high level of efficient and effective transfer of knowledge and skills into the practical activities of firms has a significant impact on the company's position in the competitive environment and on the added value that the organization obtains. On the other hand, poor results from corporate education services merely waste considerable financial resources without reaching educational objectives and without adding revenue to the bottom line. Within the next few years, corporate education that focuses on putting true learning transfer into practice is destined to become an important component in business strategic planning.

Another important issue worth highlighting is the link between the precise formulation of research objectives related to corporate education assessment and a company's real needs. A great deal of research is needed and business processes need to be set up in a smart way enabling barrier-free communication

between HR departments - as education/training providers - and business strategists, who should have a clear, distinctive and vibrant vision of a particular company and its future needs.

Literature review

The themes specifically relating to corporate training and learning transfer have been the focus of attention of many authors as, in recent years, there has been growing interest in knowledge management's current trends and new challenges. Interestingly, business strategists and analysts, as well as academia, tend to contribute to the topic evenly and frequently. The first systematic study was conducted in 2003 in a publication by the Society for Industrial and Organizational Psychology. It is an extensive monograph under the title "*Improving Learning Transfer in Organizations*" (Holton & Baldwin 2003). It is an important resource because it examines the situation in companies and consequently suggests guidelines; the principles as well as lessons learned can significantly influence the practice of learning transfer in organizations. A precarious situation may occur when highly skilled subject matter experts leave their organizations or retire and take with them hard-earned, specific experience-based knowledge. Very often, businesses can even lose their competitive advantage as a result of this. Dorothy Leonard and Walter Swap first addressed this issue in "*Deep Smarts*", a publication based on empirical research. (Leonard-Barton & Swap 2005). The authors performed even more extensive and deeper original research. They revealed interesting findings from numerous interviews with top-level managers. These findings complemented their vast experience in the field of knowledge management. In their latest monograph "*Critical Knowledge Transfer*" (Leonard-Barton, Swap, & Barton 2015), the authors demonstrated a brilliant capacity for translating somewhat complex concepts into practical ideas for business managers. However, it is not only monographs that focus on the topic of learning transfer. In 2017, The Journal of Entrepreneurship, Management and Innovation (JEMI), indexed by Web of Science, published a special issue "*Knowledge Management – Current Trends and Challenges*". (Journal of Entrepreneurship, Management and Innovation 2017). In this issue, researchers from diversified industries tried to answer the question of successful knowledge management as a reaction to the situation that more and more business managers started perceiving knowledge as a valuable resource at the level strategic assets. These are just a few examples of publications with a proven innovative approach of their authors which is endorsed by experience.

In order to reach the stated objectives, the following *hypotheses* have been formulated:

H1 In the sector of small and medium-sized enterprises, corporate training is provided by more than 90% of businesses.

H2 The relevance of corporate education to the business needs is a high priority goal for managers who set

up the processes carefully to get feedback about the quality of the provided corporate training.

The authors of the paper assume that new findings related to innovative learning transfer and sophisticated knowledge and skills management have the potential to contribute to the scientific, pedagogical and practical needs of all organizations, businesses and individuals interested in this research topic. Some old issues related to learning transfer have not been solved yet while new ones are emerging. This still leaves many aspects of this subject unexplored. However, the authors' main concern is the proactive management of the learning transfer process in modern corporate education. Also, thanks to this research, their aim is to encourage much needed closer cooperation between academia and corporate practice.

Last but not least, it is important to state that this paper, including preliminary research findings, is the first part of the Project "*Learning Transfer: Methodology and Assessment of Educational Services of Selected Czech SMEs in a Competitive Market*" funded by the Internal Grant Agency of The University of Finance and Administration, while the comprehensive research findings will be revealed at DisCo 2019.

Methods

Within the framework of educational services provided in-house, the research work prepared by this paper's authors will focus on monitoring and measuring the transfer of knowledge in companies in all its phases, i.e. from the preparatory stage (the preparation of the company participants training to acquire new knowledge and skills, their motivation, compliance with career goals, etc.) through the design of activities related to the transfer of knowledge itself (methods, tools, setting educational goals, evaluation) to the questions dealing with the educational infrastructure, support of the whole system of education by the organization (managerial support, close connection of education with specific job position, etc.) and the careful selection and customizing of educational content.

At the Project's preparatory stage, preliminary research into the topic has been carried out with the objective of obtaining relevant information on current practices in SMEs' corporate education assessment.

The authors used the following research methods: description, an exploratory probe (online questionnaire followed by evaluation), an exploratory analysis, generalization, and synthesis of the research findings.

In harmony with the European Commission Recommendation of 6th May 2003 concerning the definition of micro, small and medium-sized enterprises (notified under document number C (2003) 1422) the sample of respondents – employees - was requested to disclose the category of the firm for which they work. (Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, 2003)

For the purposes of their preliminary research in the form of an exploratory probe, the authors designed their survey with the help of the SurveyMonkey online platform. The data was collected in the period from

1st to 7th June, 2018, with the use of an online questionnaire distributed via email, social media and with the help of personal face-to-face requests by the authors to the respondents. Different types of research questions were used (multiple choice, open-ended questions, closed-ended questions, and one scale question. Altogether, 29 responses were collected. The questionnaire was distributed in Czech and English language versions to enable English speaking managers to take part. Answers to the research questions follow.

FIGURE 1 QUESTIONNAIRE

Questionnaire – research questions (English version only)

1. Does your company provide you with on-the-job training?

- Yes
 No

2. Are you given an opportunity to provide your employer with feedback about the quality of the training provided?

Yes

No

3. On a scale of 1 – 5 (with 5 being the most positive) describe the relevance of the on-the-job training provided by your employer to the needs of your job position.

1 2 3 4 5

4. What corporate training evaluation criterion do you consider the most important?

5. What evaluation criterion did you miss in the questionnaires you had filled in for your employer?

6. What type of training do you prefer?

- face-to-face training with a lecturer
 e-learning form
 combination of a/m methods
 other (please specify)

7. What is the size of the company you work for?

- 2 to 9 persons (micro-enterprise)
 10 to 49 persons (small company)
 50 to 249 persons (medium-sized company)

Results

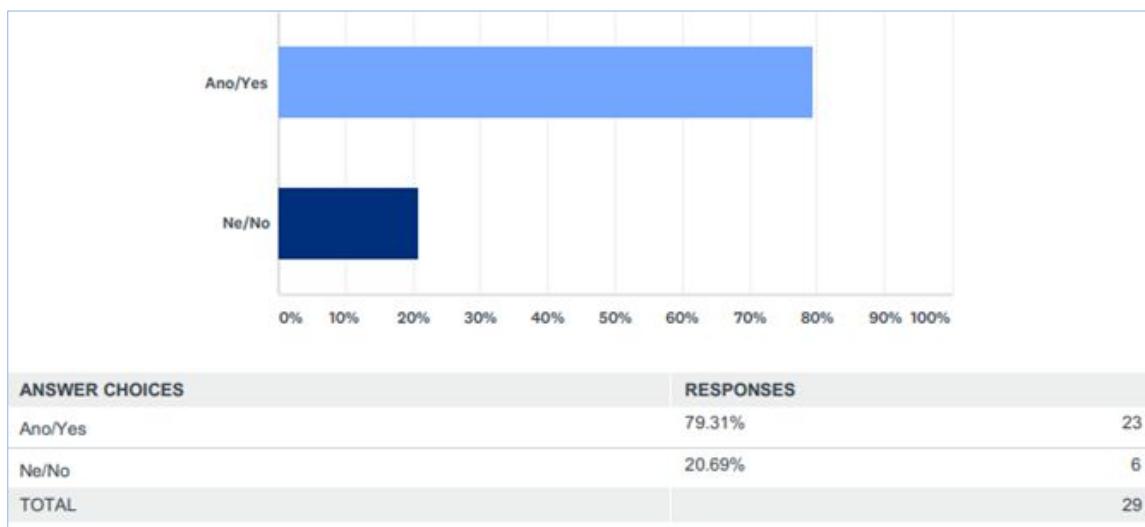
Given that our findings are based on a limited number of respondents, the results should therefore be treated with considerable caution. The authors would like to highlight the fact that in the initial part of the

Project a preliminary survey was designed with the aim to get entry data for further elaboration, precise formulation and extension of research questions for the following main Project's survey.

The structure of respondents falls into the following three categories: (1) micro-enterprise – 21.43 %; (2) small company – 32.14 %, and (3) medium-sized company – 46.43 %.

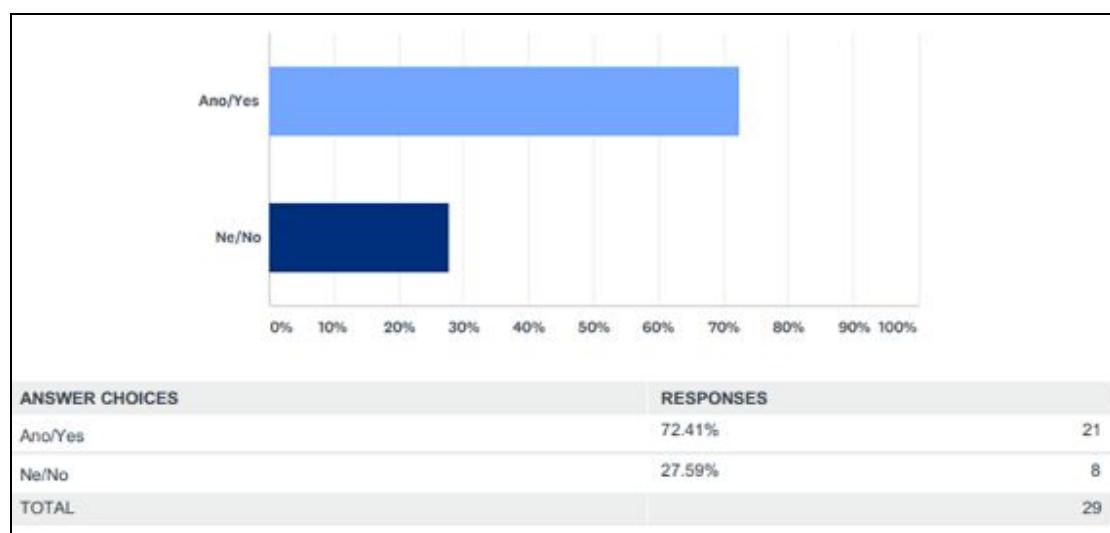
For the purpose of this paper, the authors have selected several relevant research question shown and commented on below.

FIGURE 2RQ JOB TRAINING DOES YOUR COMPANY PROVIDE YOU WITH ON-THE-JOB TRAINING



Authors' comment: The original assumption of the authors that more than 90% of SMEs provide corporate training appears to be over-predicted. The number is slightly lower than the value expected. Further research will clarify the reasons why not all business are willing to provide corporate education.

FIGURE 3 RQ ARE YOU GIVEN AN OPPORTUNITY TO PROVIDE YOUR EMPLOYER WITH FEEDBACK ABOUT THE QUALITY OF THE TRAINING PROVIDED?

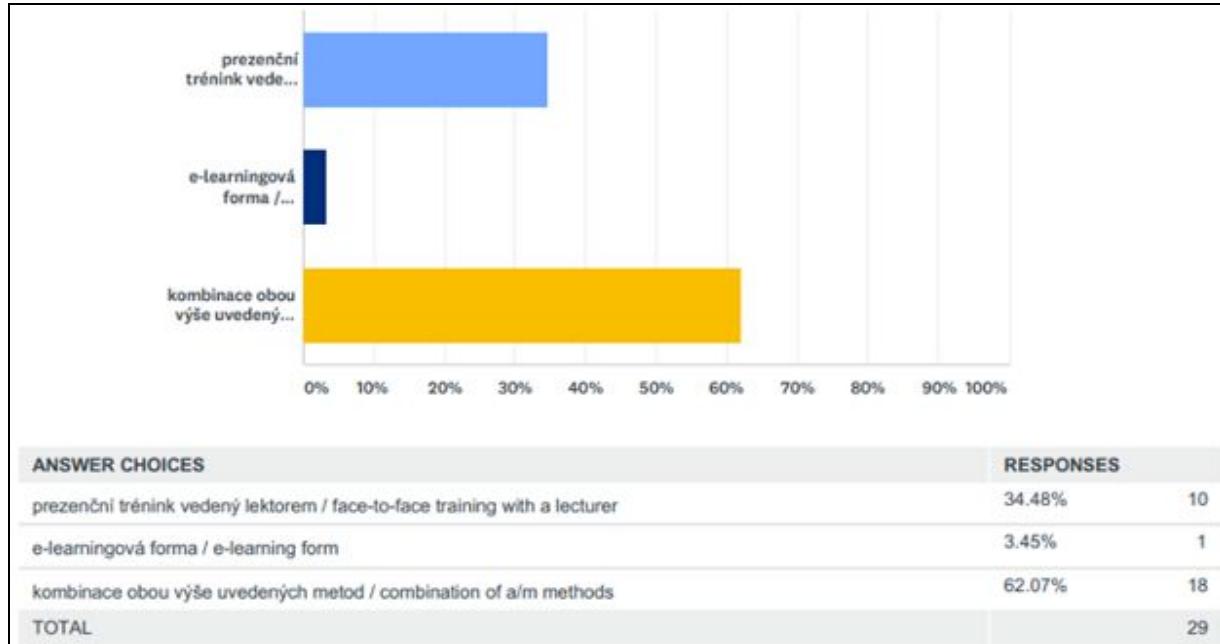


Authors' comment: The fact that almost 1/3 of respondents doesn't tract the corporate training feedback is rather striking. Successful feedback does not consist in a 'formal questionnaire' only. One of very important aspects is to ensure anonymous feedback as anonymity encourages people to give more honest feedback.

FIGURE 4 RQ ON A SCALE OF 1 – 5 (WITH 5 BEING THE MOST POSITIVE) DESCRIBE THE RELEVANCE OF THE ON-THE-JOB TRAINING PROVIDED BY YOUR EMPLOYER TO THE NEEDS OF YOUR JOB POSITION.

	TOTAL
1 Relevance	6
2 Relevance	2
3 Relevance	8
4 Relevance	10
5 Relevance	3

FIGURE 5 RQ WHAT TYPE OF TRAINING DO YOU PREFER?



Authors' comment: The fact that only one respondent prefers corporate training in an e-learning form is a challenge worth elaborating. There is no other way than (1) to suppose that the respondents don't have positive experience with e-learning, or (2) they have no/very little experience. Based on the authors' own experience, the option of a combination of a face-to-face learning event complemented by online study materials with the purpose to extend or revise the topic is currently the best option.

Transfer of Learning

In previous section, the survey results brought insight into the issues related to corporate training. It can be reasonably assumed that the next decade will be marked by many (disruptive) innovations in any type of industry. Consequently, the importance of corporate education will be enormous, should SMEs want to stay competitive.

Under ‘Industry 4.0’, many traditional jobs are disappearing as a result of technological advancement. Simultaneously, new jobs are coming into existence. New types of jobs require new skills. These can be difficult to obtain within formal learning institutions. Digital marketing practical skills, e.g. Google AdWords, SEO, PPC advertising etc., are good examples of this. Knowledge is power, as the saying goes but, to seek out new knowledge and learn new skills is merely a pre-condition to the next important step, i.e. learning how to apply knowledge and skills to benefit others, e.g. society or employers. It is important to understand learning transfer per se and its implications, importance and impact for the business.

Transfer of Learning is ensuring that what people learn on a training programme is transferred into real business results. It is important for business to learn how to enable individuals to transfer new skills and knowledge from a learning environment into their habitual behaviours at work. (What is Learning Transfer? 2018). Creating tangible business results is the key objective of training in any organization or business. Therefore, within their business development scenarios, far-sighted managers should focus on upskilling and retraining current workers.

Transfer of Learning – a new approach can be seen in Amazon’s totally different attitude towards education and training, introduced in 2012: “*The company will provide its warehouse employees with up to \$ 2,000 of the tuition costs for training in well-paying, high-demand careers. Among the acceptable fields are aircraft mechanics, computer-aided design, machine tool technologies, medical lab technologies and nursing.*” (Amazon Warehouse Workers Getting Tuition Break 2012) Amazon CEO, Jeff Bezos, by his Career Choice Program gives “[...] *warehouse employees the opportunity to advance their careers, even if their field of choice is unrelated to Amazon.*” [...] “*It can be difficult in this economy to have the flexibility and financial resources to teach yourself new skills,*” said Bezos in his homepage statement. “*We're excited about it and hope it will pay big dividends for some of our employees.*” (Amazon Warehouse Workers Getting Tuition Break 2012)

Amazon has now extended this initiative to eight other countries, including the Czech Republic. In the CR, with the pre-condition of completing a minimum one-year-long working contract, Amazon employees can complete their education and study in a number of popular fields of study, such as accounting and economics, information technology, health, construction, public administration, transport and logistics and, of course, English language courses. Such study must be accredited by the Czech Ministry of Education, and all foreign language courses have to be accredited. Amazon will pay tuition fees, fees, and textbook

costs for up to 30,000 Czech Crowns a year for four years – a total of up to 120,000 Czech Crowns. Apart from this, Amazon gives on-the-job training a high priority, too. (Amazon finančně podpoří vzdělání svých zaměstnanců 2015)

Amazon's approach is a game-changing strategy towards corporate training. The learning transfer, funded by the employer, is not directly tied to creating tangible business results. Rather, other objectives are pursued. This is an example of both sustainable HR management and sustainable entrepreneurship as examined by e.g. by Ehnert, I. et al. (2012; 2014) and Schaltegger, S., & Wagner, M. (2006).

Innovative educational and training methods

With the inception of Industry 4.0, business managers must anticipate profound changes in many aspects of business management, including modern sustainable HR management and corporate training. Competition will be intense. If only 20% of learning is actually transferred back to the workplace, as quoted by Emma Weber, founder of Lever – Transfer of learning (What is Learning Transfer? 2018), there will be an absolute necessity to start using the most innovative methods of instruction. Apart from microlearning, social learning and the intensive use of MOOCs (their localization into the Czech language is an option to consider) and mobile learning apps, the corporate environment's portfolio of teaching/learning methods will be enriched by the phenomenon of augmented reality (AR). Perhaps SMEs will not be the first to adopt AR educational solutions but, with the falling costs of IT solutions, they will soon implement these solutions as well. In the meantime, it is highly recommended to start preparing teams of managers for the implementation of AR into their business strategies. At the end of 2017, the Harvard Business Review published a collection of articles entitled, "A Manager's Guide to Augmented Reality". A study "Why Every Organization Needs an Augmented Reality Strategy", co-authored by world-acclaimed Michael E. Porter and James E. Heppelmann, was published in the Harvard Business Review as a part of this Guide. It is a must-read for anyone interested in augmented reality (AR) and its practical application in the business world. More and more educational mobile applications come into existence every minute every day and, already today, many companies benefit from new technologies. The business impact of learning transfer enhanced by AR solutions can be tremendous. Emma Weber can see great potential in learning transfer enhancement, among others in increased bottom line sales, improvement in leadership capability, improved regularity in one-on-one meetings, and improvement in communication with employees. (What is Learning Transfer? 2018)

Augmented reality (AR) appears very high among the results of a survey carried out by Patti Shank, PhD for eLearning Industry. The survey is called "Which Skills Do Workplace Learning/eLearning Practitioners Need?" and Patti Shank, PhD is recognized internationally for her contributions to the Learning & Development field - especially for her evidence-based analysis and design to improve the outcomes from training and performance initiatives. The responses were solicited from 17th January 2018

to 5th February 2018 and the survey received input from 2017 respondents in 105 countries. Respondents said they need to learn or improve specific tools, technologies, media, design, assessment, and management skills. Specific skills in the form of a word cloud are based on the results of this survey.

PICTURE 1. SPECIFIC SKILLS WORD CLOUD



Source: Which Skills Do Workplace Learning/eLearning Practitioners need? – Survey (2018)

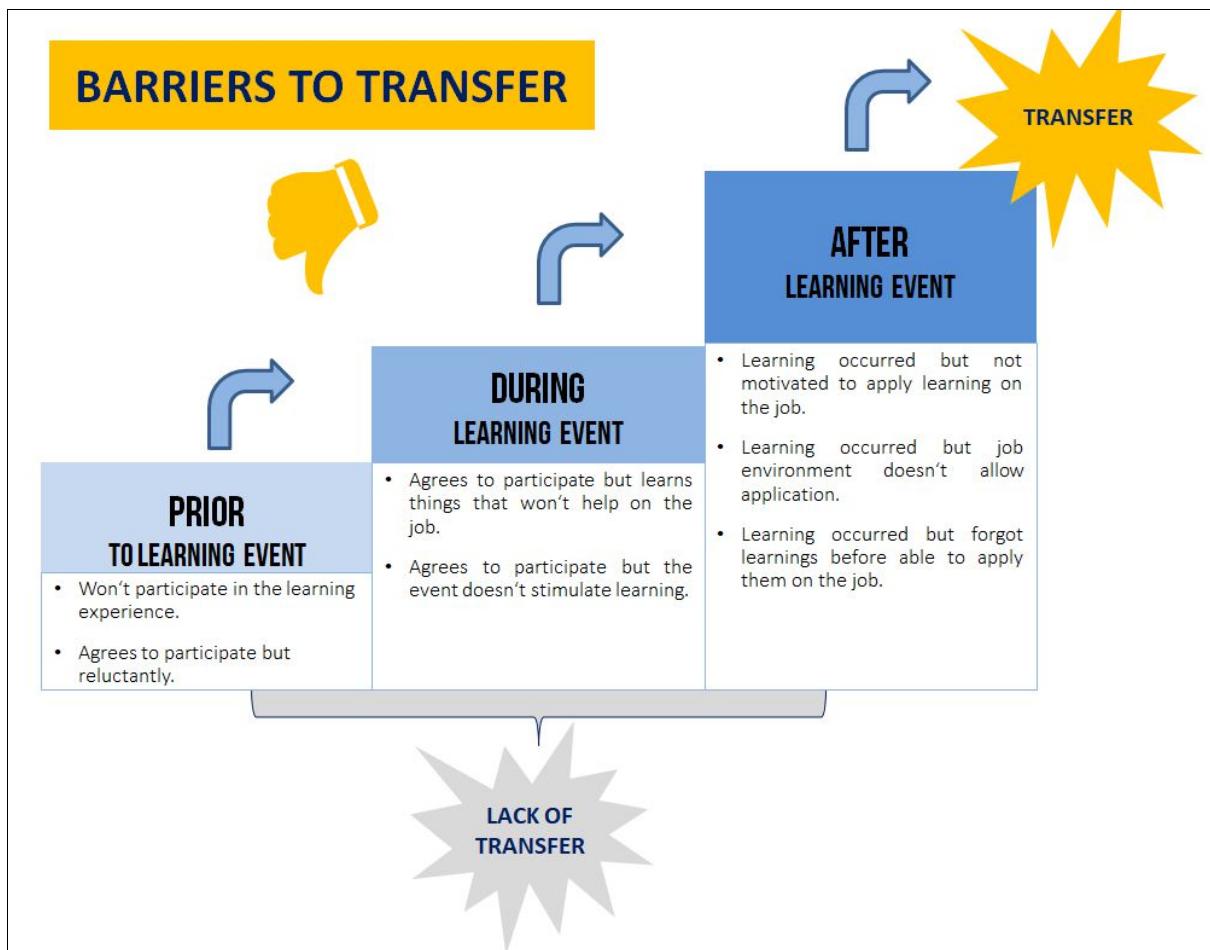
Learning events and barriers to learning transfer

In this research, a learning event is to be understood as “[..] any training, e-learning, or on-the-job experience specifically intended to build someone's capabilities.” (Improving learning transfer in organizations 2003, 166).

Regarding barriers to learning transfer, generally speaking, we can consider variety of socio-psychological and economic aspects. Holton and Baldwin divide barriers into four categories: “[..] trainee attributes, motivational factors, the training itself, and the post training environment.” (Improving learning transfer in organizations 2003, 169). Barriers to learning transfer may be on the side of an employee (e.g. fear of incompetence, lack of motivation), or due to the training design itself (too progressive or outdated) as well as no longer effective training methods, incompetent coaches, lack/absence of feedback, or irrelevant training content etc.). It is not an exception today that SMEs management is not ready or perhaps cannot afford to invest into new educational technologies.

Between any learning event and learning transfer, individuals must also overcome many barriers. We can visually depict the barriers to learning transfer on a timeline with three events as follows:

FIGURE 6 BARRIERS TO LEARNING TRANSFER



Source: own based on Improving learning transfer in organizations, p. 167, 2003

Conclusion

In this paper, the authors presented the results of the first part of the Project entitled “*Learning Transfer: Methodology and Assessment of Educational Services of Selected Czech SMEs in a Competitive Market*” funded by the Internal Grant Agency of The University of Finance and Administration. The findings of the preliminary exploratory probe suggested important implications and several courses of action to be taken in the next phase of the Project. The authors are confident that the presented results may considerably improve the insight into corporate training with a special focus on learning transfer within small and medium-sized enterprises.

In view of fresh data, both the hypotheses formulated in the Introduction have been rejected. However, taking into account the current research limitations, especially insufficient number of respondents, a more extensive quantitative research may bring more precise data. Then, the educated guesses might change as well and bring more positive data.

The situation concerning corporate education and on-the-job training is changing in a dynamic way as a result of growing competition in every industry. In many respects, the collected data appear rather unbalanced and inconsistent which may be a signal of dissimilar situation in SMEs due to a variety of different reasons. If there is no possibility of getting the employee feedback about corporate training in almost 30% of responses, then advanced techniques of learning transfer within SMEs seem rather premature. However, there is certainly always room for improvement.

Within the next few years, corporate education that focuses on putting learning transfer into practice is destined to become an important component of business strategic planning. It is in the core interest of the authors to devise a state-of-the-art methodology for the evaluation and training through the prism of factual learning transfer. The authors are convinced that this research will help to tackle and solve the complex problem of methodology design successfully, not only for the benefits of shareholders in SMEs but also for anybody concerned with education. If we strive for long-term economic prosperity, the controlling processes have to be set up in the first place in order to prevent disinvestments. The whole process does not finish by corporate training. Just on the contrary. It starts with it.

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Media and Information Literacy

ALBANIAN THE LAST TWO DECADE IN THE CONTEXT OF MEDIA AND INFORMATION LITERACY IN LIBRARIES, EDUCATION AND LIFE LONG LEARNING	ATHINA BASHA OSCE Presence in Albania, Tirana, Albania
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Keywords: Information Literacy, Libraries, Media, Albania, Reading, Youth, Curricula, Life Long Learning	
<p>Abstract: Research carried out in 2014 was to provide sufficient evidence of : (1) the level of knowledge of Information Literacy (IL) in Albania starting from academic environments and public institutions to the general public; and (2) a study of the policies and practices available from the responsible institutions for improving IL.</p> <p>The Findings suggest best practices for publishing and spreading IL; policies and practices that should be applied by central institutions; current practice of libraries.</p> <p>In order to effect an early and thorough change in the perspective of IL polices and strategies from the top down level, the chosen research method was a quantitative survey with a questionnaire as an instrument.</p> <p>The research targets the national level, but was distributed only in Central Albania. The survey has shown that the government and its ministries, libraries and universities, lack an understanding of the concept and use of IL. There are no national strategies, programmes, seminars or IL courses offered or planned to be offered within the various curricula. The concept is often confused with information and communication technology (ICT) and libraries also lack the right infrastructure to support the development of a global knowledge society.</p> <p>Findings and conclusions on the current state of IL, as it affects the daily life of Albanians, shed light on the importance of IL in the future development of Albanian citizens. This study wants to promote a national discussion on IL issues and it will be helpful for the ministries, libraries, universities, as well as other governmental institutions, to prepare 'A National Action Plan' for IL and its future in Albania.</p> <p>New library and education strategies and initiatives will be proposed, including the outlining of changes in curricula, support and advancement, in the following document.</p> <p>New realities require new skills to navigate, evaluate and use information. Universities, libraries and library associations, collaborating with other institutions, are crucial in assisting all levels of users in using information properly in professional and daily life decisions.</p>	

Introduction

I was first exposed to the Information Literacy concept as a participant at a UNESCO Training the Trainers in Information Literacy Workshop, September 2008 in Ankara, Turkey.

As manager of the Public Library of Fier in Albania for more than ten years, I was invited to share, on one of the panels, the new practices and experience of the Public Library of Fier. After being exposed to all these new concepts and developments in Information Literacy not only in Europe, it was clear to me that our achievements in our library were not the result of following the standards and indicators in the field of Information Literacy. It was the need for these new services, it was the inspiration from services seen in other libraries abroad, the need to explain to authorities, donors and stakeholders to support us for the new services, and it was the desire to do something for our community. Returning to Fier, I began to write an article on my impressions of the Conference and soon found, there were no articles in Albanian about IL, nor was there even any official agreement on the translation of the term Information Literacy. Realizing that there were too many things to be explained, and that my simple article would not solve the problem, therefore I began this study.

The findings of Information Literacy Baseline Survey used for this thesis, provide the current understanding of IL in Albania including its libraries' infrastructure and their challenges.

With this knowledge, we identify the needs, and suggest measures and practices, and possibilities for support and collaboration in IL initiatives sorely needed in Albania to be used in inter-institutional consultation.

Adapting to developments in the “Information Age”, rapid development of ICT, internet and web 2.0, mobile devices, fast growth of various digital information sources and services, requires a high degree of IL skills. A 2000 survey of the Organization for Economic Cooperation and Development (OECD), an adult literacy survey (OED, 2000) reported, that across 20 countries, one in four adults who participated in the study do not possess the necessary literacy skills to cope in today’s world. A reasonable assumption is that the study took place in poorer or less developed countries, but this is not the case. The sample included the USA, Canada, and four Scandinavian countries, Germany, the UK, Ireland, Australia and New Zealand. Albanians can be included in lacking skills and strategies, causing a gap in knowledge.

Some Obstacles Related to Information Literacy Development

Education is possibly the best tool we have for tackling poverty. Literacy is at the heart of education, and is a basic human right. When people have the chance to learn basic life and literacy skills, economies grow faster and poverty rates decline (World Literacy Foundation 2013).

Based on the survey results and the deliberations of the United Nations Educational, Scientific and Cultural Organization - Central European Initiative (UNESCO-CEI) workshop on information literacy, the following conclusions have been drawn regarding the information literacy situation in the region, as given in the next section below (only the part related to the library is quoted) :

“...the challenge is insufficient understanding of the concept and its relevance to today’s information society...Moreover; there are specific shortcomings in the library sector. In particular, the position of a librarian engaged in information literacy instruction has not been defined. Where programmes are provided, librarians often do the work as volunteers, although these specialized roles require training and need institutional support. This is the only effective way to ensure that information literacy is embedded in curriculum, teaching, learning and assessment throughout higher education. Elsewhere in the world it is already recognized that these roles require training and institutional support. Therefore, further development of library professionals is needed to extend understandings of the role of information literacy in economic development, and to foster understanding of the importance of embedding information literacy within the content of all disciplines.” (Workshop on IL initiatives for Central and South East European Countries 2006, 4).

Albania was part of this study in 2006. Analysing the context, data gathered in 2012 and the situation in some libraries in Albania today, we will conclude where Albania stands with understanding the concept, strategy, curricula, training or other initiatives related to IL.

Information Literacy Concept

The term ‘Information Literacy’ was first presented by Paul Zurkowski (1974): “people trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information-solutions to their problems”.

Information Literacy is the catch phrase for the entire transliteracy system that includes Visual, Digital, Media, Cultural, Critical, 21st Century Workplace, Metal, Mobile, Global et al Literacies. The IL concept is used in workshops, talks, in many international conferences. The “information age” we are living in and the challenges ahead demand individuals to have more skills.

Information Literacy means the set of skills, attitudes and knowledge necessary to know when information is needed, to help solve a problem or make a decision, how to articulate that information need in searchable terms and language, then search efficiently for the information, retrieve it, interpret and understand it, organize it, evaluate its credibility and authenticity, assess its relevance, communicate it to others if necessary, then utilize it to accomplish bottom-line purposes; Information Literacy is closely allied to learning to learn, and to critical thinking, both of which may be established, formal educational goals, but too often are not integrated into curricula, syllabi and lesson plan outlines as discrete, teachable and learnable outcomes; sometimes the terms “Information Competency,” or “Information Fluency” or even other terms, are used in different countries, cultures or languages, in preference to the term Information Literacy. (Horton 2008, 53-54).

Quantitatively increasing information renders it important to possess the skills necessary for reaching the required information and using the information effectively in line with the requirements. These skills are discussed in the information literacy concept, and educational institutions are expected to provide individuals with these skills. (Bas and Erdem 2013, 188).

There have been different discussions over the recent years related to INFORMATION LITERACY STANDARDS and the environment to which they apply. These contrary viewpoints concerning standards, which were articulated almost one decade ago are still echoed today, even going to such extremes as to claim that such insistence on standards inevitably leads to over-systematization and the predominance of a certain form of generic rubric and a de-contextualized form of administrative paperwork which entirely disconnects IL from pedagogical theories (Jacobs 2008 as cited by Spirane and Zorica).

Librarians are applying these findings by striving to work closely with university administrators and professors to integrate information literacy skills into the student learning process. At the University of Tennessee in Chattanooga, for example, librarians helped write the basic English curriculum, ensuring that the standard course, reaching 78 percent of freshmen, was aligned with ACRL information literacy standards. Today, “students simply cannot pass either semester of freshman composition without

meeting a certain minimal threshold of information literacy in accordance with ACRL standards 1 through 4.”(Digital Literacy Task Force, ALA Office of Information Technology Policy, Report 2013 14).

Information Literacy and Life Long Learning

The Alexandria Proclamation on Information Literacy and Lifelong Learning of November 2005, states that “Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations” (Alexandria Proclamation, 2005).

Information Literacy is inter-related with Lifelong Learning, with the ability to learn the learning process, and to critical thinking, but too often, not only in Albania, they are not yet integrated into curricula. Primarily the education systems, and then the libraries, have another chance to reevaluate their role and goals in this fast changing environment.

Information and the way how to share it are very impressive from the variety of means, spread of development and cost. The ability to stay in touch 24/7 with family, friends and professionals around the globe is no longer a dream for humanity...

Studying without using ICT is unimaginable today. Students themselves see ICT as a tool that contributes to better study results. However, one should keep in mind that overemphasizing ICT may have negative consequences as well: overwhelming by virtual communication, psychosomatic difficulties, loss of identity and others. (Rohlíková, Vejvodová, and Zounek 2013, 187).

“The mobile environment has changed the way people interact with information. They access, they evaluate, they use it differently...This is one of the burdens and responsibilities, that we have to help people to use these devices effectively...First we have to become comfortable among ourselves...” (Miller 2012)

Libraries at all levels have the noble duty to take care of the needs of all the communities they serve. They have to fulfill their tradition role but also create the right infrastructure and programs to accommodate the needs of all age groups and prepare them for the future.

Libraries can capitalize on the current interest in digital literacy while at the same time educating stakeholders as to the broader concepts involved in becoming digitally literate for the long term. In this way, any initiative can have the desired sustainable impact instead of falling short when funding dries up or a new initiative takes its place. Today’s public policy emphasis is on workforce development and economic competitiveness. Even when the public policy focus changes, however, librarians will continue their long tradition of helping individuals master the literacies necessary to be active

participants in society. (Digital Literacy Task Force, ALA Office of Information Technology Policy, Report, 2013, 9).

Information Literacy Practies and Finding

There are many examples from some other countries, international and regional level. Some of them have been for years in the process of applying Information Literacy standards and strategies along with advanced practices in IL context, some are entering this process and some others are missing it. These practices and findings are not a “how-to-do recipe” but an inspiration and example of how to find the right approaches that may be applied to our conditions, to overcome this challenge fast, as well as a possibility to open a discussion and follow-up policies. Below are some findings during the last 2 decades in some libraries in our country.

Examples: Albania

The experiences of the Public Library of Fier in Albania and of some other institutions from 1995 to date are shared below. They are the first researches published regarding these issues in Albania. Nowadays they are normal and simple activities for many libraries in the region, but they used to be challenging during that time and continue to be so for many public Albanian libraries. Future research may compare the situations and share other practices. “The findings of these studies were published by Basha, Vilar and Stricevic (2013).

Opinion survey, Fier Public Library Albania (1995-1996)

From 200 answers received, the average age 25, most readers (70%) wanted to go and find books on the shelves by themselves (the concept “users” and “open access” were not known to the Albanian librarians at that time). Since then, things have changed. In 2000, the library introduced open access to all departments and materials, making the Library of Fier the first public library in Albania to do so. This significantly increased (by 400%) the number of users with library cards, and led to a large number of visitors and users of the new services and activities. Almost every week, local television stations were present to cover the activities.

Introduction of a new service for children and the influence on the number of library users (2001-2002)

The author noticed that the age group of four to six year-olds was not encouraged to visit and use the library. The prevailing concept was that children should register after learning to read. Inspired by the participation in IFLA 1999, ALA 2000, and the study visits in Plum Public Library Chicago, Illinois, and the libraries of Frankfurt Municipalities, the Public Library of Fier introduced “Story Time”, an activity involving reading to small children. To avoid the staff’s resistance to this very new service, volunteers were encouraged. A new and attractive corner was built and kindergarten children were invited once a week. The program was accompanied by creative activities. The example was nationally

shared and some other libraries also tried to offer it. During 2002, 689 children became part of the reading program and they remained permanent users.

A preference survey in various institutions (2002-2003)

During plans to create a new Information and Training Centre, the Public Library of Fier surveyed users for their information preferences (hard copy or electronic). About 250 questionnaires were distributed and 191 filled in. More than 84% preferred electronic information and they appreciated the idea of the information and training centre in the library. At this time, the internet was used only in few offices for administrative use, by a few lucky families, or in a very small number of internet cafés in the city. The results were presented to the donors. Information and Communication Technology (ICT) infrastructure was offered. We offered open access to all materials in all the departments, which was previously not a norm in our library or others in Albania, and provided eIFL, EBSCO and different information and trainings in ICT. This service, funded by the SOROS Foundation, Library Programme, significantly increased the number of library users, especially among youth. Every day, more than 300 people visited the library. This Centre was the next logical step towards the further development of the library.

Survey of all Libraries of Communes and Schools in the Fier Region (2002-2003).

From forty-four schools and commune libraries, only four offered some services and had the space and part-time staff. The survey studied the situation of these libraries after the many changes that occurred in Albania. Another reason was that the Public Library of Fier had many requests from people living outside the city and the library. With its limited staff and number of new books, it could not afford to serve them all. We also wanted to offer training for all the teachers working with the school and commune libraries, who are often language and literature teachers without training in librarianship. After analyzing our data, we invited all district school directors, vice directors, and staff in charge of libraries. They were informed of the new library services and trained to catalogue their books and offer reading programmes.

Who is shaping our opinions? How do we know that our opinions are really our own?(2010)

A survey held for testing one of the IL skills, quality evaluation, and relevance of the information sources. The topic: Is the H1N1 Swine Flu Pandemic True or False?

Findings: 5 of the 6 Employees of an International Organization in Albania think it is false, 1 that it is true. 4 respondents out of 6 think that one of the sources that influenced the choice is media.

As we see, the most popular, relevant source for the respondents is media or consumption of readily-available information that has a great influence in shaping our opinions, even about health. The media and other information providers such as libraries, archives, and the Internet are widely recognized as essential tools for helping citizens make informed decisions...and, therefore, citizens need a basic

knowledge of their functions and how to assess them. The purpose of media and information literacy is to impart this knowledge to the users. (MILID Yearbook 2013, 301).

Library Infrastructure and Staff Training (2012)

The goal of this study was to see where state libraries stand in supporting the new flow of information and ICT developments, as well as how they deliver it to the end users.

Findings: The school libraries serve a community between 700-1700 students and each library has only one part-time employee serving three hours per week. There is no internet or computers available in the library. The internet was available only in one laboratory of informatics. The last acquisition of new materials had occurred more than a year before, and the libraries featured limited titles. Copies could be made only through the General Directorate of Education. The amount of space and number of library reading posts were limited compared to the numbers of students the libraries serve. Annual presentations of library instructions were offered, and usually lasted one hour. Staff is not familiar with IL concepts and have never participated in seminars, conferences, or trainings related to library issues. The library of the local municipality unit has three employees. None of them has training in librarianship. In this library, there is no internet and only one computer. The last book acquisition had occurred four years ago. The university library has two trained librarians. They have two computers in the library, but no internet access. The online databases offered by IZUM through ERA project are used by students through remote access in internet cafés or at home. One librarian was informed about IL concepts during her recent Master Studies in Library Science in Slovenia. (Basha, Vilar and Stricevic 2013, 145-150).

Other Relevant Issues Concerning Information Literacy

“The pattern of Growth in this field is well established and should be built upon to expand...Such an effort would necessarily create many new opportunities, some of which would be appropriate to the marketplace and others for subsidy” (Zurkowski 1974).

The **Information for All Programme** (IFAP) intergovernmental programme of UNESCO, which promotes universal access to information and knowledge for development of knowledgeable societies, states that information literacy is one of the priority areas for IFAP including ethical, legal and societal implications of ICT and preservation of information. The Thematic Debate on Information Literacy (IFAP, 5 April 2005) specifies that information literacy is concerned with teaching and learning, and it aims to develop critical understanding of information and active participation on information-providing. Therefore, information literacy should be a basic human right in a digital world. It is necessary to communicate and promote the concept of information literacy, to embed information literacy in the curriculum, at all education levels and/or in the professional development and encourage partnerships between teachers and librarians (UNESCO IFAP 2002).

Solomon and Shrum argued that “we live in a wired globalized world in which communication and collaboration are possible 24/7, where technology is omnipresent. Today’s students are no longer the people our system was designed to teach...They may know the technology better, but teachers have to help them use the tools wisely...” (As cited in an IL video prepared by University of Mary Washington, 2009)

Ideally, one should become information literate, and practice those habits and skills over one’s entire lifetime. In short, Information Literacy must not be seen as standing alone, as if it were some arcane technical subject that one could learn and then forget about. Also, literacy should not be viewed as a single high point on a scale of learning that can be reached, like scaling a ladder, and then the learner can sit back and feel content and self-satisfied because a personal goal has been reached. Rather, there is no “upper limit” to literacy because it is a continuum, more like a voyage that must be undertaken over one’s lifetime (Horton, 2008).

As there are different definitions of Information Literacy, there are also different stages /steps usually described by experts and researchers and this is normal because the paradigm is still new.

Juznic et al. (2006) concluded that there should be more public initiatives for promoting the value of the internet to senior citizens. It is important that the librarians are aware of the opportunities they have in establishing these services...Public Libraries should recognize potential users in all age groups. Librarians are there for the sole purpose of helping others in their pursuit of knowledge and better quality of life.

It is obvious that each country will develop and customize its own Information Literacy map to accommodate and “fit” into the unique circumstances with which it is faced. However, having said that, many issues and challenges are quite similar for countries that share similar contexts and circumstances, since Information Literacy is a context-sensitive phenomenon (Spiranec and Pejova 2010).

Sheldon Shaffer, Director of UNESCO Bangkok 2006, At the preface of the publications *“Principles of Awareness-Raising for Information Literacy, a Case Study”* (Sayers, 2006) noticed that “any model of awareness-raising, or campaign planning, should be a tool to stimulate discussions and innovations in the design of the process and not a rigid how-to-do recipe. A model can focus on finding optimal combinations of different approaches. Examples of such approaches or modes are public relations (PR), advocacy, personal communication or educational programs in schools”.

Research Problem, Research Question and Paradigm

What is Information Literacy for the Albanian Society? (“state of understanding”). Is Albania following International Standards and Indicators? Are IL skills important for future success? Who can train and educate people to gain IL skills? How can Albanian libraries and other Institutions contribute to foster an IL environment?

While in developed countries this concept has been known and understood in professional and intellectual levels for more than 30 years and measures were taken to raise awareness, implement it in the curricula, train librarians, teachers, students and common people, design long term strategies, and share the benefits, Albania is still missing these opportunities.

Hypotheses

For the utilization of Information Literacy and the ability to increase its further use, we must first observe and measure the level of knowledge individuals, professionals and institutions have of it. How have they thought of using it? Which are the institutions responsible? And what are the next steps?

As for the questions raised above, the following hypothesis can be deducted from the survey:

The level of understanding Information Literacy in Albania, not only by the general public, but by a larger group including: academic institutions, libraries, government or media, is low.

As there is no official policy regarding Information Literacy in Albania, these terms are generally confused with information technology policies.

There is no plan in the near future about the application of Information Literacy, nor which areas it will be applied to.

There is no responsible institution entitled to initiate Information Literacy policies.

Knowledge resources in Information Literacy in universities are low or non-existent. Furthermore, this phenomenon is due to a lack of understanding of the concept of Information Literacy.

Libraries offer little or no information regarding Information Literacy.

Lack of interest in understanding Information Literacy and its importance is the main obstacle in Albania regarding Information.

Lack of Information Literacy curricula in Albanian Education Systems.

Goals of Research

Provide sufficient evidence of:

Level of knowledge of IL in our country starting from academic environments and public institutions to the general public.

Policies and practices available from the responsible institutions for improving Information Literacy.

To suggest:

Best practices for publishing and spreading Information Literacy.

Policies and practices that should be applied by central institutions.

Practices of knowledge and information availability of Information Literacy from Libraries.

Research results will identify the needs of Albanians concerning Information Literacy. Solutions will be developed and applications suggested to the government, to non-governmental institutions,

libraries, librarians, academic staff, individuals and organizations on how they may collaborate to change curricula, support and develop the roles that school, university and libraries may play in the new information environment and a contribution to lifelong learning.

Methodology

There are many interesting topics to be researched about Albania, the situation of its libraries, patterns, education etc. In order to effect an early and thorough change in the perspective of IL polices and strategies from the top down level, we thought of using as our research method the: Quantitative-Survey, Questionnaire as an instrument.

For this survey in the form of a questionnaire the author's permission was obtained by email.

This Information Literacy Baseline Survey model was planned, designed, developed, tested and implemented by the International Clearinghouse for Information Literacy and Lifelong Learning in Slovenia (CoIL-LL). It was utilized as a first actual or "live" test case using over two dozen Eastern, Southern and Central European countries in the European region. (Horton 2008).

The questionnaire consists of three sections/parts. Part I deals with questions addressed to government institutions. Part II deals with questions addressed to educational institutions. Part III deals with questions addressed to libraries.

The regular corporate employees were selected in order to add to the sample and provide more detailed information about the presence of political regulations about information literacy, and if these regulations have been successful.

Each section may be addressed separately to the intended groups, but the author preferred to receive answers from all the respondents and for all the questions, because employees in most of these institutions are subject to changed/changing positions due to transitions and political reforms, and there are many people that are working in a different environment regardless of their education...

Data are analysed in Excel.

Research began in December 2011 and finished December 2012 to contact target groups and people, to gather the data and then to analyse them.

The survey targets the national level, but for the purpose of this research the questionnaires were distributed only in Tirana and Durres (Central Albania).

A purposive **sample** was chosen for the particular characteristics of the respondents that are of interest, and which will best enable them to answer our research questions.

The researcher took special care and consideration in the selection process of institutions based on its research criteria. Institutions were selected based on many characteristics, including a few that had no direct relation to the topic, but whose input would be valuable in making the sample size more unbiased and representative of many layers in society.

Target groups of this sample were: Professors, teachers, librarians, government officials of different ministries, civil servants, Albanian employees of different non-governmental organizations, students, users of various libraries and others. We wanted to see, if the concept of Information Literacy is well known among the academic elite which are supposed to be the most important source of development and innovation in Albania. Therefore all the samples included subjects with university degrees, (as we'll see from the results, 70% of which had advanced degrees including Masters and PhD).

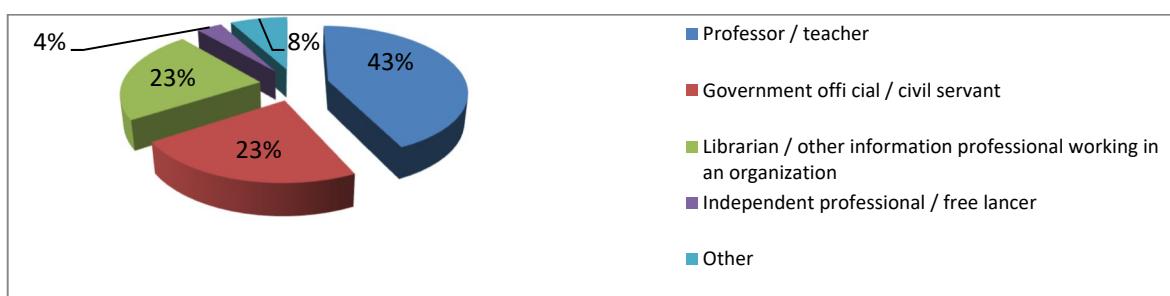
Respondents were asked to fill in the survey sections appropriate to their knowledge and expertise, but no strict rule was set that they must complete it all. They were informed that all individual responses will be anonymous and also advised to be frank and honest in their replies. It was possible to contact one of the government institutions, MITIK, only by post, and no answer was received. It was not easy to reach all the respondents that were working for the government. Some of the contact points at the main ministries never returned the questionnaires although several attempts were made to meet them personally, by e-mail, mobile etc.

Results

Knowing the importance and sensitivity of the information gathered, making it possible to fit in accordance with the independence of datasets to support or deny the hypothesis, the interviewer has taken high precaution in selection of his subjects. The concept of information literacy is not well known among the academic elite which is supposed to be the most important source of development and innovation in Albania. Therefore all the samples have been conducted of off subjects with university degrees, 70% of which had advanced degrees including Masters and PhD.

As observed in figure 1, 89% of the subjects were selected were part of the white collar elite with very qualified professions and they were not only supposed to be aware of Information Literacy but also be very knowledgeable in detail about it. Since the government has established certain requirements about information literacy the subjects selected needed to be aware and spread it at other levels of the society. The subjects' professional categories are as follows: See figure 1

FIGURE 1: RESPONDENTS



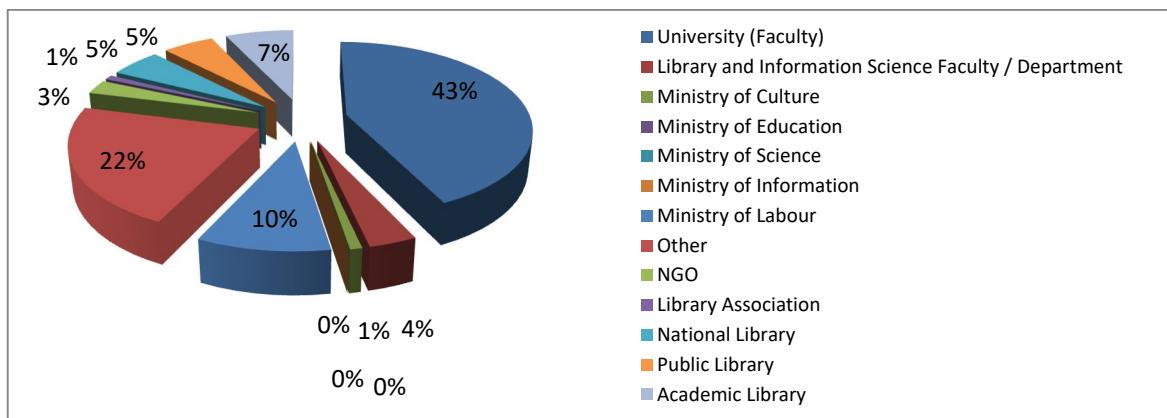
The selection of institutions and organization has also been conducted in accordance to the guidelines of the survey which involves central institutions interconnected with Information Literacy regulations.

The absence of answers from important institutions, which were supposed to be the policy enforcers, policy makers and competent institutions for maintaining policies about information literacy, it's an important absence but it's also serves as a proof of the hypothesis that information literacy is very unknown even from the institutions responsible for it. Adding more to the case, all these institutions gave no response about the absence of their reply in this survey. This survey was directly sent to Ministry of Information, Culture, Education and Sciences, giving us insights about their lack of vision and strategies related to Information Literacy.

As we can see in figure 2, the analysis of the survey is conducted upon the answers collected from samples with the following ratio according to their categories of involvement.

- 43% Libraries, 22% Employees from ministry of labour, 10% NGO
- Other employees from different institutions including employees of private businesses 22% of which show higher interest about the performance of the government and its development compared to employees working directly for the government.

FIGURE 2: ORGANIZATION/INSTITUTION



Questions data analyses:

Question1. *In your country, is the term "Information Literacy" already widely used and understood among academia, libraries, government, media, and the general public?*

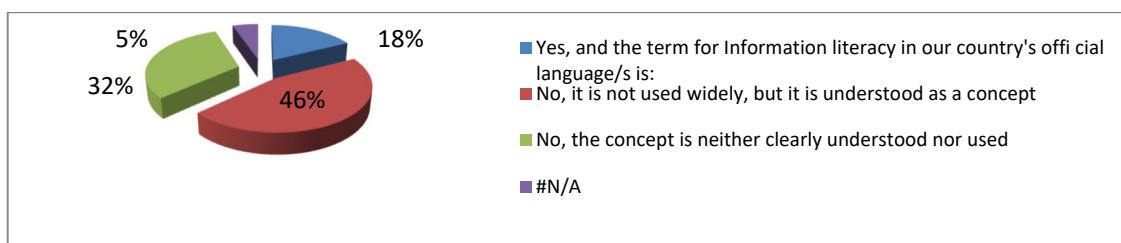
Only 20 of the respondents or 18% of the total respondent numbers have a positive answer to the first question that the term "Information Literacy" already widely used and understood among academia, libraries, government, media, and the general public. But even them did it partly because of only 1 of them did answer the question entirely related to the used term for Information Literacy in our country naming it just Literacy, showing that the term is not really understood (Please, refer to figure 3).

46% of the respondents believe to have clear idea about the Information Literacy concept even the concept is not fully used. If this is true it will be clarified through the next questionnaire questions when knowledge's are tested on detailed level.

36% do satisfy our hypothesis that the concept is really not understood.

5% do not even answer to the question. It is a not a small number to be considered, but as per researcher general perception it comes because of uncertainty of the respondents and because of sometime people are too proud to say no (cultural matter)

FIGURE 3: QUESTION 1 IN YOUR COUNTRY, IS THE TERM "INFORMATION LITERACY" ALREADY WIDELY USED AND UNDERSTOOD AMONG ACADEMIA, LIBRARIES, GOVERNMENT, MEDIA, AND THE GENERAL PUBLIC?



Question 2. Does your country have a formal policy on Information Literacy? Check one.

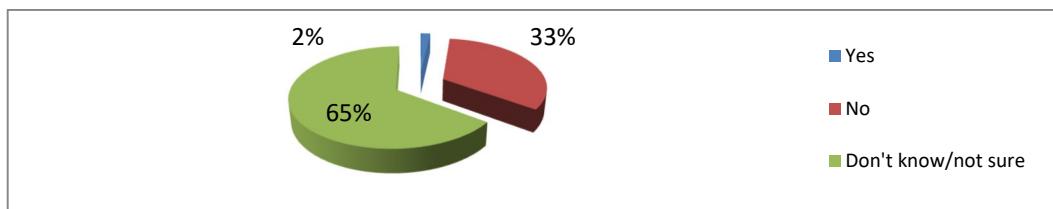
Even 20 of the respondents did answer yes to the previous question In your country, is the term "Information Literacy" already widely used and understood among academia, libraries, government, media, and the general public?", only 2 of them do pretend to know the policy the rest of 18 declare they do not know the policy, or not sure about it. (Please, look at the Figure 4)

Other 56 respondents did answer not to know the policy or not to be sure of it, which increase the number of respondents of this group in 74 respondents or 65% of the total.

Other 38 respondents or 33% are sure that the policy does not exist.

They are only 2 respondents answering positively about the policy. Have they seen the policy or try to apply it? This will be cleared out through answering to the next question 2.1.

FIGURE 4 QUESTION 2 DOES YOUR COUNTRY HAVE A FORMAL POLICY ON INFORMATION LITERACY?



Question 2.1 If "yes," please give the name of that policy, law, rule, regulation or other legal instrument in which it is promulgated?

As previewed above only one of the respondents answering yes to the question 2 does pretend to know the name of the policy (the other one did not respond) and he made a mistake by mixing the

Information Literacy rule with the application rules of the law of the “Public Information Rights”.
 (Table 1)

TABLE 1: QUESTION 2.1 IF "YES," PLEASE GIVE THE NAME OF THAT POLICY, LAW, RULE, REGULATION OR OTHER LEGAL INSTRUMENT IN WHICH IT IS PROMULGATED?

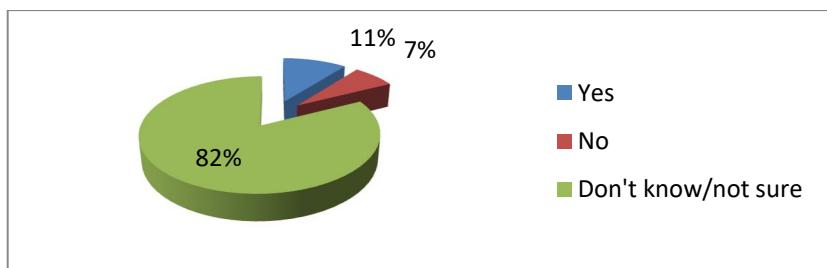
Row Labels	Count of Question 2.1	%
(Please attach a copy if you have one or provide data if the document is available in digital form)	1	1%
#N/A	113	99%
Grand Total	114	100%

Question 2.2 If "no" has it considered adopting one?

The absolute majority of the 82% of the respondents do not know or are not sure that policymakers are trying the possibility to adopt an Information Literacy policy sooner. 7% of the respondents are sure that adopting a policy is not considered.

And only 11% of the respondents pretend to know that adopting a policy is considered.

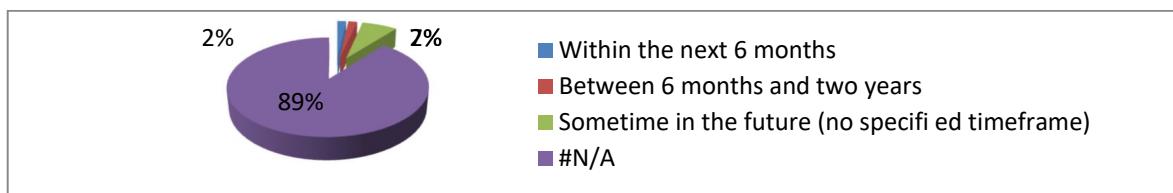
FIGURE 5: QUESTION 2.2 IF "NO" HAS IT CONSIDERED ADOPTING ONE?



Question 2.2.1 If "yes" which of the following timeframes best applies?

Only 4 of 12 respondents they did pretend to know that the Information Literacy policy has been considered to be adopted are “optimists” it will be done on the near future within next 6 months and between 6 months and 2 years. The rest of 8 respondents do not see it will be done till next 2 years.
 (Please, look at Figure 6)

FIGURE 6: QUESTION 2.2.1 IF "YES" WHICH OF THE FOLLOWING TIMEFRAMES BEST APPLIES?

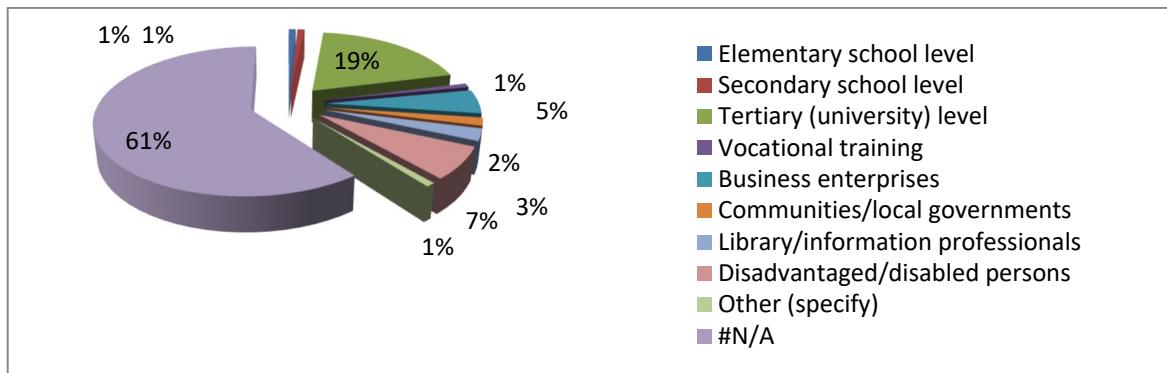


Question 2.3 At which primary sectors (groups or professions) is the policy primarily directed?
 Check all that apply.

Very significant respondent's number of 45 or 39% answering to this question the result is not correct or does not have a real significant meaning because only 12 respondents did answer to the previous question and principally only they do have the right to answer. But it also could be taken as a

result of to which group the policy should be directed and it clearly shows that most of the respondents believe it should be directed to Tertiary (university) level 19% as per Figure 7 or 49% of the respondents, which answered to the question.

FIGURE 7: QUESTION 2.3 AT WHICH PRIMARY SECTORS (GROUPS OR PROFESSIONS) IS THE POLICY PRIMARILY DIRECTED? CHECK ALL THAT APPLY.

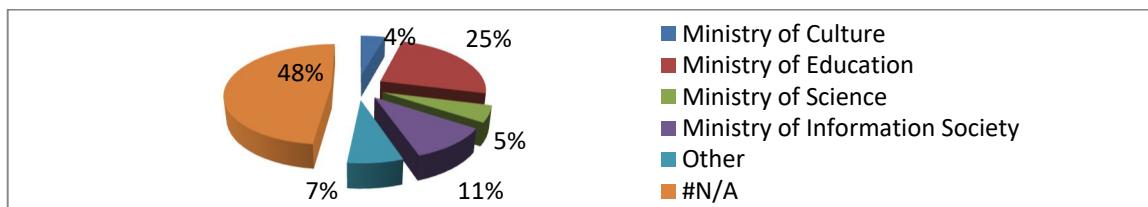


Question 3 What is the name of the ministry / government agency responsible for overseeing the Information Literacy policy/law? If there is more than one ministry, please tick them all.

Even the concept of Information Literacy is not understood and the policy does not exist 52% of the respondents did answer to this question as a thought that the responsible institution for Information Literacy should be as per results presented on the figure 8: Ministry of Education 25%, Ministry of Information 11%, Ministry of Culture 4%, Ministry of Science 5%.

A majority of 48% of the respondents did not answer to the question.

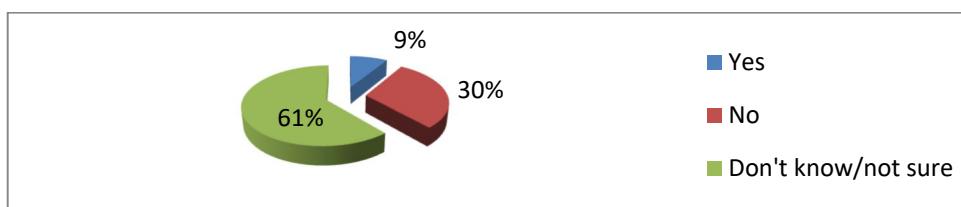
FIGURE 8: QUESTION 3 WHAT IS THE NAME OF THE MINISTRY / GOVERNMENT AGENCY RESPONSIBLE FOR OVERSEEING THE INFORMATION LITERACY POLICY/LAW? IF THERE IS MORE THAN ONE MINISTRY, PLEASE TICK THEM ALL.



Question 4 Are Information Literacy education and training courses offered within the universities in your country?

91% of the respondents did answer no or do not know/not sure to this question and only 10 of the respondents yes. (Look at the figure 9)

FIGURE 9: QUESTION 4 ARE INFORMATION LITERACY EDUCATION AND TRAINING COURSES OFFERED WITHIN THE UNIVERSITIES IN YOUR COUNTRY?



Question 4.1.a What is the name of department/faculty/other academic entity that offers the course?

The majority of 104 respondents or 91% did not answer to the question meaning they do not know any department, which offers Information Literacy courses.

Only 10 of the respondents pretend to know about the department: 3 of them mentioned Polytechnic University, 2 Polis University (private University specialised on architecture) and other 5 very different departments as Faculty of History and Philology, National Library, Faculty of Social Science, Journalist Department. As much as the researcher knows only the National Library did try to organize some Information Literacy lessons during master classes.

TABLE 2: QUESTION 4.1.A WHAT IS THE NAME OF DEPARTMENT/FACULTY/OTHER ACADEMIC ENTITY THAT OFFERS THE COURSE?

Row Labels	Count of Question 4.1.a	%
a. What is the name of department/faculty/other academic entity that offers the course?	10	9%
#N/A	104	91%
Grand Total	114	100%

Question 4.1.b What is the name of those courses?

Other 2 respondents from 10 answering the question 4.1.a did not remember the name of the course. Participants from academic area did mentioned Multimedia Library as the name of the course, other Research Method and Masters in Library.

93% of the respondents or 106 persons did not answer to the question.

TABLE 3: QUESTION 4.1.B WHAT IS THE NAME OF THOSE COURSES?

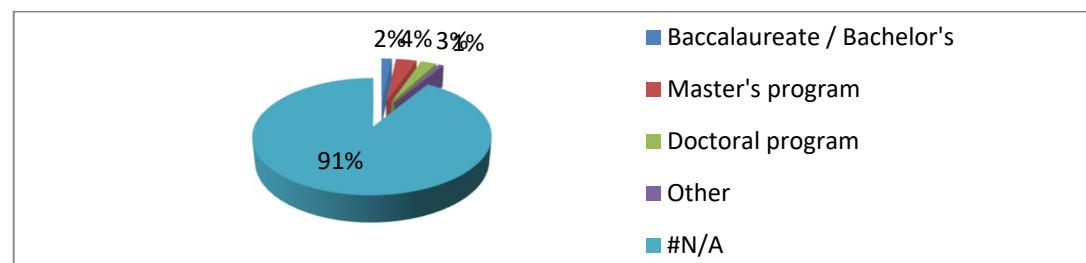
Row Labels	Count of Question 4.1.b	%
b. What is the name of those courses?	8	7%
#N/A	106	93%
Grand Total	114	100%

Question 4.1.c At which level is the course given/taught? Check all that apply

From 10 respondents, which know about the courses 4 of them mentioned Master program as a course level, 3 Doctorate level and 2 Bachelor's. (Figure 10)

Still the majority of 91% did not answer to the question.

FIGURE 10: QUESTION 4.1.C AT WHICH LEVEL IS THE COURSE GIVEN/TAUGHT? CHECK ALL THAT APPLY



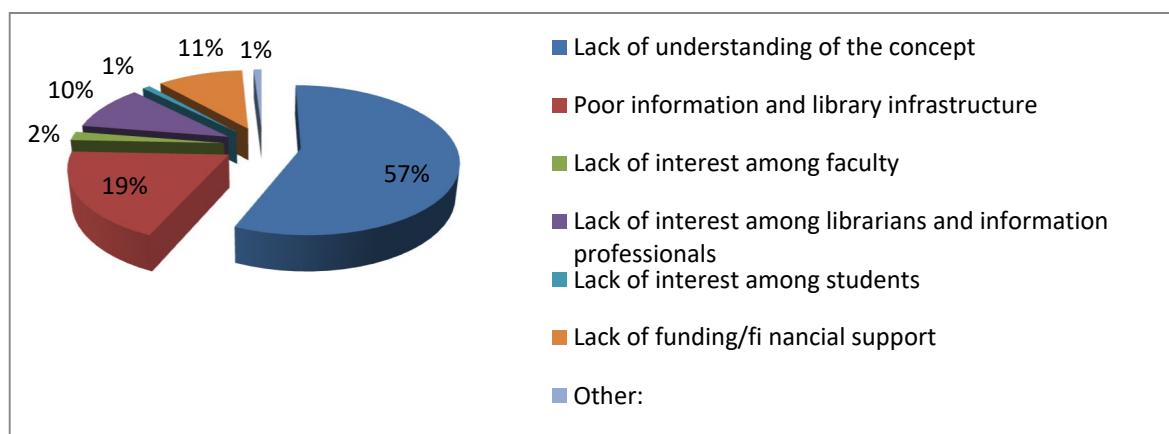
Question 4.2 If "not," why do you think this is so? Check all that apply

Respondents in majority 57% do think lack of understanding of the concept as the main reason why the courses are not organized. Mean that the concept is not clear not only from participants whom should be invited to follow the Information Literacy courses, but from the responsible institution and their staff as well. (Please, look a Figure 11)

19% of the respondents do think poor information and library infrastructure as the reason why courses are not organized. And 10% do also recognize that the librarians do not have professional information and interest. Quite 30% do “blame” libraries and librarians as a main reason why Information Literacy concept is not understood.

Only 11% do think financial reason as the main factor.

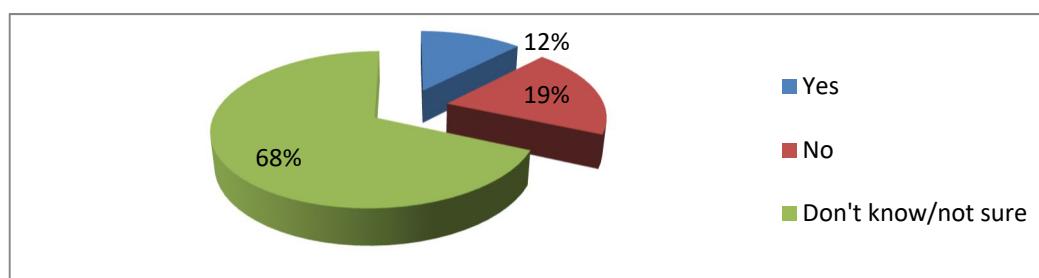
FIGURE 11: QUESTION 4.2 IF "NOT," WHY DO YOU THINK THIS IS SO? CHECK ALL THAT APPLY



Question 4.3 If Information Literacy courses are not currently being offered at the universities in your country do you know if developing such courses has been considered?

There are only 12% of the respondent know with the fact that courses on Information Literacy are considered to be offered on universities (Figure 12)

FIGURE 12 QUESTION 4.3 IF INFORMATION LITERACY COURSES ARE NOT CURRENTLY BEING OFFERED AT THE UNIVERSITIES IN YOUR COUNTRY DO YOU KNOW IF DEVELOPING SUCH COURSES HAS BEEN CONSIDERED?

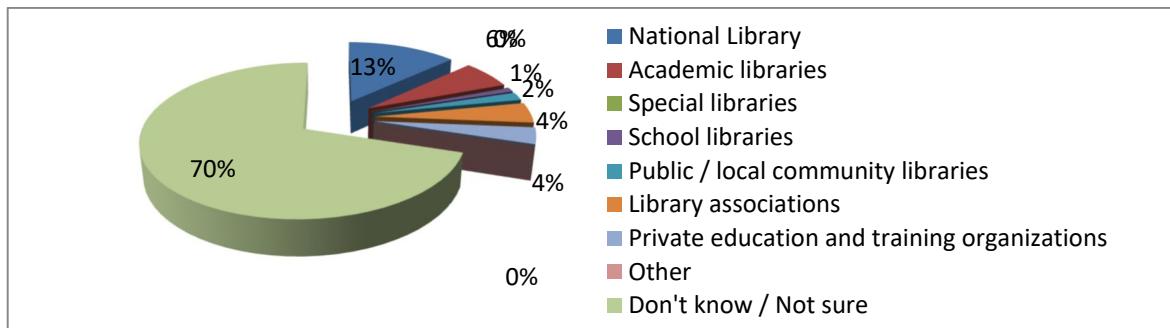


Question 5 Do libraries or library associations in your country offer Information Literacy education and training courses/workshops/seminars? Check all that apply.

80% of the respondents do not know any course and only 13% do know that the National Library did start to have Information Literacy during master courses organized from this institution department.

6% on Academic Libraries and 5% of Library Association are mostly linked with sporadic efforts to introduce Information Library and not about regular courses. Or because of the respondents do misunderstand the concept (Figure 13).

FIGURE 13: QUESTION 5 DO LIBRARIES OR LIBRARY ASSOCIATIONS IN YOUR COUNTRY OFFER INFORMATION LITERACY EDUCATION AND TRAINING COURSES/WORKSHOPS/SEMINARS? CHECK ALL THAT APPLY.

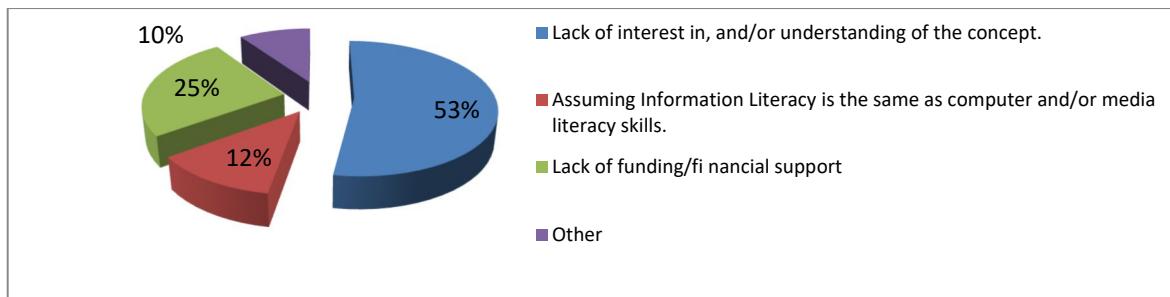


Question 6 What are the major obstacles you see in improving Information Literacy in your country? Check all that apply.

53% or 60 persons of the respondents do think lack of interest because the concept is not understood as the main obstacle to be passed in improving Information Literacy.

25% do think is the lack of financial support the main obstacle and 14% because the Information Literacy is understood as computer or media literacy. (Figure 14)

FIGURE 14: QUESTION 6 *WHAT ARE THE MAJOR OBSTACLES YOU SEE IN IMPROVING INFORMATION LITERACY IN YOUR COUNTRY?* CHECK ALL THAT APPLY.



Question 7. In your opinion what kind of initiatives and actions are necessary for improving the state of information literacy in your country?

The respondents suggest:

More action needed to improve the state of IL and understand the concept. More advocacy needed for the terminology and its use.

Susceptibility of the relevant authorities and actors (ministries, libraries, state and public universities etc, on the importance of knowing and using IL and it's benefits.

More info on the issue and raise awareness through campaigns, conferences, workshops, leaflets, newsletters, presentations, courses , trainings in different formats for all segments of society,

professional training, continuing trainings, make functional and promote the use of libraries, a web page accessible to all, TV debates and more space in media to explain the concept and the benefits of IL.

IL to be part of programs of all levels and more space for IL in curricula from elementary schools, high schools, bachelor and master degree , doctorate etc. National Library and Ministry of Education have to take official initiatives to include IL in their institutional programs.

Other suggestions from the respondents are financial, technical, legal and experts in the field to support policies and strategies. Perhaps a working group that will decide how, when, with what measures should be created.

Need to create an association for IL with students, academics, librarians Building of an infrastructure and affordable internet access and then to offer necessary trainings

Collaboration with school, public and university libraries has to be reinforced.

Question 8. Comments and Suggestions

Thank you very much for completing this survey. If you have any additional comments you would like to make about the state of Information Literacy in your country, please use the space provided below.

One of the respondents says “I had no information about IL and I regret. I learned this subject today through this survey. It is a very good initiative. Other additional comments:

In each University academic staff and librarian need to collaborate with students regarding IL. In every faculty working group need to be created, meet every month and consult and have their website for sharing training information.

IL has to be a separate discipline from elementary school and when giving projects and homework according to their age children need to be accompanied by the teacher and librarian. In third elementary class is the subject Technologic Literacy. Instead of it or parallels IL has to be a subject. Students have to be informed who may assist them dealing with IL needs and skills. Also the teachers and academic staff need to be trained in IL.

Government have to financially support IL through courses in and out the country to see progressive experiences. IL in our county needs IL support not only from government but also organizations and associations that support knowledge and education.

Discussion

The goal of this research was to provide sufficient evidence regarding the level of understanding of the IL concept in Albania, the level of development of practices, initiatives, trainings, programs in higher educations and in the libraries, to identify needs, and to suggest practices and recommendations to the respective institutions and organizations.

The survey results show that the concept of Information Literacy is not well known among all, especially by the academic elite, which is supposed to be the most important source of development and innovation in Albania. Therefore, all the samples included subjects with university degrees, 70% of which had advanced degrees, including Masters and PhD.

82% of the respondents were not sure, if the term of “Information Literacy” is understood and 98% of the respondents do not know, if an official policy does exist (65%) or not (33%).

Included in the selection were the ministries, public institutions, universities, schools and libraries. Unfortunately, the most important ministries directly linked and responsible for policy making in Information Literacy did not respond to the survey. We assume that the reason for the lack of responses cannot only be attributed to negligence, but also to the absolute lack of knowledge on the part of the employees involved.

This confirms our first hypothesis that the level of understanding in Albania of Information Literacy not only by the general public but by a larger scope including: academic institutions, libraries, government or media is low. We assume that there are multiple reasons caused by the transition period Albania faced over the last 2 decades and the lack of information of or attention to this important human right.

89% of the subjects are confident to indicate that they are not aware of any policy, nor any thought that such a policy has ever been considered. None of the subjects can identify what the policy is or the nature of the policy. This supports hypothesis number 2 that in Albania there are no official policies regarding Information Literacy, these terms are generally confused with information technology policies.

The research results support hypothesis 3 indicating that there are neither plans nor any immediate procedures which specify a time frame for the implementation of IL and what it will be based on. From the data gathered, 89% of subjects report that any policy and procedure has yet to be adopted, 61% of the respondents report not to be aware in which sectors this policy should be adopted, and 19% believe it will be in universities.

52% of the surveyees that have answered have an entirely different opinion concerning the responsible institution in charge of the official policies for IL.

The answer to this question proves our 4th hypothesis, that it is entirely unclear which of the institutions must initiate and supervise Information Literacy.

As above, our 5th hypotheses that “Knowledge resources in information literacy in universities are low or non-existent; furthermore, this phenomenon is due to a lack of understanding in the concept of information literacy” has been supported with the following results:

91% of subjects report not to know or not to be sure, if such courses or trainings exist

93% of subjects do not know the course's name, its level or the department linked to it

About 60% of subjects emphasize the lack of knowledge of the concept leading to the absence of Information Literacy at the academic level. Whereas 88% have no knowledge or are unsure, if such an issue will be addressed soon by the universities.

The same facts support our 8th hypothesis about a lack of Information Literacy curricula in Albanian Education Systems.

“The challenge now is for higher education authorities to respond. Unfortunately for now, such dimensions are still not visible in educational strategies or policies, therefore inhibiting necessary and needed IL developments that would support the intended reforms”. (Spiranec and Pejova 2010).

The results support the sixth hypothesis that libraries offer little or none information regarding Information Literacy. Answering the question, whether libraries or library associations in Albania offer IL education and training courses/workshops/seminars, 70% of the respondents did not know of any courses, while 30% reported knowing that the National Library has begun to include Information Literacy during master courses organized by this institution. Others, at Academic Libraries and the Library Association, are mostly linked with sporadic efforts to introduce Information Library, but not about regular courses. Or because of the respondents' misunderstanding of the concept.

Regarding the implementation of IL, Horton (2008) reports the following for The Bangkok, Thailand Findings (December 2005) on “IL Education and School Library Services”: “The responses varied showing disparity across the region; where it is taught, IL is integrated into courses and/or taught as an orientation in the library; school libraries and teacher librarians seem to play a small role in teaching IL; in two out of seven countries IL is taught by teachers in libraries, and in five countries it is a part of extracurricular activities; lack of qualified teachers, librarians, computers, and sufficient library collections were cited as the main factors preventing the teaching of IL”. (Horton 2008,71)

The research results support all of our hypotheses. 60 of the respondents think that lack of interest, due to the concept not being understood, is the main obstacle to be overcome in improving Information Literacy. 25 % hold a lack of financial support to be the main obstacle, and 14% attribute problems to the fact that Information Literacy is misunderstood as equivalent to computer or media literacy. This is consistent with our 7th hypothesis about lack of interest. The results of this research are almost equal with the situation in other South-East European countries. These conclusions equal the results described by Spirane and Pejova (2010) who found the following:

“Some countries with well-developed information and library infrastructures, and which have a higher level of understanding of the issues, have at least taken the first steps toward designing initiatives and programmes for Information Literacy development (for instance, Croatia, Slovenia and Turkey). These countries stand in contrast to countries like the Republic of Macedonia and Albania,

which have a rather poor library and information infrastructure, and have no formal information and library education programmes at the university level”.

The Information Literacy initiatives (Horton 2008, 48) must be undertaken in the context of the ongoing education policy formulation and reform. Advantage should be taken of the ongoing reforms to integrate Information Literacy into the educational system. As a goal for the ongoing reforms, specific targets and accomplishment milestones (benchmarks) should be set for integrating Information Literacy and Lifelong Learning into these foundational reforms as well

As above, Research Results have verified that:

The level of understanding in Albania of Information Literacy not only by the general public but also by a larger scope including: academic institutions, libraries, government or media is low.

As in Albania there is no official policy regarding Information Literacy, these terms are generally confused with information technology policies.

There are no plans in the near future for the application of Information Literacy, nor which areas it will be applied to.

There is no responsible institution who will initiate Information Literacy policies.

Knowledge resources on Information Literacy in universities are few or non-existent, furthermore this phenomenon is due to a lack of understanding in the concept of information literacy and lack of IL curricula at all levels of studies.

Libraries offer little or no information regarding Information Literacy.

Lack of interest in understanding Information Literacy and its importance is the main obstacle regarding Information Literacy in Albania.

The survey results confirmed that in Albania, there has not yet been a planned, prepared or implemented a strategy for Information Literacy at the national or local level. The level of understanding of IL is very low. There are no public awareness programs, there is no local research about Information Literacy, nor attempts to promote it; there are no trained information professionals and teachers in information literacy, library schools do not have it on their agenda, and information resource collections are very limited. ICT infrastructure is still underdeveloped, and there is no curriculum for training IL skills at all levels of studies. According to this researcher’s experience, it is limited to one-hour library tours or misunderstood as being part of training in computer skills. Investment in information and library infrastructure is very limited. Less than 1% of the population have library cards. School libraries do not have any librarians. Usually one of the school teachers is serving in this capacity with very limited hours to maintain the library and keep it open. Commune libraries that existed twenty years ago are almost all “dissolved” or have changed function. Among those that are open, new materials are very limited or available only through donations.

We don't need to invent solutions for overcoming this big gap. For more than thirty years the road has been prepared through a variety of marvelous efforts and experiences all over the world. Standards, indicators and recommendations are set by different international organizations (UNESCO, IFLA, ALA, etc). We simply need local people with interest in IL and experts to contribute through the identification of issues of concern, proposal of specific solutions, and through the development of creative strategies, as well as by encouraging librarians and teachers etc. to take the initiative in creating an IL learning environment. This will be the best investment in our communities and the results will be amazing in a short time.

Moreover, with the European Integration of Albania, and the corresponding steps we must take to be properly integrated, there is no time to lose.

Conclusion

Information Literacy in Albania will not happen by default. It must rapidly become a priority for the responsible authorities and will require cooperation among different ministries, libraries, universities and other institutions and professional organizations and associations. We must urgently prepare a “National Information Strategy and Vision” (Horton 2008). In addition to making clear the IL concept and vision, we must consider the identification of problems and issues related to the application of IL international standards and the right path to resolve them.

The author of this research brought to the attention of the Albanian Library Association the need to publish in Albanian the book “Understanding Information Literacy: A Primer” (Horton2008), an easy-to-read, non-technical overview explaining what “Information Literacy” means, designed for busy public policy-makers, business executives, civil society administrators and practicing professionals. As Abdul Waheed Khan, Assistant Director-General for Communication and Information mentioned in the forward part of this publication, UNESCO asked Forest Woody Horton, an international information management expert, to prepare this Primer (Horton 2008).

The publication is available in the Albanian language, including a summary of recommendations from this publication that reflect our situation and the recommendations from this recent research, which will be given to the staff of the recently elected governmental ministries, public and private universities, libraries and librarians, interested professionals and organizations in the country that have the possibility to initiate and implement national strategies, plans, projects, trainings and other initiatives to foster and practice Information Literacy awareness campaigns, trainings etc.

Results show that Albania needs a better understanding of the Information Literacy concept, its benefits and requirements, and the integration of IL curricula, creating the right infrastructure in schools and libraries to support the new technologies and take the utmost care for further education and training for the librarians and teachers.

To follow the orientations of UNESCO, IFLA, the Prague Conference and other prestigious international organizations and to bring this National Strategic Plan of Action into reality, there is an immediate need for the creation of a National Advisory Committee with national experts and professionals from all the ministries, universities, libraries, agencies, institutions, civil society with assisted international expertise. They will design the time frame of short and long term projects and initiatives, the required infrastructure, financial assistance and other implications.

Wilkinson & Bruch, IFLA 2012 suggested using an external adaptation or internal integration, previously identified at our institution to ask ourselves which strategic change might work best to resolve the issue.

Until further steps are undertaken, consulted and decided upon to follow, we may use “metatool”, developed by the IFLA section on IL and other universities, libraries, associations etc. Incorporating an Information Literacy curriculum into their system can help schools attract more students and graduate more-informed students who are better prepared to cope with 21st century challenges (Horton 2008, 35).

Albanian libraries, librarians, and the Library Association need to take a leadership role in creating a lobby and in building and supporting IL initiatives, strategies, and collaboration among school and academic libraries. They need to foster a dialog among ministries and local government authorities responsible for libraries and other NGOs interested in the field of raising IL awareness, supporting IL infrastructure and training.

Public and school libraries need highly qualified librarians in the Library Science. School and commune libraries are in urgent need for special attention. Not only regarding space, but also infrastructure, including books, audio-visual and e-resources, and most importantly, full-time qualified librarians. As per the author’s knowledge and the national survey of 2012, mentioned in Literature Review, there have been years without any training for school librarians while their actual job position was only two hours per week. We have to follow the example of other European countries that have full-time librarians with Master Studies in Library Science employed in school libraries.

The first group of 15 selected Albanian librarians are completing successfully the Second Level Bologna Regional Part Time Master Studies at the University of Ljubljana, sponsored by the Slovenian Government. This group of people will be a valuable asset to the country and needs to be actively involved in the process.

The Ministry of Tourism, Cultural Affairs, Youth and Sports with its National Council of Libraries based on the Law on Libraries in the Republic of Albania, No.8576, Item of the Law14 (Year 2000) and Law No.9217 (Year 2004) for some amendments on the Law 8576, has to take the leadership in its

role of fostering inter-institutional collaboration regarding this important IL issue, draft and follow the National Strategy and Action Plan and prepare Information Literacy legal support.

The Albanian Ministry of Education must revise the previous experiences and create a new Department of Library Science according to international standards, expertise and procedures. That will soon fill the gap created by the transition and tradition in Albania.

The practices in IL context, possibilities and results around the world are amazing. The role of all libraries is crucial in this process. Each of the librarians, with their love, patience and devotion are an “added value” to this process and should continue spreading their awareness and training efforts.

To incorporate IL training with teaching other academic skills, (Howard 2012, 78) suggests “Consultations with schools and faculties...to identify existing good practices, gaps and areas for future development...identify some key projects in different programme areas”.

Talented youth may be consulted about Information Literacy and its impact in all fields of life and to collaborate with experts in Media, Information Literacy and Library Science for creating proper applications and online or mobile tutorials in the Albanian language and continue further research in the field.

Global developments are offering a mosaic of solutions and choices. Albania must immediately develop a national “frame of reference” for Information Literacy that will put IL and Life-long Learning on the right track with progress towards well-defined objectives and roles for government stakeholders, libraries, educational institutions, and other segments of society, as well as legal support.

There is a strong, qualified community of about 350 librarians around the country. They work in public libraries, in state or private schools, universities, organizations, etc. Yet, most people do not know what IL is. Until we have a common understanding of IL and its importance, until we build strong academic and social relations between the librarians, teachers and students, until we are trained properly, until the school libraries have qualified librarians and a suitable infrastructure, until we have national and local strategies, until the “top-down approach” is in motion, until we have the IL legal support, we have to be creative, trying something new and looking for the best experience around.

May my inspirational quote for the last 2 decades, originally written on November 17, 1881 by Bahá’u’lláh, inspire many readers of this research as well: “All men have been created to carry forward an ever-advancing civilization”. (Gleanings 1990, 215).

We hope that this research will open a discussion leading to a change in the situation of Information Literacy in Albania

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TRANSMEDIA LITERACY APPLIED AS A LEARNING FRAMEWORK FOR CHILDREN WITH INTELLECTUAL DISABILITIES e-mail of corresponding author: mgea@ugr.es Key words: transmedia, virtual reality, augmented reality, learning skills, intellectual disabilities	MIGUEL GEA University of Granada, Spain
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Abstract: Transmedia is a emerging form of creating contents using different media, and it is successfully used for transmedia storytelling experience (Ciastellardi 2013), where the elements of a fiction is dispersed across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experience. Ideally, each medium makes its own unique contribution to the unfolding of the story (Jenkins 2011). This paper present a novel approach to use transmedia literacy for improve learning skills on young people, specifically oriented to persons with intellectual disabilities.

Introduction

“The Information Society is a challenge and an opportunity. It is both a possible tool to achieve the full integration of people with disabilities with the use of technical aids, but also a possible new barrier to their inclusion in society.” (EDF-99-3-EN Manifesto 1999)

Down syndrome, asperger, autism and other persons with intellectual disabilities have some limitations that affect their daily activities, making them less independent and leading them to a potential risk of social and labour exclusion. Common characteristics of students with intellectual disabilities are the following (NASSET, 2016):

Disorder of attention and Concentration.

Difficulty focusing and maintaining attention on academic tasks

Memory. Difficulty memorizing numbers, letters, sequences

Language. Difficulties with sequencing when telling a story, pronouncing words, expressing ideas

Social skills. Difficulties in interpreting social cues, cooperation

Affective skills. Difficulties to express emotions, changes in sense of humour

Disorders in behaviour such as hyperactivity, impulsivity

Coordination problems

In this context we are proposing research project toward digital literacy using different forms of storytelling as a way of learning and also for their social inclusion. The of the spanish project is the inclusiveness and democratic principles as a good opportunity for everyone (of any kind of collective) to become a stakeholder as well as an active participant of such smart living envisioned scenarios. This is the goal of e-Integra (Alaman 2013), the research project in the context of the Information Society, particularly in the area of attention to diversity, and focusing on the development of technology to provide comprehensive training to people with special needs. Our approach focuses on alternative media and tools to understand and communicate in virtual worlds using the SmarCity paradigm.

The SmartCity Virtual Reality Playground

Information technologies have accelerated the creation and use of virtual worlds. First approaches focused on creating virtual isomorphic worlds to the real world by means of online multiuser games, in particular the so-called Massively Multiplayer Online Role-Playing Games (MMORPG), in which users interact with objects and other users in a scenery. The pioneers were the conversational adventures, where players used written dialogs to carry out missions. More recently, World of Warcraft is a good example of successful MMORPG, with millions of players involved (Skov Vanman 2017). These games showed the possibilities of creating bonds between the real world and a virtual world. People “lived” intensely in the virtual world, feeling successes and failures in the virtual world as relevant as that in the real world.

Different researches deal with mixed reality approaches for users with special needs, for instance, augmented reality with children on inclusive games (Brederode et al. 2005), or immersive virtual reality environments to enhance the social interaction of children with Autism (Ke 2013). The goal of this project is to create an immersive experience to engage user in the use of technologies for learning, but also the skills on creating digital content. These aims are detailed in the key points shown below:

Creation of a virtual space where users interact and achieve valuable learning skills to manage 3D spaces (orientation, construction, collaboration) for children with several intellectual deficits as a complement of their daily activities.

Creation of a Virtual Museum where users (adults with cognitive disabilities) can exhibits their craftwork, experimenting with 3D environments.

The main theme chosen is the Smart City, so the users acquire general knowledge about how a city should be, they interpret what is relevant or not for them, how this city is viewed or conceived.

Analyze the possibilities for social and labour integration. This museum and the virtual spaces may be visited, and therefore, it may represent a funding opportunity for the association as well as reputation for the digital artists.

The 3D environment for virtual museum and activities is done using Open Simulator (OpenSimulator 2016), an Open Source platform with similar features as Second Life. The users can build places to exhibit their art crafts, put their content and interact with others.

This paper focuses on this specific target group (children with intellectual disabilities), analysing how mixed reality technologies may be potentially suitable to help them for a social and labour integration. In this context, we are creating learning spaces with the following principles:

The story based on learning activities skills.

Connection (locations) with real world where things happens

The user participation, implication or interaction in the content of the story,

There are different media approaches each one may be suited for user needs. We are using the “city” as a learning platform where they can discover new stories to engage and learning experiences (creating training materials) and defining context scenarios to empathy with the target users and their need in the city (i.e. governance, economy, mobility, cultural, etc.)

The main technology used is Virtual reality where they can enter on a virtual space with representation of the principal buildings of the city. The users are assigned to specific role in the enter on the virtual reality with virtual reality space and each building has associated a specific story and task to do (related to commerce, history, culture, sports, etc.) with some rules and goals to achieve, but users are free to interact freely, as a sandbox game (Gea 2016). These activities are connected with learning skills in the course curricula (use of language, communication skills, abilities with mathematics, etc.) that can be evaluated for estimating the progression and effectiveness of using new media approaches. This is done using a virtual reality environment similar to Second Life (Open Simulator) by VR Desktop for a multiuser gameplay experience.

FIGURE 1. MAPPING BUILDING FROM THE CITY TO VIRTUAL WORLD



Source: Own

Experience Learning is based on the specific areas of Smart City, building contextual situations on each

session where the children can interact with building to discover their use, functionality and relationships with different areas of a smart city (Chourabi et al, 2012). Following is described the dimension to cover and the buildings proposed to interact:

Governance (The City Hall) The town hall is the place for taking decisions about citizen, policy and authority (<https://www.granada.org/>)

People (corral del Carbon) An old courtyard theatre is the place related with humanities, the poetry, the music, composition of phrases and ordering sequences. (<http://www.alhambrapatronato.es/index.php/Corral-del-Carbon/1540/0/>)

Economy (Arc of Elvira) An ancient bazaar is the building chosen for business, shops, mode of exchange of goods, the value of the products and money operations. (https://es.wikipedia.org/wiki/Puerta_de_Elvira)

Mobility (Battle Fountain) The main fountain of the city is chosen as a meeting point (also for teleporting to other islands), transport.

Environment (The Science Park) The Science Park is the building to show ecology, climate change, recycling, playing games and technology. <http://www.parqueciencias.com/parqueciencias/index.html>

Living. The Arabic stronghold and palace is used for the history, how people were in the past and how they build. Geometry. (<https://www.alhambradegranada.org/>)

Figure 1 shows the mapping from some building of the city to the virtual world. The strategic plan for learning uses additional toolkit:

Gestures. Expressing emotions is a key issue in the project, so, standard gestures are proposed during session with predefined shortcut (say hello/goodbye, hand up, clap the hands, laugh, sad or angry).

Role Play. Each session, different character (the major, the police, the salesman, etc.) are played by children. Know their abilities and responsibilities is part of the experience learning.

Interactive objects. We are developing several artefacts for complex activities (a lift with call button, tic-tac-toe putting pieces in the correct pattern, etc.)

Debate. For each situation, questions are done to the children (Do you know..? Have you visited...? How it works...?) and answer are given using chat system.

The focus group was composed of six students, with age ranging from 8 to 20 years old, and with different levels of cognitive disabilities, including autism disorders. The students were proposed different activities with different levels of difficulty, such as exploring the avatar virtual world; personalizing their own avatar; creating the exposition areas and populating them with their artwork; communicating with

other students; and performing collaborative activities among them.

Figure 2 shows part of an educational resource activity sheet developed for these sessions. Each sheet contains an illustrating pictogram (the concept), a scene explaining the situation (the meaning) and a set of skills to be achieved with a difficulty level degree. This sheet is used in class before and during the session in case of difficulties.

FIGURE 2 ACTIVITY SHEET WITH PICTOGRAMS

Task	Pictogram	View	Skills
Walk			Coordination, orientation, attention Difficulty: low
Fly			Coordination, orientation, attention Difficulty: low
Sit			Coordination, Difficulty: low
Wear			Coordination, attention, memory Difficulty: medium

Source: Own

The Transmedia SmartCity experience

A stepwise website explaining the experience can be found here (Gea, 2017). This project has been evaluated on a School Santa Teresa de Jesús (Granada, Spain) during 1 year. After the initial coordination meetings, 10 students were recruited (two of them on the autism spectrum) for the learning experience. After the first training session, 5 of them were selected to start the training program. The difficulties arise in the level of attention and socialization (in some cases they need a full time assistant) of the participants, and other collateral physical deficits (no verbal communication). The candidates chosen are between 16 to 19 years old and lower IQs than other children with similar ages (44-56). Common problems are: low verbal comprehension, low reasoning capabilities and retention, low abstraction level and several difficulties with written language. Remark that two of them have good visuo-spatial perception. This first selection allows us to detect how to overcome usual problems. For this piloting experience, we plan to discover some preferences and approaches to maintain their attention on 50 minutes session in the 3D virtual reality environment. For future, we plan to extend the range of users with the experience acquired in this study.

Training sessions have different organisation according to the objectives in each stage of the project. First of all, two exploratory sessions are organised with a poll of activities and different child's distribution. The aim of this phase is to acquire knowledge about their feelings, skills, motivation and difficulties to act in a virtual environment. Figure 3 shows a focus group session where each child performs the task individually, and the rest of students observe how they solve it. The aim is to learn each child from others (in sequence) and motivating in each step with applauses when the task is done correctly.

FIGURE 3. FOCUS GROUP TRAINING SESSION



Source: Own

Some of the activities to carry out have the following issues to achieve:

Gestures. Expression of emotions as a key issue in the project. Standard gestures are proposed during session with predefined shortcut (say hello/goodbye, hand up, clap the hands, laugh, sad or angry)

Role Play. Each session, different character (the major, the police, the salesman, etc.) are played by children. Know their abilities and responsibilities is part of the experience learning.

Interactive objects. We are developing several artefacts for complex activities (a lift with call button, tic-tac-toe putting pieces in the correct pattern, etc.)

Debate. For each situation, questions are done to the children (Do you know..? Have you visited...? How it works...?) and answer are given using chat systém.

FIGURE 4. THE SESSION WITH STUDENTS IN ACTION



Source: Own

The users can live in the new SmartCity (similar to the city they know) and they can create new rules and take decisions about how they live. Figure 5 shows a debate in the Town Hall.

FIGURE 4. AVATARS IN THE TOWN HALL



Source: Own

An evaluation of these sessions is done in each session according to the curricula guidelines of the school where they belongs. This evaluation analyse the following dimensions:

Norms, rules of living together, conflict prevention, in school and socio-labour activities.

Personal autonomy on everyday life. Participation

Social integration

Knowledge-based areas: mathematic, linguistic and literature, social and environmental.

New issues identified as spatial orientation, capacity building on 3D, remembering and recall tasks,

making stories.

Nowadays, we are creating collective stories about facts done in the city. Most of them are based on the communication chat, where we a teacher acts as narrator and the children play with different roles on each session.

Conclusions and Future Work

This paper focuses on the learning experience of users with cognitive disabilities on 3D virtual world. The results obtained in this project are the following:

A methodology to create mixed reality learning experiences interacting with the city, working on physical and virtual places.

An inclusive approach where collectives with potential risk of social and labour exclusion are involved on technologies suitable for their adoption on Smart Cities.

Learning resources related with areas of a Smart City adapted to user with cognitive disabilities.

Proposal of creativity by building a Virtual Museum, where this collective interpret key concepts of a Smart City

The increase of digital skills by understanding new media of communication and development using Virtual Reality and MMORPG sandbox to play storytelling

Although we continue working with these children, we plan to extend this experience to other school and collectives. This proposal is supported by the Board of Education and Culture in our region, so the plan is to extend to other stakeholders.

On the technical point of view, this is an ongoing research, and in the future we plan to evaluate alternative immersive media (Google cardboard) to visit stand-alone 3D virtual world and creating activities for a mixed Reality paradigm (between real users and avatars). This isn't a full immersive experience neither mixed reality approach. In fact, we have detected difficulties on children to manage camera position of the 3D avatar (uncomfortable where many users are in the same scenario), they also have difficulties to understand some interactive objects and complex interfaces. Observing their feedback, they don't need so much realism or complexity to interact; they prefer simpler interfaces, known objects and simpler language (i.e. based on pictograms or recognisable images). In fact, the learning experience combines their known buildings, roles that they understand and also, physical educational resources (printed money, printed cards) shared in the session. Although simpler models seems more effective, in next section we propose the study of a mixed reality learning experience by mapping physical places (on the city) with virtual buildings in the virtual reality world.

Future work is to create an international community of practice to exchange experience and results, and

connecting in reverse way the real world with virtual world using Augmented Reality as shown in figure 5. The goal is to create and collect new collective storytelling about children experiences, and share for other schools and people involved in this methodology.

FIGURE 5. CONNECTING THROUGH AUGMENTED REALITY TO THE SMARTCITY



Source: Own

Acknowledgements

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USE OF MOOC FOR ICT DIGITAL COMPETENCES	MARIA GUTU Ion Creangă” State Pedagogical University, Faculty of Education Sciences and Information, Republic of Moldova,
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Key words: MOOC, ICT, digital skills, digital literacy, digital competences

Abstract: Information and communication technology has improved access to information. Therefore, we have to ensure that students either teachers have a good Digital Skills. This paper show the situation of e-learning in Republic of Moldova and the heading project developed by “Ion Creangă” Pedagogical State University to launch a MOOC Course using the Technological Pedagogical Content Knowledge (TPACK) framework.

Theoretical Framework

Information and communication technology has improved access to information. Online courses enhance learning through short videos, self-assessments, discussion forums and networks (Glance 2013). Massive Open Online Courses (MOOCs) are a new way of online education that includes virtual interaction, feedback, discussions, evaluations and certificates. The MOOCs are massive, so they facilitate access to education through information and network technology (Grover 2013). In other words, MOOCs allow a lot more individuals to participate in learning activities and they have the potential of improving the quality of the learning experience at the same time. Due to their characteristics MOOCs can be a good tool for developing digital competences (Rivera 2015).

To achieve the best result with online methodology (such as MOOC), we have to ensure that students either teachers have a good Digital Skills. **Digital skills** are an important element in the educational environment, their development and integration should be a priority in order to address modern society demands (Rivera, 2015). Van Dijk (2013) describes the concept of “digital skills” as a succession of several types of skill. The author divides digital skills into six categories: *medium-related*: operational skills and formal skills; *content-related*: information skills, communication skills, strategic skills and content-creation skills. But, in Van Dijk’s opinion is that “the operational skills” are the most basic skill, the capacities to work with hardware and software. These skills have acquired much attention in the literature and in public opinion. The popular view is that skills problems are solved when these skills are mastered.

Also, **Digital literacy** is important because it is the underpinning influence that sustains an individual’s competent and purposeful use of digital technology in education, in the workplace and in the daily activities (Wan Ng 2015). The European Information Society (Wan Ng 2015, 128) gives the following definition:

“Digital Literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the

context of specific life situations, in order to enable constructive social action; and to reflect upon this process.”

The American Library Association’s digital task force (Edweek.org 2016) claimed that “Digital Literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills”. Therefore, digital literacy principles and practices must be taken into account to create better content suitable for students with different needs and abilities with technology.

There are other similar approaches of Digital Literacy using online courses, but no MOOC. This is the case of C2I in Tunisia (Daouas 2012). In countries as New Zealand, Hong Kong, Scotland, Finland and Norway, concepts such as the “information society” and the “knowledge society” have been used by policymakers to argue the need to implement “new technologies” into educational practice, and Digital Literacy has been nominated as a key area of competence in school curriculum statements (Sefton-Green 2009).

Indeed, we will focus on MOOC due to the following features:

It is Massive, so we can achieve a large student population participation with different skills and needs.

It is Open – so we can offer this course to a wider community. In our case, we are interested in those people who speak Romanian as a native language.

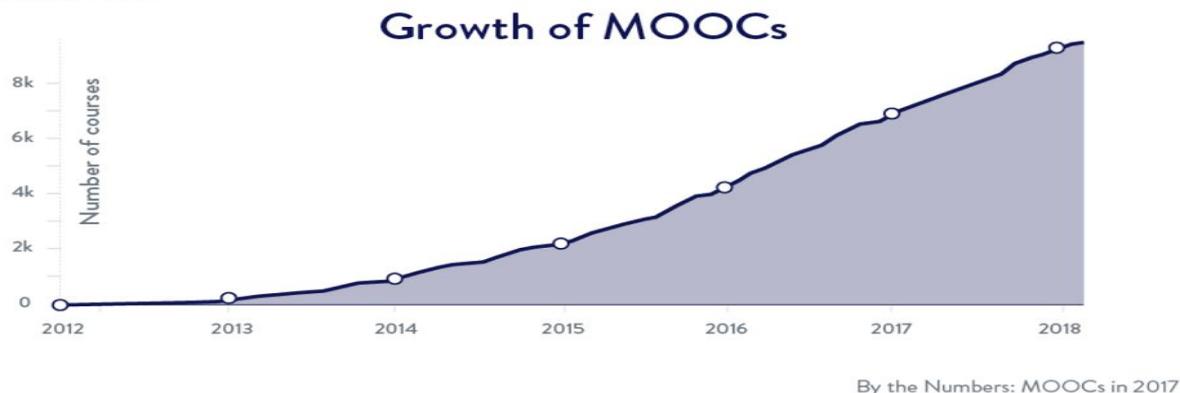
It is Online – so we can follow as you need without mobility barriers, and

it is a Course – so we can evaluate the progress of student with our methodological approach.

The term MOOC was coined in 2008 by Dave Cormier of the University of Prince Edward Island. The Connectivism and Connective Knowledge course (CCK08), led by George Siemens and Stephen Downes was the first to incorporate open learning with distributed content, making it the first true MOOC (Parr 2015). MOOCs courses have enrolled millions of users. The Class Central (Shah 2017) relates 81 millions learners (see Figure 1) registered at more than 800 universities in about 9400 MOOC courses, but the rate of those who in reality complete the courses is low, circa 10%.

FIGURE 1. GROWTH OF MOOCs.

CLASS CENTRAL



Source: <https://www.class-central.com/moocs-year-in-review-2017>

The success of Massive Open Online Courses has stimulated teachers and universities to change the teaching methodologies due to the ability to create online contents for wider student communities (Gea, 2014). These courses are grouped in the following platforms: Coursera, EdX and Udacity (Yousef, 2014), and most of the courses are in English, MiriadaX for Spanish speakers (Annex1, 2), Fun MOOC (France Université Numérique) (Annex1, 9), MOOC Francophone for French speakers (Annex1, 4), Open HPI (Hasso-Plattner-Institut) for German speakers (Annex1, 5), Eduopen for Italian speakers (Annex1, 1), MOOC România (Annex1, 3), UniCampus for Romanian speakers (Annex1, 7), UchiNovoe (Учи Новое) (Annex1, 6), Universarium (Универсариум) for Russian speakers (Annex1, 8), etc.

The education offers for professional development provided by the Moldova higher education institutions are mostly traditional: face-to-face training sessions/courses for several weeks or during weekends, workshops and seminars. There are also some providers that deliver blended courses, namely a mixture of traditional sessions and e-courses. So the MOOC proposal might be a challenge for teachers in Republic of Moldova, and a good experience to increase digital skills for students.

E-learning trends in Republic of Moldova

As we progress into the 21st century, our work focuses on preparing teachers and students for success in work, life, knowledge based, technology-rich, changing quickly the world in which they live. This task requires to make connections between the needs for teachers and students' digital skills development promoting MOOCs and digital literacy in education. In the case of Republic of Moldova, the MOOCs movement is at the very early stage: the concept of MOOCs is new for teachers and students, the level of awareness on availability and usage of MOOCs is quite low among them.

For this reason, "Ion Creangă" State Pedagogical University has launched a project "Teachers' Continuous Professional Training through Development of Massive Open Online Courses (MOOCs)" (Dumbraveanu 2017) conceived within the bilateral program of collaboration with West University from Timisoara, Romania. The goal of promoting MOOC was to increase the digital literacy, focusing

on the needs of Moldova teachers and students as a means for the accomplishment of continuous professional development requirements. The initiative to elaborate a pilot MOOC intended for teachers, as a premiere for Moldova, has the ambition to investigate the challenges and at the same time to mitigate the risks related with delivering MOOCs for the professional development (Dumbraveanu, 2017).

There are many challenges that influence the students' learning, personal attitudes and character building being online frequently. But, how effectively they learn with online materials depends on how well they can look for information and how well they can evaluate the trustworthiness and accuracy of the resources and use them ethically to re-synthesize new content (Wan Ng 2015). A student with a high domain knowledge and web-search expertise would select more relevant information and would not spend more time on evaluating the trustworthiness of the materials. These different learning styles (Advanogy.com 2004) makes that teachers support and help their students to search effectively on the web because it is an important part of developing their digital literacy. The aims is to enhance digital literacy competences both among teachers and students as well as among adults by this mutual collaborations. Being digitally literate maybe ensures that the teachers and students understand about privacy, security and cyber-safety. Still, digital literacy courses addressing adults usually face several problems due to the lack of common backgrounds and purposes among learners (Delfino).

In the national strategy for information society development "Digital Moldova 2020", it was stipulated that Republic of Moldova faces with increasing ICT skills gap and with a low level of digital literacy. ... Since a large part of population does not possess the necessary learning traits, knowledge and digital skills throughout their lives, that have become nowadays something ordinary for many countries population, it reduces the opportunities to participate in the global digital economy"(Strategy "Digital Moldova 2020" 2012). So, this approach follows the recommendations of the Moldavian Education.

This report claims that Digital literacy of the population starts from the general education system and mainly due to:

Curriculum adjusted to the needs of society;

Well trained teaching staff;

Integration of information technology in the didactic process.

These recommendations agree with Union European priorities for improving teacher quality and teacher education, recalling the need to improve teachers competences. The area in which teachers need continuous professional development concerns knowledge of taught subjects, pedagogical skills, digital skills, research, innovation, collaboration, continuous learning (Dumbraveanu 2017).

Methodological approach

Moldovan teachers may have to enhance their digital skills but some difficulties arises: no enough time to improve their knowledge with new technologies, few suitable learning contents available and also funding to do it. In this case, MOOC course may be a reasonable solution to fulfil some of these requirements.

According to Fyle (2013), the continuing professional development of teachers can be categorized into teachers who already have a teaching qualification but need upgrading, teachers who need reorientation education due to curriculum change, and teachers who seek career development. Teachers can take a MOOC for different reasons, not especially for completing and getting certification. The teachers' reasons, goals and motivations should be found out through a questionnaire before the elaboration of the MOOC, or at the registration stage with the purpose to make course adjustments for the future.

A questionnaire was distributed online with the purpose to investigate the teachers' opinions about the digital online courses and to make conclusions about their readiness for MOOC. Around 1300 teachers from Romania and 440 teachers from Republic of Moldova answered the survey questions. The word MOOC did not appear in the text of questions, as this term is quite new for teachers, instead the term online course was used (Dumbraveanu 2017).

The analysis of the answers showed that about 90% of the respondents intend to learn something new or to update their knowledge in the near future, therefore they seek for continuous professional development. Around 75% are eager to be enrolled in the online courses for accomplishing the mentioned intentions. The most interested and demanded topics selected by teachers from the proposed areas were ICT tools in education, education software and specific applications with practical examples (ICT area); subject didactic and learning & assessment strategies (pedagogical area) (Dumbraveanu, 2017).

This MOOC pilot in fact is a combination of cMOOC and xMOOC (Downes, 2008). We consider that there should not be strict delimitation in the type of offered MOOC. In reality in traditional classes the teacher follows in an interchangeable way the connectivity learning theories (used mostly in xMOOCs) and the behaviorist ones (used mostly in cMOOCs).

We provide a rich array of resources so that participants can personalize their experience by identifying their own goals, selecting the resources and deciding whether, when, and how could use and implement them. This freedom addresses the most creative and enthusiastic participants, to engage them in further activities for their own classroom learning environment. Through the use of case studies, classroom and school related projects as learning activities the teachers become involved in job-connected teaching and learning situation, another strong reason described by Light & Polin (2010) as good asset for digital skills development via MOOCs.

The mission of the implementation MOOCs in Republic of Moldova is to advance the quality of teaching and learning by:

Maintaining high and rigorous standards professional and digital competences for what accomplished teachers should know and be able to do;

Sharing educational tools and software, and

Providing a national system certifying teachers who meet these standards.

The challenge for the project team as MOOC designers was to select and to structure a coherent, well-balanced set of topics to transpose all the described principles providing at the same time the needed flexibility to address the different goals, contexts, roles, prior knowledge and learning preferences of the participants. For the course “Web 2.0 tools in education” we found a lot of web resources and a MOOC “Powerful Tools for Teaching and Learning: Web 2.0 Tools” delivered by Houston University on Coursera platform (Coursera MOOC). We found this Coursera MOOC after the designing of the structure and scenario for the pilot course. The topics of our MOOC are different; nevertheless, we were inspired from the Coursera MOOC as regarding the methodology of describing the topics and especially on the final research project. The Web 2.0 teaching tools are not magical, but they can bring real benefits in classrooms if harnessed at their potential power. The use of Web 2.0 tools to support education is quite important. The adequate use of these tools is going to make an essential contribution in the students’ achievements and in the development of 21st century digital teacher skills.

Creating MOOC courses was based on The Education Code of the Republic of Moldova (2014), Standards for professional competences for school teachers (2016) and Standards for digital skills for school teachers (2015). Also, we were inspired from the National Board for Professional Teaching Standards (NBPTS) (2016). NBPTS standards are based on “Five Core Propositions” for teaching, which are (NBPTS, 2016):

Teachers are committed to students and their learning (Teachers recognize individual differences in their students and adjust their practice accordingly; understand how students develop and learn; treat students equitably; know their mission transcends the cognitive development of their students.);

Teachers know the subjects they teach and how to teach those subjects to students (Teachers appreciate how knowledge in their subjects is created, organized, and linked to other disciplines; control specialized knowledge of how to convey a subject to students; generate multiple paths to knowledge.);

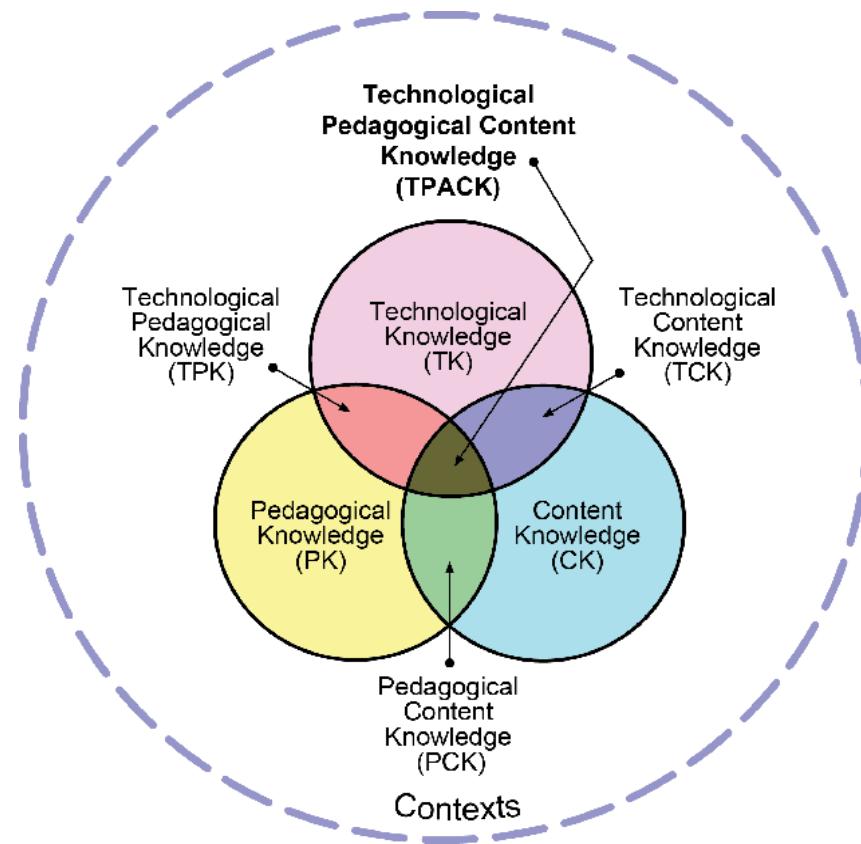
Teachers are responsible for managing and monitoring student learning (Teachers use a variety of methods to accomplish their instructive objectives; support student learning in settings and varied groups; assess students' progress; involve students in the learning process.);

Teachers think systematically about their practice and learn from experience (Teachers make difficult choices that test their professional judgment; use feedback and research to improve their practice and positively impact student learning.);

Teachers are members of learning communities (Teachers collaborate with other professionals to improve school effectiveness; work collaboratively with families; work collaboratively with the community.).

To achieve this goal, we propose to develop new digital practices (Mishra and Koehler's, 2006) by using the Technological Pedagogical Content Knowledge (**TPACK**) framework (see Figure 2). According to Koehler (2009) the outcome of TPACK is to “identify the nature of knowledge required by teachers for technology integration in their teaching, while addressing the complex, multifaceted and situated nature of teacher knowledge”. The TPACK framework extends Shulman’s idea of Pedagogical Content Knowledge providing a valuable tool for teachers to help them navigate through new digital literacy landscape as part of a professional learning community. As we can observe, effective teaching requires the ability to integrate content, pedagogy and technology flexibly during the act of teaching.

FIGURE 2 MISHRA AND KOEHLER'S TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE



Source: 2006. <http://tpack.org/>

At the heart of the TPACK framework, is the complex interplay of three primary forms of knowledge: Content Knowledge (the teachers' knowledge about the subject matter to be learned or taught), Pedagogy Knowledge (the teachers' deep knowledge about the processes and practices or methods of teaching and learning), and Technology Knowledge (the knowledge about certain ways of

thinking about, and working with technology, tools and resources). The TPACK approach goes beyond seeing these three knowledge bases in isolation. The TPACK framework goes further by emphasizing the kinds of knowledge that lie at the intersections between three primary forms: Pedagogical Content Knowledge (it is applicable to the teaching of specific content), Technological Content Knowledge (to understand the manner in which technology and content influence and constrain one another), Technological Pedagogical Knowledge (to understand how teaching and learning can change when particular technologies are used in particular ways), and Technological Pedagogical Content Knowledge. Underlying truly meaningful and deeply skilled teaching with technology, TPACK is different from knowledge of all three concepts individually. Matthew Koehler and Punya Mishra expand upon this in much more detail on their site <http://tpack.org>.

Why is it good to use the TPACK? Here are some recommendations:

It allows you to create a learning and sharing culture in which there are opportunities to develop your technological abilities;

Provides students with the opportunity to demonstrate their digital skills;

It does not allow technology to dictate learning, but combines it with pedagogy and knowledge about content;

Provides the opportunity for teachers to collaborate to discuss the developments they have encountered using technology;

It helps build a set of basic applications that the entire teaching staff can use.

Now we are in the process of developing the course with such criteria. We expect that the MOOC course will be finished on September to evaluate the process during next semester.

Conclusion

This paper focuses on the digital skills learning in the Republic of Moldova. Therefore, we identified that it is necessary to improve the digital literacy to students and also teachers. And we concluded proposing a MOOC course that fits this needs using a novel methodological approach called TPACK. We are in the beginning of this study, but the expectations are promising to achieve better results in such direction. We are also interested to exchange experiences with other colleagues with similar needs to enrich this project with international collaborations.

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Annex 1

List of MOOC provided:

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https://www.fun-mooc.fr/cours/#filter/availability/starting_soon?page=2&rpp=50 accessed 4th April 2018.

VISUAL LITERACY AS AN EDUCATIONAL CHALLENGE IN THE ERA OF RISK SOCIETY	FILIP HUNEK Faculty of Social Sciences Charles University in Prague, Czech Republic
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Key words: Visual Literacy, Risk Society, Visual Culture, New Media, Education	

Abstract: People living in Western societies are facing many events and situations, which can be described as a risk. However, according to Ulrich Beck (1992), in a modern society, risk has different qualities than it had before. Moreover, Anthony Giddens (1992) concludes that in the modern world, we have to trust abstract systems such as science or politics. People in Western societies are not being threatened by wild animals or hunger anymore, but by dangers they hear about in the media, which are usually described or even created by those abstract systems. In this paper, I try to point out that living in the risk society era leads, especially among young people, to a quite understandable reaction; they try to find a consolation in saving their certainties and memories into digital photographs and sharing them via social networks (Sarvas & Frohlich 2011), in our paper we are mainly focusing on photographic social network Instagram. It is the photograph that plays a crucial role in shaping the awareness of one's own memory, identity, and belonging to a community. Through photographs, on the one hand, we perceive the world and store our individual (Van Dijck 2005) as well as our collective memory (Pink 2011). On the other hand, photographs serve as a means of self-expression (Tinkler 2008). Moreover, today's time is greatly fragmented, discontinuous, and episodic, which, on the other hand, leads human individuals to constantly legitimize themselves as unique and authentic individuals (Bauman 2002). This is happening in a highly fragmented environment of the internet where audiences are formed on the basis of similar interests, tastes, subculture or ethnic group identification (Carey 1993). Furthermore, this constant visual communication requires a continual adaptation to the media messages, which puts an increased emphasis on visual literacy as a part of educational process. In short, the main goal of this contribution is to introduce an analysis of several significant digital photographs shared recently via visual social networks, highlight some of the discursive strategies encrypted in them and, as a result, offer visual literacy as a challenge for temporary education.

Introduction

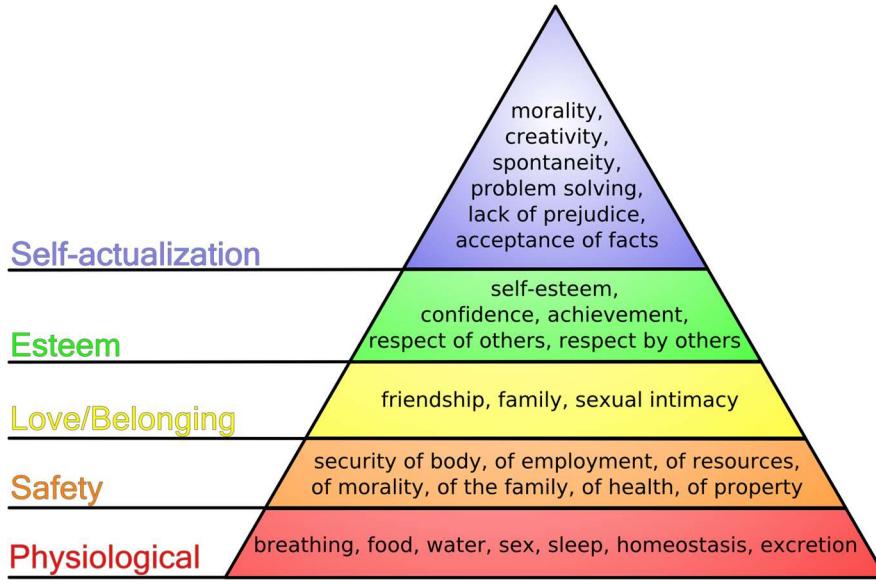
People living in Western societies face many events and situations, which can be described as a risk. However, according to Ulrich Beck (1992), in the modern period risk has different qualities than it had before. This paper will introduce Beck's concept of a risk society (Beck 1992) and explain its mechanisms using the theories of Abraham H. Maslow (1968) and Konrad Lorenz (1974). The contemporary period is characterized by significant discontinuity, fragmentation and episodicity, which paradoxically leads human beings to constantly verify their individuality, authenticity and personal identity (Bauman 2002). Young people especially develop their own ways of creating continuity and asserting authenticity through visual media. Using an analysis of a selected photo content from the Instagram social network, this paper highlights how visual communication has become a part of our every-day communication (Mirzoeff 1999) and claims that visual literacy is increasingly important in the education of youths. The paper argues that visual literacy should become a crucial part of the education process due to the increasing tendency of youths to depict and understand the world they live in via visual media and visual contents.

Living in risk society

This essay differentiates between pre-modern society, early modern society and modern society in the context of Western culture. The pre-modern society occurred before Enlightenment in seventeenth century, a period between seventeenth century and an origin of risk society in nineteenth century is called the early modern society and the modern society is used as a synonym to the risk society.

The beginning of modernity in Western societies is bound with Enlightenment in seventeenth century, and its idea that human civilization is developing due to an objective knowledge. Therefore, an early modern society sought to understand the social and natural world with respect to its objective, calculable and predictable rules. If we reconsider the Maslow's model of hierarchy of needs (1968), it seems that people in the early modern society try to climb up the pyramid of needs in order to find a happy and peaceful life (see Picture 1). According to this theory, people have to secure their needs on a lower level of the pyramid before they start to be interested in an upper level (Goble 1971). Naturally, if one is hungry they tend to find something to eat and not to consider a self-actualization.

PICTURE 1. MASLOW'S PYRAMID OF NEEDS



Source: Image: Maslow's hierarchy of needs.png from Wikipedia, the free encyclopedia. [Online] available from: http://en.wikipedia.org/wiki/Image:Maslow%27s_hierarchy_of_needs.png (Accessed 20th May 2018).

A model of the risk society works in a contrary direction. According to Beck, as described in his book *Risk Society: Towards a New Modernity*, the driving force of early modern society was expressed in the statement: 'I am hungry!' The driving force of risk society is now summarized in the phrase: 'I am scared!' In a risk society people feel to be under threat (Beck 1992); they do not consider the levels already reached as certain and granted nor do they believe in a future which brings them new certainties on the higher levels. They are afraid that they would lose also those lower level certainties, which they have already reached. Therefore, the notion of one's needs in the risk society is not expressed in the phrase: 'What else can I reach?', but: 'What else can I lose?'

The definition of risk in Beck's definition of the modern society has a different meaning than the commonly used term. Ulrich Beck says that "risk is a systematic way of dealing with everyday hazards and insecurities of civilisation which typically escape our perception because they are localized in the sphere of physical and chemical formulas" (1992, 21). In our everyday life we are scared of such things as nuclear power, pollution or radiation, complex things we do not have enough knowledge about and which we can

neither see nor feel. The only thing we know about them is that they are recognised by scientists and that we can read about them in newspapers. And as Anthony Giddens (1992) concludes, even though we do not know the mechanics of these complex systems, such as medicine, science, and politics, we are compelled to trust them. Modern societies, at least those in the Western world, are no longer being threatened by wild animals or hunger. Instead, the main dangers are those that we hear about in the media; social media including.

Media in the era of risk

The social effect of risk is not dependent on its scientific validity (Beck 1992). This means that people are unable to assess the extent to which a certain risk means a real threat, because the information they gain about the risk is based only on news published in the media. There is a significant difference between a personal risk, which was typical for the pre-modern and even for the early modern society, and a global danger, which occurs in the modern society. These global risks are usually invisible. They cannot be experienced as such, which means that they must be believed.

Konrad Lorenz (1974), who attempted to determine the eight biggest problems of modern society, speaks about human biological mechanisms that used to help people feel safe against the threats of nature in the pre-modern period. As he claims, however, in modern societies those mechanisms work against people. One of the examples he gives are human instincts. In previous periods, when people heard a noise of anything unknown or just felt something strange before it came, they had enough time to get themselves into safety. The same instincts work in the human body today even when a direct threat of wild nature has disappeared (Lorenz 1974). However, although there are no direct natural threats, it is the same principle that causes contemporaries to be over-scared by events that appear in the newspaper and television news. The difference is that people do not experience the threats directly but always only through the media. And the media often uses the kind of language that exacerbates angst (Fowler 1991). Moreover, this is all happening in a highly fragmented environment of the internet where audiences are formed on the basis of similar interests, tastes, subculture or ethnic group identification (Carey 1993).

Increasingly visual social media play a crucial role in the dissemination of news about such risk events. Moreover, social media became a field where users play a role of both passive recipients as well as active producers (Kietzman 2011). Digital photographs, which individuals share via social media, Instagram among them, serve as a means of self-expression (Tinkler 2008). Those photographic media representations help reproduce cultural configurations and naturalize them. These representations often have a more powerful impact on people than the real persons with whom they are in daily contact. Screen images are likely to be far more exciting and seductive than parents, teachers or neighbours. Such content presented in the media represents an alleged ideal world. The image of how the world would like to be has obvious implications for the ways in which especially young people act in everyday life (Evans 2012).

Due to the widespread ownership and technology of mobile phones, which most of us constantly have in our pockets, we can create an unlimited number of photographs depicting scenes from our everyday lives. It is the personal photograph that plays a crucial role in shaping the awareness of one's own memory, identity, and one's belonging to a community, since photographs that are designed to spread over the internet are stylized differently than shots that are intended for personal use only or that we only want our friends or family members to see (Van Dijck 2008). Through photographs we perceive the world and store our individual (Van Dijck 2005) as well as our collective memory (Pink 2011).

Challenging the risk society via Instagram

The contemporary time is marked by significant discontinuity, fragmentation and episodicity, which paradoxically leads human beings to constantly verify their individuality, authenticity and personal identity (Bauman 2002). Western populations are facing a new situation, where traditionally unambiguous categories, such as culture, nation or masculinity and femininity, are being challenged and are becoming blurred (Jackson et al. 2001). Consumer culture has created a new ideal image of self-experience and the market has commodified it. Representations of individual desires, needs, and aspirations have been articulated by the signs of commodities, and paradoxically, this has happened in a culture which values authenticity and self-fulfillment (Benwell 2003).

Identity is not an essence or a fundamental; rather, it is a set of signs that are performed in a given society. It is a performative act; a socially regulated performance, which is culturally constructed through a *repetition of stylized acts* in time (Butler 1990). In our era, young people are taught via television, advertising or social media that they can hypothetically become anything they want. Movies, advertising, lifestyle magazines, or music videos are an invitation for people to break ranks, pursue their individual desires, and express themselves through the consumption of expensive clothes, toiletries and leisure activities (Benwell 2003). The same can be easily said about social media, which give us the option to be in contact with the whole world on an immediate basis. The recent global spread of mobile devices and internet connection has opened up the possibilities to produce and receive digital content at the same time; and digital images have become truly omnipresent (Hunsinger & Senft 2013). From this point of view, social media provide people with a kind of conceptual map for safely navigating their anxieties, whether those are related to their health, their careers, their relationships or their place in the consumer culture (Kietzmann 2011).

The way we perceive the world is a product of discourse, and discourse is always normative; discourse has its rules, orders, and a system of penalties. Michel Foucault (1991) speaks about regulative discourses, which include disciplinary techniques that coerce subjects to perform specific stylized actions. To become a person means to play a certain role; socializing agents such as the family, school, and the media inculcate and validate appropriate behaviour. While some roles are socially dominant, other roles are widely

understood as being inappropriate (Beynon 2002). The same rules are to be found on social networks; socializing agent par excellence. In the simulated reality of visual content creation, there is an inflation of images, which produces ever new virtual copies of a non-existent original that is more realistic than reality (Baudrillard 1983).

Instagram offers an important platform for creating, distributing, and receiving digital photographs. We create more and more instant photos of our morning coffee in the café, delicious dessert, sunset, or of well-known places, that were created in the exact same way by thousands other users before us. Researching the visual culture of the internet, Lev Manovich, described the phenomenon of *instagramism*, a way of stylizing and producing digital photographs, where users do not care about telling stories about real life. According to Manovich, Instagram photos “blur (...) the semantic function of a representation. They are not about showing, or signifying, or registering, or narrating” anymore (Manovich 2017, 80). Instagram users create their own world, certain and secure, which can be far away from the real-world events, what Deleuze (2006) describes as fabulation.

The myth of the humanity of the past is disappearing, but the fabulousness of the people of the future, created through social media, the future that creates its legitimacy by referring only to itself, is increasingly taking place and verifying our certainties. In the analysis, I will try to verify a hypothesis that this verification of certainties is happening with a purpose to divert our attention and therefore minimize the emergency of the risk society threads all around us.

An analysis of Instagram photos

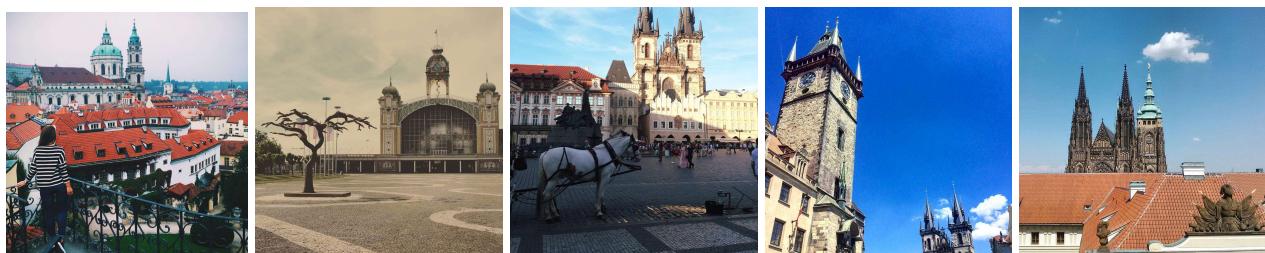
What I want to argue in this paper is that the principles of modern risk society lead to a reaction, especially among young people, whereby they create certainties by storing memories in digital photographs, and sharing them via social networks, in this case on Instagram (Sarvas & Frohlich 2011). Any reading and interpretation of Instagram pictures is contextual. The following analysis of Instagram photos and their discursive strategies will illuminate the meanings contained in Instagram photos. It is essential to understand them as a text. A text in this connotation does not mean only a collection of pictures, hashtags and comments, but a complex message from the authors to their audiences.

There are three levels of textuality, as shown by John Fiske (2004). On the first level, there are the cultural forms that are produced to create the idea of a media event. For Instagram photos this includes the pictures as such. On the second level, there is a variety of media talk in popular magazines and newspapers, advertising, web-sites, television programmes, and radio shows, all of which offer a variety of critical commentary on the Instagram social network and the pictures themselves. The third level involves the way in which cultural forms become part of our everyday lives. Moreover, according to Foucault (1991), discourse - and the Instagram photos are nothing else than a specific discourse - constitutes and

constructs objects of knowledge, social subjects as well as the whole society. Every text, too, is conditioned and inscribes itself within a given discourse.

The analysis, the results of which I introduce below, is part of my dissertation thesis, which examines Instagram photos as a phenomenon of contemporary visual culture. I analysed more than 50.000 Instagram photographs created from 1st June 2016 to 31st August 2016. I chose my sample based on the place in which they were made - Prague, the Czech Republic. The sample can undergo further analysis in the future. Analyzing the sample of photographs, I looked both for similarities in their content and in the way the photographs were taken, and identified several production routines, which occurred repeatedly. From the geographical perspective, users tend to depict pictures of places, which are famous or familiar (see Picture 2).

PICTURE 2. PHOTOS OF FAMOUS PLACES IN PRAGUE

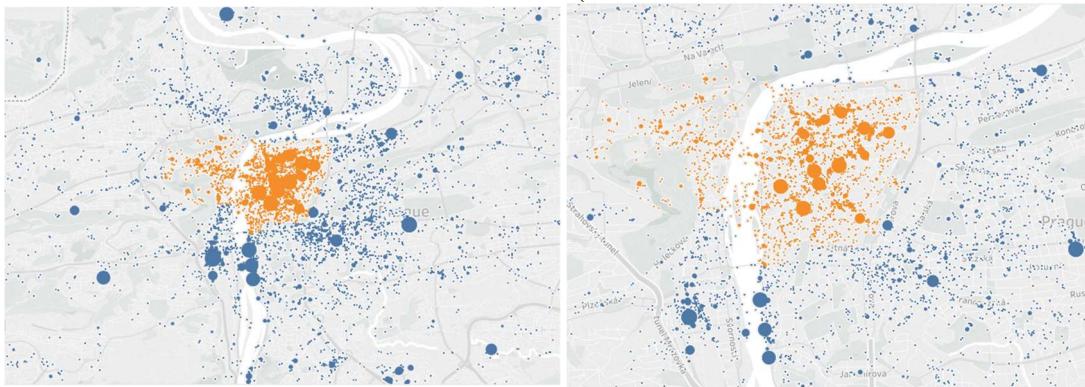


Source: Instagram, July-August 2016. Research from author's dissertation thesis.

I gathered the photos together, clustering them by the number of individual photos and likes given to those pictures by other users. The result was visualised on a map of Prague using *Tableau* visualisation software¹ (see Picture 3), and seemed to be very similar from both the producers' and the consumers' point of view. While the producers tend to take pictures (each point on the map refers to one individual picture), consumers tend to give likes (size of each point refers to number of likes given to certain picture), mostly to those pictures, which were taken on famous or favourite places in Prague. In other words, the closer to city centre, the more photos were taken and the more likes they received. These observations confirmed the fact that Instagram is a platform where users are acting as both active producers and passive recipients (Kietzman 2011).

¹ Available on <https://public.tableau.com/>, accessed on 20th May 2018.

PICTURE 3. MAP OF PLACES WHERE PHOTOS WERE TAKEN (COMPARISON WIDER PRAGUE AND INNER PRAGUE)



Source: Instagram, July-August 2016. Research from author's dissertation thesis.

I have identified several production routines when it came to the content of the photos. There were several topics, which routinely appeared on various photos and which were repeatedly reproduced by different users. In the research sample, the following content routines have been identified:

- Famous or favourite place (see Picture 2);
- Food and drinks;
- Flowers;
- Sport activities;
- People (selfies, individuals, couples and groups).

For examples of some of those topics – see Picture 4.

PICTURE 4. EXAMPLE OF PRODUCTION ROUTINES FROM CONTENT PERSPECTIVE



Source: Instagram, July-August 2016. Research from author's dissertation thesis.

This is a good illustration that shows how we perceive the world and preserve our individual (Van Dijck 2005) as well as our collective memory (Pink 2011) through photographs. However, I was unable to find a good sample of photographs that would provide a direct evidence for the link between the digital photographs taken and shared via Instagram, and the handling of risk on both personal or collective levels. Even though some of the pictures from the research sample show risk directly or depict potentially risky situations (see Picture 5), the hypothesis about a correlation between how users take photos for Instagram,

how they react to them respectively, and their attempts to avoid the threats of modern society, remains to be validated through further research.

PICTURE 5. EXAMPLE OF PHOTOS DEPICTING RISK



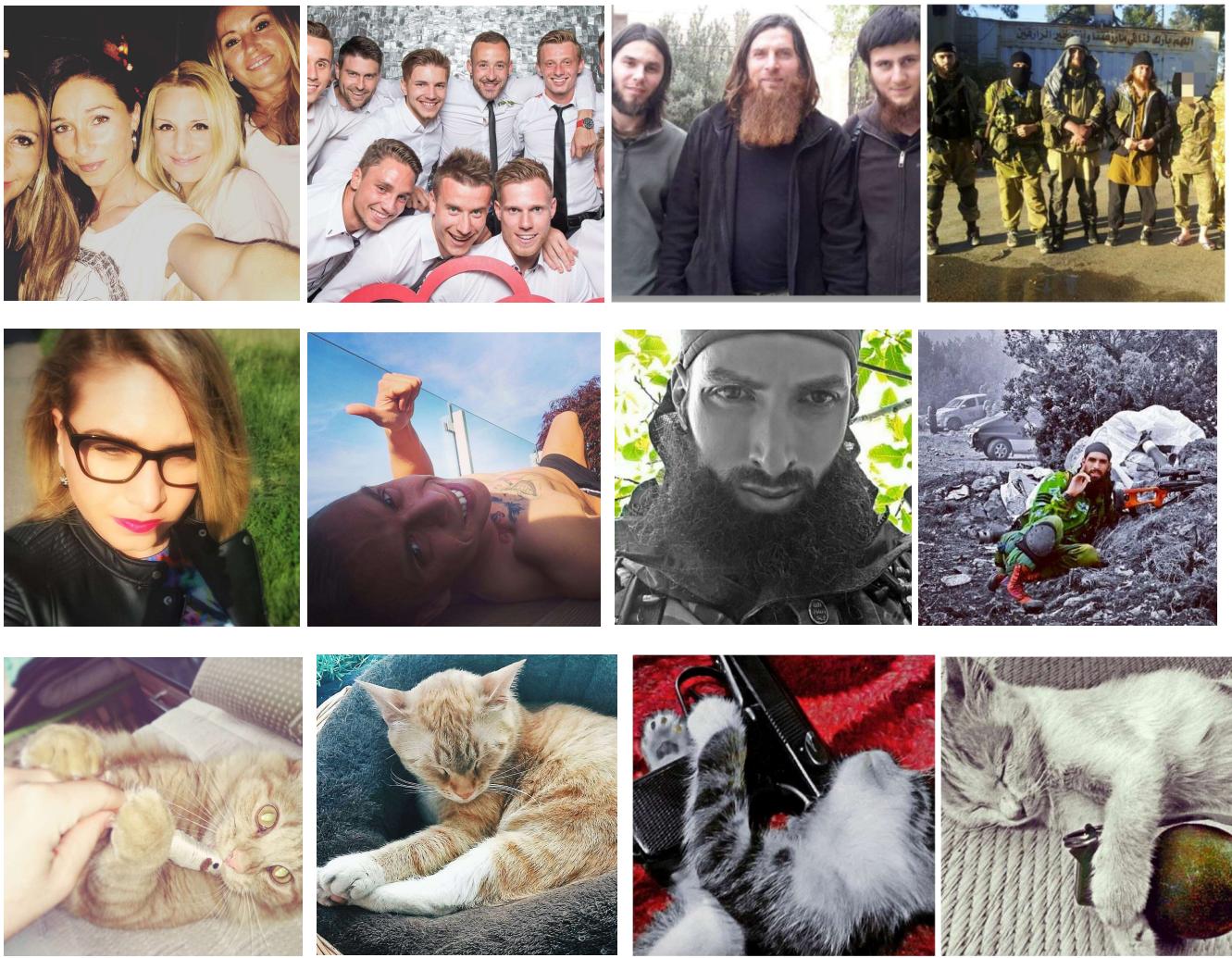
Source: Instagram, July-August 2016. Research from author's dissertation thesis.

When we put the analysed photos into another context, different findings emerged. As mentioned above, only a few of the examined photos contained a picture of risk as such. Therefore, I chose a different approach, comparing the analysed Instagram photos from Prague with another sample of Instagram photos, those that depicted a real risk, Islamic terrorism, in order to investigate the way how risk is displayed on Instagram. Elsewhere, I analysed Instagram pictures used as propaganda of Islamic terrorists (Hunek & Hanzal 2016), finding that the same visual discursive strategies are chosen for making content interesting, be it for personal or for propaganda purposes; whereby there is no doubt that Islamic terrorism is nowadays one of the biggest threats for the Western societies (Seib & Janbek 2011) and Islamic terrorists are using Instagram (as well as other social networks) to articulate their interests and spread fear (el-Nawawy & Khamis, 2009).

When I did a comparative analysis of those two samples, I got the following results: regular Instagram photos displaying everyday life in Western countries, such as the photos from Prague 2017, contain certain communication strategies or ways of depicting reality, which are typical for Instagram and which can be described as *instagramism* (Manovich 2017). Moreover, these communication strategies remain the same irrespective of whether they are used for personal or social purposes or for propaganda. The three communication strategies (see Picture 6) are as follows:

- Depicting of social groups;
- Depicting of selfies;
- Depicting of cute pets.

PICTURE 6 COMPARISON OF PHOTOS FROM ANALYSED SAMPLE AND PHOTOS TAKEN BY ISLAMIC TERRORISTS



Source: Instagram, July-August 2016. Research from author's dissertation thesis.

Those communication strategies are so similar that it requires the researcher to carefully consider the purposes of why the specific digital photos were taken. As our social networks become increasingly visual, the capability of reading and understanding visual content is becoming critically important, especially so for young people, for whom social media has become one of the most important communication channel for gathering information about events from around the world. In the above I tried to suggest the importance of visual literacy as a part of part of education process, an endeavour that should help individuals better understand the context of the current world. Due to the increasing tendency of young people to depict their lives and perceive the world around them via visual media and content, the role of visual literacy will become as important as the traditional education based on textual literacy (Duffy 2002; Tovani 2004)

Conclusion

In the contemporary world media and experts present events in a way that they are a risk. According to Ulrich Beck (1992), the risk in a modern society has different qualities than a risk ever before.

Consequently, the lay public cannot decide anymore if these risks mean a real threat or not. Moreover, people cannot affect this kind of risks anyway. This paper has explained mechanisms of Beck's concept of a risk society using the theories of Abraham H. Maslow (1968) and Konrad Lorenz (1974). Moreover, media often use language, which remind the audience there are events, which threaten civilization; enemies who must be fought against and destroyed (Fowler 1991). Lev Manovich described a phenomenon of *instagramism*, a way of stylizing and producing digital photographs (Manovich 2017), where, as I tried to investigate in this paper, there is no difference between digital photographic content produced and shared via Instagram for common personal purposes and similar content used for propaganda. Furthermore, this constant visual communication via social media requires a continual adaptation to the media messages, which puts an increased emphasis on visual literacy as a part of educational process. The visual communication on social media might be a challenge for the education of young people and might redefine the role of visual literacy as part of the educational process.

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DIGITAL LITERACY	PETR SVOBODA
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Key words: Digital literacy, digital competences, innovation, information and communication technology.

Abstract: Digital technology is nowadays more and more required for both normal everyday life as well as the working one. The ability itself to work with a computer is just a marginal matter in today's concept of digital literacy. Technology is constantly evolving and requirements for digital literacy are increasing.

The concept of digital literacy has emerged together with the growing trend of digital technology in our society. Digital literacy influences the quality of personal life. Internet has a great impact on social life. Due to the use of Internet the number of social contacts increases with greater diversity. For example, a combination of mobile phone and Internet creates new forms of family cohesiveness that are based on greater mutual contact, better co-ordination of mutual activities, sharing of topics, experiences, photos and other information. The development of digital literacy is therefore important for parents and grandparents in today's position when communication between children and grandchildren moves largely to Internet. The paper is based on the study of the approved TAČR project (Technological Agency of the Czech Republic) and the currently implemented project for the support of applied social and humanitarian research, experimental development and innovation of ÉTA at CTU MIAS, Masaryk Institute of Advanced Studies, Czech Technical University in Prague.

Introduction

Digital literacy is nowadays a more and more needed for both normal everyday life and working life. The general beliefs about what digital literacy represents is now obsolete. The very ability to work with a computer is just a marginal matter in today's concept of digital literacy. Technology is constantly moving forward and evolving, thereby enhancing the demands on a digitally literate person, who should nowadays manage the basics of programming and the ability to use digital technology in everyday life (MEYS). More and more professionals are convinced that in today's technologically sophisticated life in which one lives, they can not only remain at the level of a mere user of tools created by someone else. For meaningful use in everyday life, a person should understand the principles of technology and also be able to influence, modify, and shape the environment to a certain extent.

Clarification of the concept of digital literacy

Literacy according to (Průcha 2009) means the ability to control various kinds of communication and numerical actions to use text information in multiple life situations. Literacy is a complicated, complex and changing phenomenon. Its content and way of definition responds to a specific social context, reflects the evolution of conditions and the changing needs of society, its culture, language and standards. In accordance with the definition of the concept of literacy approved by UNESCO, digital literacy according to (MEYS 2014; MPSV 2011) is the "*set of competences necessary to identify, understand, interpret, create, communicate and usefully and safely use the digital technologies (their technical properties and content) in order to improve their quality of life and the quality of life of their surroundings, i.e. for the purpose of both working and personal self-realization, developing their potential and maintaining or increasing participation in society.*"

Digital literacy stated in (MEYS 2014) is understood in terms of key competence as a set of knowledge, skills, abilities, attitudes and values that an individual needs in order to use digital technologies and digital

media for activities such as building: task solving, communication, information handling, problem solving, collaboration, content creation and sharing, and knowledge building. These competences the individual applies at work and employment, leisure, social and civic activities, learning and personal growth.

In the publication (Brdička 2013) it is stated that digital literacy consists of seven components:

- Information literacy.
- Media Literacy.
- Digital working environment.
- Communication and cooperation.
- Creating your own digital identity.
- ICT literacy.
- Ability to learn.

According to the British company Futurlab (2010), eight components of digital literacy are defined:

1. Functional skills - Functional literacy or functional skills.
2. Creativity - the ability to create and understand digital content. That is, the process of making or receiving information itself. Creative thinking and work include intuition, inner motivation and creativity in the production of ideas, risk management and readiness to change.
3. Critical thinking and evaluation - Critical thinking allows use of intellectual ability to investigate, analyse, or process information and data obtained so that it can evaluate information and make its own judgment. Critical thinking is important in relation to other elements of digital literacy, such as the search for information or the choice of technical means.
4. Cultural and social understanding - processes supporting the creation, understanding and sharing of opinions or ideas through ICT.
5. Collaboration - ability to interact with other people. Ability to actively and responsibly participate in group work. Share own knowledge, follow the agreed rules, track the group goal, and share common tasks.
6. The ability to find and select information - the ability to find, find, recognize, select valid or important information needed for a given situation. Evaluate different data sources and information channels, pass on and process information, work with information databases, use advanced technology.
7. Effective communication - ability to communicate actively, including ability to present well, and ability to listen and argue well.

8. E - Safety - Safe work with ICT. To think about the suitability of digital content in relation to its age category and the acceptable use of technology. Awareness about virus protection, cyberbullying warning, copyrights of protected content.

According to the American Book Association (Ala-Mutka 2011, Districtpatch 2013) digital literacy is the ability to use information and communication technologies to search, validate, create and transmit information that requires both cognitive and technical skills. It has been noted (Martin 2008) that digital literacy is the ability to successfully perform digital activities (ability to effectively work with digital technology) in different life situations, which can include work, learning, leisure time and other aspects of everyday life.

Digital literacy can be understood as (Ferrari 2013) a set of digital competences (knowledge, skills, attitudes, values) that an individual needs for safe, self-confident, critical and creative use of digital technologies at work, learning, leisure time and engaging in social life. Digital competences are conceived as a set of knowledge, skills and attitudes, including the appropriate capabilities, strategies and values necessary for the use of information and communication technologies and digital media to accomplish tasks, solve problems, communicate, manage information, collaborate, create and share content, and retrieve knowingly, effectively, appropriately, critically, creatively, autonomously, flexibly, ethically and thoughtfully in relation to work, leisure, participation, learning, socialization, consumption and empowerment. Digital literacy is directly related to digital competence (Svoboda 2018). Digital competence means a sure and critical use of Information Society Technologies (TIS) at work, leisure and communication.

According to the DigComp 2.0 (Ferrari 2013) Joint Research Centre, the Digital Competences penetrates all areas of human activity. The most significant are (Svoboda 2018; Ferrari 2013).

- Working with information - digital content is searched for and processed. This also includes information evaluation, critical assessment, analysing, organizing and storing.
- Communication and cooperation - digital media is a part of communication means. Communication and collaboration requires effective interactions and sharing capabilities through digital technologies. It also makes it possible to engage in civic activities. For these activities carried out in the digital environment, it is necessary to know and respect information ethics, netiquette and ability to be able to take care of their own digital identity.
- Creating digital content - it is important to create new, but also rework or remix existing digital content. It is necessary to understand copyright and licenses. In order to solve some problems or perform certain tasks, the student should master at least the basics of algorithmization and programming.

- Safety - security includes multiple sub-areas ranging from protection of computer equipment through privacy to health protection, the maintenance of quality of life and environmental protection.
- Problem solving - solving technical problems arising from working with digital devices, as well as selecting and using adequate digital tools and appropriate technology solutions. Creative use of technologies, innovation of traditional practices and cooperation with others in this area are increasingly important. It is important to improve own digital competencies in relation to the dynamically evolving digital technologies following by industry 4.0.

Digital competences correspond to the lifelong skills and must be considered as key in the field of teacher training (Svoboda 2018). A school worker who masters a digital competency effectively works with information and data by using modern information and communication technologies. It is orientated in current new trends in education and is able to apply it to practice. If we want to talk about digital competences, first of all we need to realize the fact that modern time brings new technologies called as e-technology (Svoboda 2018). At present, electronic communications penetrate the educational space. Some of the most popular ones include: Email, Chat, ICQ, Skype, WhatsApp, Viber, LinkedIn, Facebook, Messenger, MOOC, Cloud, LMS, Webinars, Educasting and Podcasting. Eventually other social networks and internet telephony.

Computers, tablets, smartphones, electronic communications and the Internet are an integral part of everyday life. It is necessary to say that they correspond to digital literacy.

Digital literacy and its development

Today's students use digital technologies quite commonly and perceive them as a natural part of their lives. Likewise, it should be in schools. The usage of digital technologies for learning represents a challenge, as there are often other uses than those to which the students are accustomed in an out-of-school environment. Different studies (e.g. American Library Association 2000) show that many students did not work with electronic textbooks or with educational applications and games. A proportion of students did not use multimedia tools, LMS, electronic learning support. In this case, it is not just a purely Czech problem, but in this situation there are many students in Europe.

Teachers are reluctant to incorporate new technologies into their teaching because they have a lack of confidence in new technological innovations, excessive fears of untested, and consider also financial risks. Also little experience is the reason for not being included in educational programs.

The study (Svoboda 2018) shows that the main obstacles to the exploitation and subsequent expansion of new technologies and learning practices are both financial problems and some mistrust in the new case and lack of information. It is clear that the personality of the teacher, his interest, digital literacy and the

willingness to embrace digital technologies as part of increasing the efficiency and attractiveness of teaching plays a major role.

Among the basic indicators indicating digital literacy can be considered using a personal computer or the Internet. The information society is particularly widespread in the Nordic countries of Europe such as Norway, Denmark or Finland. Below the European Union's average are mainly post-communist states of Europe and countries of southern Europe such as Italy, Greece or Portugal (MPSV 2011).

There is an International Computer and Information Literacy Study (ICILS 2013). It is an international comparative project that focuses on mapping the real skills and abilities of pupils in the field of computer literacy and information literacy. The survey is aimed at pupils of 8 grades (in the Czech Republic it is the 8th year of primary schools and corresponding years of multi-year grammar schools). Altogether 19 European countries were involved in the ICILS survey. In the Czech Republic, an ICILS survey was carried out on a representative sample of 170 schools, involving a total of 3100 pupils and 2150 teachers (ICILS 2013).

Family and family backgrounds have a major impact on the pupil's success at school and in life in integrating digital technologies into education. Some parents underestimate their importance in education, for example due to a lack of insight into the possibilities of digital technologies and their own inadequate competencies in this field (Altamanová 2010). Parents may fear excessive use of digital technologies in teaching and the negative impact of using digital technologies on their children. Therefore, it is necessary to cooperate with parents and explain them why it is necessary to develop digital literacy and student thinking, to show them the educational potential of digital technologies, including possible weaknesses and negative aspects. Today's youth are growing up in an environment where information and digital technologies are ubiquitous, and working with them is seen by young people as a completely natural part of life. It is necessary to link school education and the environment out of school. The school as an institution isolated from an external, digital or online environment will not be eligible for survival in the 21st century (Altamanová 2010).

The availability of information and the expansion of digital technologies creates the situation where the role of a teacher is changing from a provider of knowledge to a consultant, or creator of a suitable learning environment, such as electronic learning support. The individual education and learning of each individual is important. The development of digital literacy is conditioned by the possibility of permanent physical access to digital technologies. Digital literacy needs to be developed as a whole.

The development of digital literacy is based on [1] three ways:

1. Informal learning at individual level (e.g., trial-error method).

2. Learning through informal communities (friends, family, interest club, library, online communities).
3. Formalized education (using manuals, school lessons or official courses).

Informal individual learning is almost always the best way to acquire digital skills, because it is based on natural pace of the individual and reflects his real needs and everyday practice. Real motivation, digital literacy and access to digital technologies are, however, needed for the real effectiveness of individual learning.

Conclusion

The author tried to point out in the paper on the not fully established definition of digital literacy. Digital literacy is at present a prerequisite for effective human performance in the information society, digital age and industry 4.0. Computers, tablets, smartphones, electronic communications and the Internet are an integral part of everyday life. In general, digital literacy cannot be categorized as a specific literacy without which we can circumvent it. Without this literacy, today's society cannot do without and clearly contributes to the development of society.

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Key words: Literacy, Digital media, Authentic text, Idiomatic expression, Communication.

Abstract: Being fully literate, especially in today's globalized world, is extremely important since it directly affects the life of an individual. Literacy is a complex phenomenon. In the past, the proficiency in reading, writing and arithmetic made a solid basis for the young adult entering university. The foundational skills are still building blocks upon which other skills can develop. Over the years, the definition of literacy has stretched to comprise new methods of meaning-making. In both lower and higher education various types of literacy are developed. However, preliminary research into the performance in reading literacy revealed unsatisfactory results achieved by the Slovak students in 2015. The following research into the performance in reading literacy compared the results of the PISA assessments carried out in 2003, 2006, 2009, 2012, and 2015 (Hrdličková 2017). A tested hypothesis "The Slovak Republic follows a significant negative trend with performance in reading." was confirmed and the research proved that the performance of the Slovak students deteriorates every three years. The paper is part of the Project KEGA "Idioms in Business Communication" launched at the Faculty of Applied Languages of the University of Economics in Bratislava that aims to promote reading literacy and improve communication. So far, six lecturers and more than 250 students have participated in it. This paper focuses on developing reading literacy, media literacy and information literacy. Written discourse is read and analysed for idiomatic expressions causing difficulty in understanding business texts. The rationale for carrying out quantitative research is to build up a corpus of idiomatic expressions and the rationale for conducting qualitative research is to identify phrase patterns. In the research the following methods are applied: General English Idioms Test, Business English Idioms Test and *Statistical Hypotheses Testing – T-test*. Research hypotheses H1, H0; H2, H0; H3, H0; H4, H0 are also tested.

Introduction

Literacy is no longer considered an ability acquired only in childhood during the early years of schooling but it is viewed as an expanding set of knowledge, skills and strategies that are built on by an individual throughout his/her life in various situations via interaction with people and larger communities in which he/she participates. Literacy is about more than just words and meanings. Reading, writing and arithmetic were the core school subjects yet in the Middle Ages. According to Pietila (2017), literacy is complex and nowadays the ten top literacies in education are: digital literacy, media literacy, visual literacy, data literacy, game literacy, health and financial literacy, civic and ethical literacy, news literacy, coding and computational literacy, and foundational literacy. Naturally, other types of literacy, such as cultural literacy, multicultural literacy, information literacy, biliteracy, global literacy, and others need to be developed. However, reading literacy has an important role in the life of every individual and, moreover, the overall level of reading literacy has a big impact on society.

The findings of the preliminary research into reading passages and vocabulary items (Hrdličková 2012) presented in the two series of secondary school English course books, unsatisfactory results achieved by the Slovak readers in the PISA 2009 assessment, and a negative trend with performance in reading (Hrdličková 2017) provided the main impetus for investigating the linguistic features of General English reading texts and Business English texts in detail.

The paper is part of the Project KEGA entitled "Idioms in Business Communication". As mentioned above, 250 first-year university students of the Faculty of International Relations, the Faculty of National

Economy, the Faculty of Commerce, and the Faculty of Economic Informatics of the University of Economics in Bratislava have participated in the project. *Market Leader* (Cotton, Falvey and Kent 2011), a compulsory Business English course book (B2 – C1 language levels), presents reading texts from a journalistic style that are full of idiomatic expressions. Not only phrases with a strong collocation affinity but also with a low collocation affinity make the texts more difficult (Bilá 2016). As one knows, idioms make up a substantial part of spoken language, but nowadays they often appear in written language. Proper understanding of ‘ideational idioms’ – packages of information – in business communication is difficult for non-native speakers as their meanings cannot be derived from the meanings of its individual components (Fernando 1996).

The paper focuses on developing reading literacy by reading authentic texts from prestigious British and American business newspapers and magazines. Apart from the compulsory course book, the self-help book *Ideational Idioms in Business English Communication* (Hrdličková 2016) is used as it serves for promoting reading literacy, mastering business terms and idioms, and developing fluent business communication.

Doing written assignments, i.e. writing short summaries of the reading texts and submitting them to ‘Moodle’ – an open-source learning platform, together with written communication and feedback given by the lecturer is facilitated by using digital devices, such as laptops, tablets and smartphones in seminars or within the self-study. Pietila (2017) states that part of a well-rounded education includes being able to use these devices to achieve a variety of goals. In her view, a ‘media literate’ person can adapt to new communication formats (e.g. immediate messaging, notifications, online communities, blogs) and knows how to choose the most effective medium for communication in any situation.

‘Information literate’ individuals automatically develop some technology skills. Information literacy competence extends learning beyond the formal classroom setting and provides practice with self-directed investigations. As information literacy augments students’ competence with evaluating, managing, and using information, it is now considered as a key outcome for university students.

As stated above, these methods will be applied in the research: General English Idioms Test – to find out if the students have some knowledge of idiomatic expressions from secondary school, Business English Idioms Test – to test the students if and how they acquired new idioms, and Statistical Hypotheses Testing – T-test (parametric test) to test the significance of the difference between the sample means. The proposed hypotheses H₁, H₀; H₂, H₀; H₃, H₀; H₄, H₀ are expected to be confirmed or rejected.

Thorough background reading has been necessary in order to arrive at a complete understanding of the topic. The gathered information has been assessed and primary and secondary sources have been selected. The primary sources are the publications of the scholars from the field of English phraseology, namely

McCarthy and O'Dell (2005, 2008), Cowie (1993), Fernando (1996), Kvetko (2006), then by Alderson (2005), *PISA 2015 Assessment and Analytical Framework* (OECD 2016), and *Literacy for life* (2005). The publications that provide material for the research are General English and Business English course books. The secondary sources include papers in different online journals.

The term ‘literacy’

For most of its history in English, the word ‘literate’ meant to be ‘familiar with literature’ or ‘well educated, learned’. Since the late nineteenth century has it also come to refer to the abilities to read and write text, while maintaining its broader meaning of being ‘knowledgeable, educated in particular fields’.

Since the mid-twentieth century, scholars have devoted considerable attention to defining literacy, and their work has had direct implications for approaches to practice and policy (Fransman 2005). Academics from disciplines such as psychology, economics, linguistics, sociology, anthropology, philosophy and history have engaged in an ongoing debate over the meaning and definition of ‘literacy’ and how it is related to the broader notions of education and knowledge. Taking into consideration these evolving debates, including the major traditions, critiques and approaches to literacy, there are four discrete understandings of literacy: a) literacy as an autonomous set of skills, b) literacy as applied, practised and situated, c) literacy as a learning process, and d) literacy as text.

Literacy as skills – reading, writing, and oral skills

The most common understanding of literacy is that it is a set of tangible skills, mainly the cognitive skills of reading and writing, that are independent of the context in which they are acquired and the background of the person who acquires them. Scholars continue to disagree on the best way to acquire literacy. Some of them advocate the ‘phonetic’ approach and others ‘reading for meaning’, resulting in what has sometimes been called the ‘reading wars’ (Adams 1993; Goodman 1996; Street 2004). The emphasis on meaning has recently given way to a ‘scientific’ attention to phonetics, word recognition, spelling and vocabulary. This approach has turned to research in the cognitive sciences on important features of human memory (e.g. how the brain processes reading patterns) and to techniques like phonological awareness training and giving more and more faster reading tasks (Abadzi 2003b, 2004).

A tendency to favour the ‘scientific’ principles of phonetics has given rise to claims that writing is the transcription of speech and in consequence ‘superior’ to it. Likewise, some claim the alphabetic system is technologically superior to other script forms, since it is phonetic, rather than reliant on pictures to denote meaning (Olson 1994). Street (2004) notes that many such views are founded on deeper assumptions about the cognitive consequences of learning to read and write. The cognitive argument has been linked to broader societal development, so that literacy becomes a condition for economic growth, ‘progress’ and the transition from ‘oral’ to ‘literate’ cultures (Goody 1977; Ong 1982; Olson 1977, 1994).

The transition from oral to literate modes has a rudimentary impact on human consciousness. It does not only allow for the representation of words by signs, but it also gives a linear shape to thought, providing a critical framework within which to think analytically. While rational consciousness is taken to be a given good, it derives from a classical epistemology, which may be less appropriate for societies founded on different patterns of thought and interaction. Consequently, an understanding of literacy that maintains some focus on oral skills is desirable.

In the 1970s, some social psychologists argued that many of the assumptions about literacy in general were linked to school-based writing, resulting in serious limitations in accounts of literacy – especially in the claim that it improves faculties of reasoning (Scribner and Cole 1978; Olson 1977).

Literacy as skills – skills enabling access to knowledge and information

The word ‘literacy’ has begun to be used in a much broader, metaphorical sense, to refer to other skills and competencies, for example information literacy, visual literacy, media literacy and scientific literacy. The OECD through its publications such as *Literacy in the Information Age* (2000) and *Literacy Skills for the Knowledge Society: Further Results from the International Adult Literacy Survey* (1997) have given impetus to the use of such terms. The meaning of these concepts tends to be diverse and shifting, ranging from the view of literacy as a set of largely technical skills (the OECD perspective) to the idea that these skills should be applied in critical ways to examine one’s surroundings (e.g. the workplace and the media) and push for social change (Hull 2003). For example, information literacy broadly refers to the ability to access and use a variety of information sources to solve an information need. Yet, it can also be defined as the development of a complex set of critical skills that allow people to express, explore, question, communicate and understand the flow of ideas among individuals and groups in quickly changing technological environments.

Some scholars have suggested that a more useful concept would be that of multiple literacies – i.e., ways of ‘reading the world’ in specific contexts: technological, health, information, media, visual, scientific, and the like (Street 2003, Lankshear and Knobel 2003; Cope and Kalantzis 2000).

Yet the notion of multiple literacies is not without controversy. By attracting a long list of modifiers, ‘literacy’ has become a debased term, its core reference to reading skills undermined (Jones 1997; Hull 2003). Some respond to this critique by emphasizing that reading, in the broadest sense of the word, remains integral to the notion of literacy. Thus, reading may mean not only the decoding and understanding of words, but also the interpreting of signs, symbols, pictures and sounds, which vary by social context (Cope and Kalantzis 2000). In short, different everyday contexts present different literacy demands, perceptions of literacy, and types of power relations and hierarchies of knowledge (Barton et al. 1999; Street 2003).

Literacy as a learning process

As individuals learn, they become literate. This idea is at the core of the approach which views literacy as an active and broad-based learning process. Building on the scholarship of Dewey and Piaget, constructivist educators focus on ways in which individual learners, especially children, make sense of their learning experiences. In the field of adult education, some scholars see personal experience as a central resource for learning. Experience is one of Knowles's (1980) five principles of andragogy, or adult learning theory, in which he argues for a learner-centred educational process, with critical reflection as central. Kolb (1984) developed an experiential learning cycle, with 'concrete experience' as the starting point for learning, based on critical reflection.

More recently, social psychologists and anthropologists have used terms like 'collaborative learning', 'distributed learning' and 'communities of practice' to shift the focus away from the individual mind and towards more social practices building on newer understandings of literacy (Rogoff and Lave 1984; Lave 1988; Rogoff 2003; Lave and Wenger 1991). For example, Rogers (2003) distinguishes between 'task-conscious' learning, typically evaluated by test-based task completion, and 'learning-conscious' learning, which is assessed from the perspective of the learner. The more traditional learning methods of children ('task-conscious' test learning) are often used for adults, as is evident in many adult literacy programmes.

Paulo Freire is perhaps the most famous adult literacy educator whose work integrated notions of active learning within socio-cultural settings. Freire emphasized the importance of bringing the learner's socio-cultural realities into the learning process itself and then using the learning process to challenge these social processes. Central to his pedagogy is the notion of 'critical literacy', a goal to be attained in part through engaging with books and other written texts, but, more profoundly, through reading (i.e. interpreting, reflecting on, interrogating, theorizing, investigating, exploring, probing and questioning) and writing (acting on and dialogically transforming) the social world.

The Programme for International Students Assessment

In response to the question "What is important for citizens to know and be able to do?" The Organisation for Economic Co-operation and Development (OECD) launched the triennial survey of 15-year-old students across the world known as the Programme for International Students Assessment (PISA). It assesses the extent to which students, near the end of their compulsory education, have acquired key knowledge and skills that are essential for full participation in modern societies. The assessment focuses on the core school subjects of science, reading and mathematics, but students' proficiency in an innovative domain was also assessed (in 2015, collaborative problem solving). The assessment does not just ascertain whether students can reproduce knowledge; it also examines how well students can extrapolate from what they have learned and can apply that knowledge in unfamiliar settings, both inside and outside the school.

This approach reflects the fact that modern economies reward individuals not for what they know, but for what they can do with what they know.

PISA is now used as an assessment tool in many countries around the world. It was implemented in 43 countries and economies in the first assessment (32 in 2000 and 11 in 2002), 41 in the second assessment (2003), 57 in the third assessment (2006), 75 in the fourth assessment (65 in 2009 and 10 in 2010), and 65 in the fifth assessment. So far, 72 countries and economies have participated in PISA 2015.

In each round of PISA, one of the core domains is tested in detail, taking up nearly half of the total testing time. The major domain in 2015 was science, as it was in 2006. The major domain assessed in 2009 was reading, as it was in 2000, the first PISA assessment, and the major domain in 2012 was mathematics, as it was in 2003. With this alternative schedule of major domains, a thorough analysis of achievement in each of the three core areas is presented every nine years; an analysis of trends is offered every three years.

The PISA assessment of reading focuses on students' ability to use written text information in real life situations. The *PISA 2015 Assessment and Analytical Framework* (OECD 2016, 146) defines reading literacy as "students' ability to understand, use, reflect on and engage with written texts in order to achieve one's goals, develop one's knowledge and potential, and participate in society". The definition goes beyond the traditional notion of decoding information and literally interpreting what is written. PISA's conception of reading literacy includes the range of situations in which people read, the different ways written texts are presented (e.g. in printed books, in fact sheets, online fora and news feeds), and the variety of ways in which readers approach and use texts, from functional and finite, such as finding a particular piece of practical information, to the deep and far-reaching, such as understanding other ways of doing, thinking and being. (OECD 2016).

In order to find out what the Slovak students can do with their knowledge research into the reading performance of the Slovak students in the five PISA assessments carried out in 2003, 2006, 2009, 2012, 2015 was done. The research compared the results of the Slovak students in the PISA assessments and tested the hypothesis "The Slovak Republic follows a significant negative trend with performance in reading". The hypothesis was confirmed and, what is more, the performance deteriorates every three years. On the basis of these unsatisfactory research findings, reading literacy in a foreign language has to be promoted also in higher education.

The difficulties in processing reading texts

Reading is not an isolated activity that takes place in some vacuum, but it is usually undertaken for some purpose, in a social context, and that social context itself contributes to a reader's notion of what it means to read, or, as some scholars tend to put it, to be literate (Alderson 2000). Reading is one of the most

important skills as it serves as an important source of comprehensible input as well as it contributes to the development of overall proficiency and competence of an individual in a language.

Numerous research studies have been concerned with the difficulties in processing reading texts by L1 and L2 readers. Schlesinger (1968) examines the hypothesis that syntactic complexity may be responsible for processing difficulties experienced by L1 readers. Berman (1984) discusses a number of linguistic variables that contribute to the text being harder to process for L2 readers. According to Freebody and Anderson (1983), lexical complexity has consistently been shown to have an effect on comprehension for both L1 and L2 readers. It has also been shown that topic (un)familiarity cannot be compensated for by easy vocabulary: both difficult vocabulary and low familiarity diminish comprehension, but texts about unknown topics with complex vocabulary do not become easier if more familiar words are used, and vice versa. Lexical complexity, especially high occurrence of idiomatic expressions, the meanings of which are difficult to understand, is responsible for difficulties that L2 readers experience in comprehending such passages (Williams and Dallas 1984). In addition, homonyms are especially hard to process as readers seem to fix on one meaning. In Cooper's study (1984), however, experienced readers manifested much greater ability to use linguistic cues within larger context to disambiguate homonyms (Alderson 2000).

Research also shows that conventionalized multiword expressions and the lexis itself have been relatively neglected in language studies. This neglect can be ascribed to the vocabulary being viewed as the non-generative component. It *is mainly evident in respect of the functions of idioms and kindred expressions* (Fernando 1996; Kvetko 2006). *Idiomatic expressions* have the potential of appearing anywhere and everywhere, and are marked as occurring in mature written or spoken discourse. The abundance of such expressions in Business English makes the recognition of an 'idiom principle', strongly realized in idioms, weakly in collocations, very useful as an explanation of the way an important part of vocabulary works (Fernando 1996).

Grammar and new vocabulary in business texts

Business texts are one of the major sources through which the language student meets grammar and new vocabulary. The text has the great advantage of contextualising new language items for the student, and an interesting text also serves to make that language more memorable. One way of getting students to discover new grammar is to ask them to concentrate on its use in a text. Students can look at the way language is used – or what kind of language is used in a certain context. Encouraging students to discover grammar for themselves is one valuable way of helping them to get grips with the language. Very often this discovering of grammatical facts involves them in a fairly analytical study of the language, especially at the intermediate level. The discovery techniques can be highly motivating and extremely beneficial for students' understanding of English grammar. Obviously reading a text takes time, but it should be

remembered that the student will get reading practice as well as focusing on the grammar and vocabulary. Getting students to solve grammatical problems probably seems like a very long process. But if the amount of time spent on presentation at the intermediate level is taken into account, the use of problem-solving activity does not seem exaggerated (Harmer 1987).

New vocabulary presented in business texts includes single words and more or less fixed multi-word expressions. Some of them have literal meaning in some contexts but a completely different meaning in another. In contrast to free combinations, which are reproduced in communication, opaque expressions are ready-made and conventional, institutionalized unis.

Nevertheless, business texts are not always the ideal vehicle for vocabulary development in the classroom. One practical problem is length; interesting texts are often too long for intensive study and can lead to considerable overloading. The new lexis in a text can also be a very random selection, frequently defying any clear systematic organisation on the teacher's part, and containing many new items of marginal value to the students. Gairns and Redman (1986) state that the most barren feature of vocabulary exploitation in texts from published materials is the absence of exercises that activate useful lexis from the text. In addition, productive practice activities even for useful high frequency items are rare.

Many students would like to improve their Business English by reading newspapers and magazines regularly, but they find that they have more pressing reading demands placed on them from study and part-time employment. They read in English, but not for pleasure. Taylor (2006) suggests five tips on how to read in a more effective and business-like way in English: a) trying rapid reading, b) a ten-minute warm-up exercise, c) **using a newspaper as a learning tool**, d) reading from a computer screen, and f) practice makes perfect – reading regularly, intensively, extensively and critically.

Within the Project KEGA, the lecturers started with rapid reading. The students had to read short texts presenting basic business terms. In the next semester they continued with reading articles in newspapers such as *The New York Times*, *Telegraph*, *Foreign Affairs*, *The Diplomat Magazine*, *Business News Daily*, *Business Weekly*, *Forbes*, *The Economic Times*, *Fortune*, *Politico*, *Newsweek*, *Adweek*, *Marketing Week*, *Business Insider* and the like in order to promote their reading literacy.

E-learning as a method of communicative learning

Kováčová and Záhonová (2009) describe e-learning as learning where the Internet plays an important role in the delivery, support, administration and assessment of learning. This type of learning can take a number of forms, including the use of the Internet for research purposes or to find usable data.

According to Mohammadi et al. (2011), e-learning is commonly referred to as the intentional use of networked information and communication technology in teaching and learning. E-learning has many advantages. There are at least ten reasons why e-learning is preferable: a) it is a learner-centred teaching

process and the role of the teacher is to guide or facilitate this process, b) it is convenient for students to access at any time and in any place, c) it is a kind of cooperative learning, d) it is fast and dynamic and reduces the amount of expenses, e) it fosters self-paced learning, f) it fosters interaction among students and a lecturer, g) it is comprehensive learning, i.e. it contains all instructional sources and tools such as virtual classes and simulations, h) all activities such as enrolment, supervision, tuition are done by the Internet, i) students learn more than the particular subject, j) it increases the motivation of learners which is necessary especially for foreign language learning because it affects all important parts of foreign language learning, i.e. input, bridging new materials to previous learned ones and output.

E-learning and regular progress e-tests at the MTF

Between 2009 and 2011, the Faculty of Materials, Science and Technology (MTF) in Trnava of the Slovak University of Technology in Bratislava followed the requirements for diversification of all forms of study and graduates profiles. The institutes and departments of the Faculty offered several bachelor's degree programmes, master's degree programmes as well as doctoral degree programmes. Students of the bachelor's degree programmes had to study English as the only foreign language for four semesters and doctoral students for one semester. Some of them were fluent in English, some had a solid knowledge of English, but some were false or true beginners and it was very difficult for them to master a new foreign language within a short period of time. In addition, some of the students, preparing for their careers, showed low reading literacy. It was often painful to watch their struggle to read a passage aloud from a course book (Technical English A1, A2), but it was even more painful to listen to them to pronounce the words on the page without capturing the meaning of the segment they had just read. Grammar was no exception; to make correct sentences was a fight, as well. On the other hand, all lecture theatres, language laboratories and seminar rooms at the MTF were equipped with technologies. Thus, lecturers had many opportunities to integrate ICT (Information and Communication Technology) into the teaching and learning process to make the process of learning a new foreign language easier and more effective.

E-learning at the MTF was regarded as a significant element of teaching and learning. The Faculty was committed to empowering the students as learners in an e-learning environment, helping them to learn effectively with technology and develop their e-skills enabling them to work and participate in a technology-rich society. Opportunities for the use of ICT and e-learning were increasingly embedded within subject schemes of work and whole-university policies. The E-learning projects application in the AIS was used for producing materials for e-learning courses. Several E-learning projects created by us provide the students with supporting materials and e-tests. When preparing e-tests it was necessary to know as specifically as possible what it was we wanted to test. We carefully listed everything we thought the students should know or be able to do. Language was tested by means of e-tests; especially grammar to

find out what the students had learnt. It was very easy to test elementary and pre-intermediate grammar as there were definite answers and marking was easy.

On the basis of a created database of questions, e-tests were generated automatically for every student. When creating the database of questions we determined what possibility was right in each question, so after completing the e-test the student immediately saw the outcome. Figure 1 shows how technical students were included in the E-project to improve their grammar competence.

PICTURE 1. TECHNICAL ENGLISH E-TEST

The screenshot shows a web-based application titled "E-project: Technical English 1 - Module B". The interface includes a navigation bar with links like "Basic information", "Workers", "Time schedule", "Documentation", "Tasks", "Tree of folders", "Folders contents", and "Add folder". Below this is a section titled "Statistics of questions in folders E-test TE 1 Units 10-12". A table displays 14 numbered questions, each with a type indicator (e.g., m>1), the number of completed tests containing the question (0), the average question score (in %) (0), and a "Details" button. The questions are as follows:

No.	Question	Type	Number of completed tests containing a question	Average question score (in %)	Options details
1	dives has Jason made? (at least 183)	m>1	0	-	[Details]
2	_____ does it move? (about 30 m/hour)	m>1	0	-	[Details]
3	_____ does the rover weigh? (800 kg)	m>1	0	-	[Details]
4	_____ is the rover? (about 2.2 metres)	m>1	0	-	[Details]
5	_____ it collect living things? (a small pump sucks them in)	m>1	0	-	[Details]
6	_____ lift heavy weights by hand!	m>1	0	-	[Details]
7	_____ mobile phones.	m>1	0	-	[Details]
8	_____ read the manual before you service the machine.	m>1	0	-	[Details]
9	_____ run in the workshop.	m>1	0	-	[Details]
10	_____ the robot arm do? (lifts pieces of rock)	m>1	0	-	[Details]
11	_____ the special tools? (at the end of each robot arm)	m>1	0	-	[Details]
12	_____ this rover called? (MSL)	m>1	0	-	[Details]
13	_____ you seen the accident?	m>1	0	-	[Details]
14	A spring causes the piston _____ .	m>1	0	-	[Details]

Source: Own

E-learning at the Faculty of Applied Languages (FAJ)

The first-year students of the University of Economics in Bratislava have to study English as a first foreign language for two or three semesters, depending on the type of the faculty. They come to university with different levels of knowledge of English (B1, B2). However, they are mixed together, use the same course book, and have to take the same standardized tests to finish all Business English courses. Especially those students with a poor command of English have serious problems to pass written examinations. On the basis of the experience with E-learning tests at the MTF, grammatical competence of the economics students will also be fostered in the future by means of Moodle.

English lecturers participating in the Project KEGA started with written assignments and improving communication by widening formal and informal vocabulary. They realize that e-learning has the potential to enhance the learning and teaching and transform the learning experience. E-learning at the FAJ,

facilitated and supported through the use of ICT, occurs as blended learning, where e-learning is integrated with traditional media and methods depending on the course content, language and students. It supports learning where the student is engaged in interactive learning activities. By supporting active and interactive learning, the students become active learners and learning becomes more student-centred. In addition, e-learning enables online communication between students and staff and facilitates discussion forums.

PICTURE 2. BUSINESS COMMUNICATION E-COURSE (WRITTEN ASSIGNMENTS)

Source: Own

PICTURE 3. BUSINESS COMMUNICATION E-COURSE (VOCABULARY)

First name / Surname	Email address	Grade	Comment	Last modified (Submission)	Last modified (Grade)	Status	Final grade
Filip Adamec	student@euba.sk	9 / 30	FX	Draft: Monday, 11 December 2017, 2:19 PM	Monday, 11 December 2017, 2:19 PM	Update	9.00
Denisa Achbergerová	student@euba.sk	29 / 30	A	Draft: Monday, 11 December 2017, 2:06 PM	Monday, 11 December 2017, 2:06 PM	Update	29.00
Diana Andrásyová	student@euba.sk	-	-			Grade	-
Marcel Angelovič	student@euba.sk	24 / 30	B	Draft: Monday, 11 December 2017, 2:05 PM	Monday, 11 December 2017, 2:05 PM	Update	24.00
Klaudia Antalcová	kantalcova@gmail.com	20 / 30	D	Draft: Monday, 11 December 2017, 2:16 PM	Monday, 11 December 2017, 2:16 PM	Update	20.00
Matúš Babuľík	student@euba.sk	23 / 30	C	Draft: Monday, 11 December 2017, 2:15 PM	Monday, 11 December 2017, 2:15 PM	Update	23.00
Nikola Bahnová	student@euba.sk	22 / 30	C	Draft: Monday, 11 December 2017, 2:02 PM	Monday, 11 December 2017, 2:02 PM	Update	22.00
Dorota Bakajsová	student@euba.sk	29 / 30	A	Draft: Monday, 11 December 2017, 1:42 PM	Monday, 11 December 2017, 1:42 PM	Update	29.00
Gabriela Balážovjechová	student@euba.sk	18 / 30	D	Draft: Monday, 11 December 2017, 2:13 PM	Monday, 11 December 2017, 2:13 PM	Update	18.00
Adam Balek	student@euba.sk	27 / 30	A	Draft: Monday, 11 December 2017, 2:15 PM	Monday, 11 December 2017, 2:15 PM	Update	27.00

SOURCE: OWN

Research – material, methods and hypotheses

For the research, Fernando's (1996) classification of idioms has been chosen. According to her, ideational idioms are realized by **nominals**, **verbals**, **adjectivals**, and **adverbials** that **function as parts of clauses or by clauses themselves**.

The present corpus consists of 120 idioms; sixty idioms from General English course books and sixty from Business English course books. General English idioms were chosen from the reading texts of two course books series, namely *New Opportunities Upper Intermediate* (NOUI, Harris, Mower and Sikorzyńska 2006) and *Success Upper Intermediate* (SUI, Comyns Carr and Parsons 2007). The genre of course book was chosen as the source of data of the present qualitative research since it contributes to the development of reading literacy, and, indeed, it is the genre the English students meet compulsorily at schools. The introductory or additional text is the most important and dominant part of the textbook from which other components are developed and formed. Students have to analyse the text in detail not only to understand what they read, but also to notice the language used. Typical features of texts are most visible in comparison. For this reason, reading texts of the two course book series. The students' books were chosen with the assumption they would vary in form, content and style. What is more, they are recommended for use in secondary schools by the Ministry of Education, Science, Research and Sport of the Slovak Republic.

The reason for choosing these course books was the fact that both these series are recommended for use in secondary schools by the Ministry of Education, Science, Research and Sport of the Slovak Republic.

While the main aim of a quantitative analysis is to show the frequency of different units included in the corpus, the main aim of a qualitative analysis is to identify phrase patterns and clauses themselves (Fernando 1996; Cowie 1993). The next aim of the research is to test students' knowledge of General English idioms and Business English idioms and to measure the students' progress.

In the research these methods will be applied: General English Idioms Test, Business English Idioms Test, Statistical Hypotheses Testing – T test (parametric test) – to test the significance of the difference between the sample means. Research hypotheses H₁, H₀; H₂, H₀; H₃, H₀; H₄, H₀ will also be tested.

Five lecturers participated in the first phase of the project KEGA. At the beginning of the first semester, each of them tested two groups of students who were asked to translate sixty General English idioms from English into Slovak or provide their synonyms. On the basis of the results achieved, each teacher chose one group as an experimental and the other as a control group. Both groups studied the first four units from Market Leader, discussing these topics: Communication, International marketing, Building relationships, and Success. The experimental groups also followed a self-help book Ideational Idioms in Business English Communication (Hrdličková 2016).

TABLE 1. IDEATIONAL IDIOMS	
GENERAL ENGLISH IDIOMS TEST (GEIT)	Total: 60
NOMINALS	Total: 17
bad egg, brainbox, dark horse, eager beaver, fish out of water, know-all, the last straw, life and soul of the party, pen-pushers, top dog, walk of life, a breath of fresh air, the four corners of the world, a melting pot, a slippery slope, a stepping stone, a vicious circle	
ADJECTIVALS	Total: 3
from scratch, from the word go, not on one's life	
VERBALS	Total: 38
be/get in one's bad books, be dead to the world, be knee-deep in sth, be larger than life, be off the beaten track, be (all) plain sailing, be right up one's street, can't make head or tail of sth, eat humble pie, fall into place, get a move on, give the green light to, give one a hard time, give it to one straight, go downhill, go to any length(s), have a bee in one's bonnet, have a head start, have itchy feet, one's heart sinks, let the cat out of the bag, live it up, look down one's nose at, make ends meet, make a song and dance about sth/doing sth, not bat an eyelid, pick one's brains, pull one's leg, put out to grass, see eye to eye, see the funny side (of sth), see the light, see red, set the ball rolling, show one the ropes, start off on the wrong foot, take a/its/their toll (+ on), take one's mind of sth	
CLAUSES	Total: 2
it's love that makes the world go round, there's no smoke without fire	
BUSINESS ENGLISH IDIOMS TEST (BEIT)	Total: 60
NOMINALS	Total: 11
a ballpark figure, the big picture, the bottom line, a level playing field, the nouveau riche, a quid pro quo, the rank and file, a rip-off, a turning point, small talk, the status quo	
ADJECTIVALS	Total: 9
state-of-the-art, crystal clear, day-to-day, face-to-face, fly-by-night, half-hearted, long-term, short-term, tit-for-tat	
ADVERBIALS	Total: 7
at cross purposes, face to face, for the sake of sth, from time to time, in excess of sth, straight from the horse's mouth, whether one likes it or not	
VERBALS	Total: 28
be half the battle (won), be like talking to a brick wall, be on the same wavelength, be on the warpath, beat about the bush, can't make head or tail of sth, come to mind, fight a losing battle, get the picture, get straight to the point, get the wrong end of the stick, go head to head (+ with), go overboard, have an open mind (+ about), hear sth on the grapevine (+ that), keep an eye on one, keep in touch (+ with), keep one in the loop, keep one up to date, lose sight of sth, make one's fortune, make a quick buck, paint a rosy picture of sth, play one's cards right, put it in a nutshell, put one in the picture, run the risk (of sth), take sth with a grain of salt	
CLAUSES	Total: 5
the customer is always right, look before you leap, money is (no) object, practice makes perfect; when in Rome, do as the Romans do	
Source: Own	

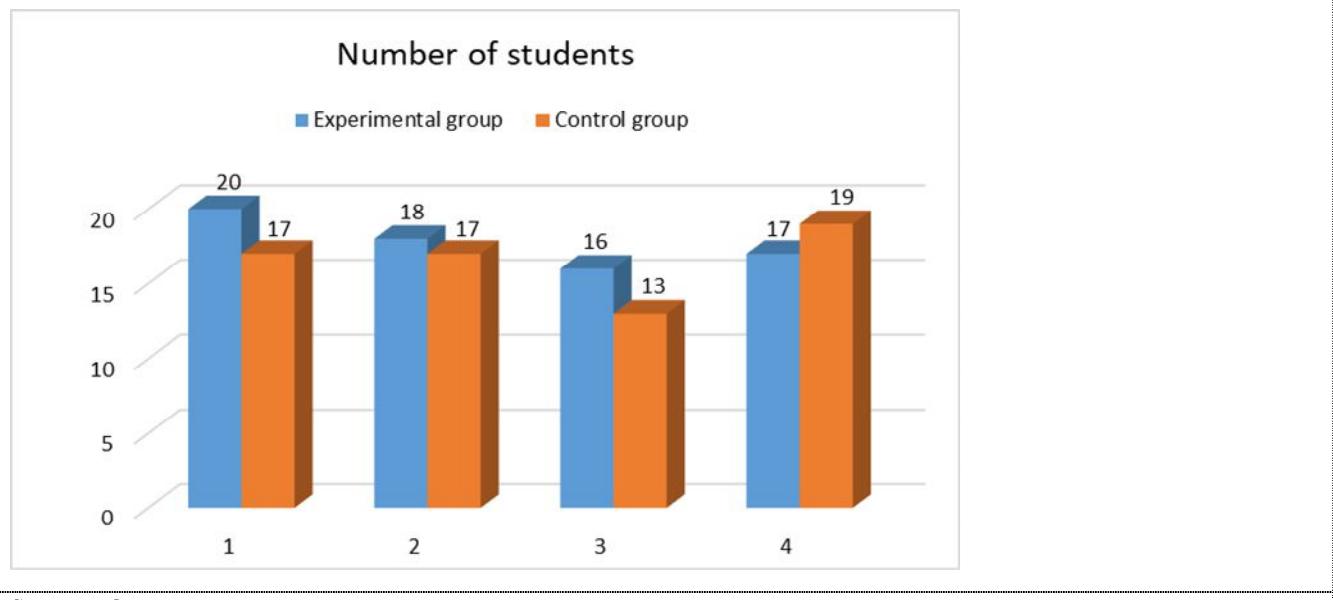
Results and discussion

Table 2 presents the numbers of students who participated in the research, or the investigated sample of participants. The methodology section mentions that five lecturers in English participated in the project in the first stage of the project. However, it was not possible to include the students' results of the last lecturer as the students did not have the same conditions as others while being tested.

TABLE 2. NUMBER OF STUDENTS.		
Number of students	Experimental group	Control group
Lecturer 1	20	17
Lecturer 2	17	17
Lecturer 3	18	13
Lecturer 4	16	19
Total:	71	66
Source: Own		

Chart 1 shows the graphic representation of the numbers of students of all experimental and control groups participating in the research.

CHART 1. GRAPHIC REPRESENTATION OF THE NUMBER OF PARTICIPANTS.



SOURCE: OWN

Table 3 shows the summarized results of GEIT and BEIT of the students of the control and experimental groups.

The achieved results are in the percentages as it was possible to gain maximum 60 points for the GEIT and maximum 30 points for the BEIT.

TABLE 3. STATISTICAL CHARACTERISTICS CALCULATED FROM THE ACHIEVED RESULTS.

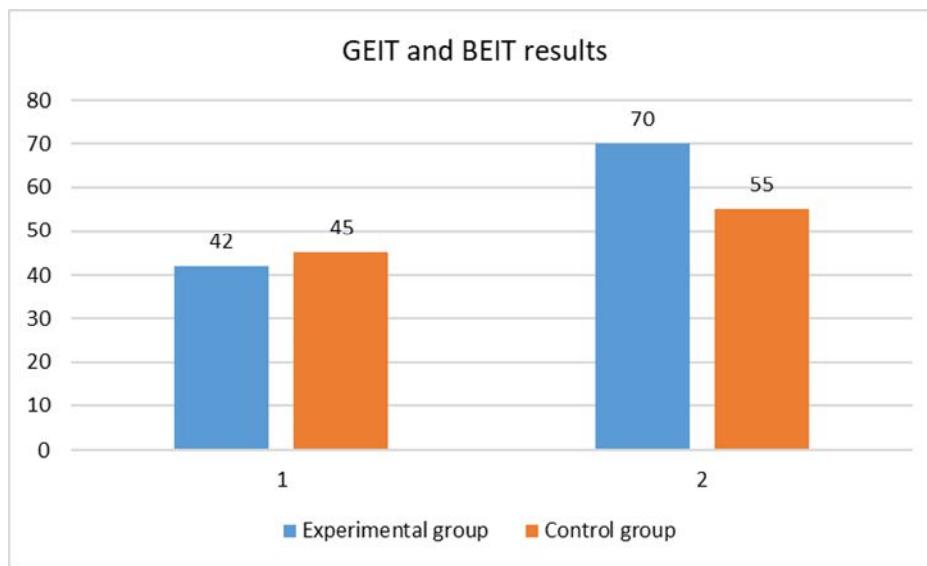
Statistical characteristics	Experimental group		Control group	
	GEIT [%]	BEIT [%]	GEIT [%]	BEIT [%]
Number of students	71	71	66	66
Sum	2997	4954	2961	3654
Average	42	70	45	55
Minimum	2	17	2	13
Maximum	78		82	93
Median	45	73	43	57
Standard deviation	20.47	19.23	17.05	20.58

Source: Own

Chart 2 shows the graphic representation of the GEIT and BEIT results of the experimental and control groups. From the chart it is obvious that the initial level of the knowledge of the students of the experimental and control groups was nearly the same.

In order to analyse the achieved results or to compare the level of students' knowledge the statistical method Statistical Hypotheses Testing was used. A parametric test aimed at testing the significance of the difference between the sample means, the so-called T-test, was used.

CHART 2. GRAPHIC REPRESENTATION OF THE RESULTS.



Source: Own

The “Independent Two-sample T-test” was used to compare the BEIT results of the experimental group (Ex.) and the control group (Co.).

H1 hypothesis: There is a notable difference between the BEIT results of the Ex. and the Co. (there is a notable difference between the knowledge of BEI of the Ex. and the Co.).

H0 Null hypothesis: The difference between the BEIT results of the Ex. and he Co. is random.

The finding: At the significance level of 5% ($\alpha = 0.05$), the null hypothesis is rejected, because the probability $p = 0.00004$ (i.e. $p < \alpha$), it means that the difference can be considered as notable.

When comparing the GEIT results of the Ex. and the Co., the difference was random, as can be seen from the graphic representation.

The “Paired Two-sample T-test” was used to compare the GEIT and BEIT results of the Ex., or the Co.

The experimental group

H2 hypothesis: There is a notable difference between the knowledge of GEI and the knowledge of BEI the Ex.

H0 hypothesis: The difference is random.

The finding: At the significance level of 5 % ($\alpha = 0.05$), the null hypothesis is rejected because the probability $p = 0$, ($p = 0.5 \times 10^{-20}$), the difference is notable.

The control group

H3 hypothesis: There is a notable difference between the knowledge of GEI and the knowledge of BEI of the Co.

H0 hypothesis: The difference is random.

The finding: At the significance level of 5% ($\alpha = 0.05$), the null hypothesis is rejected because the probability $p = 0$ ($p = 0.4 \times 10^{-8}$) and the difference can also be considered as notable.

There is an interesting striking difference here between the p-value = 0 in the Ex. and the p-value = 0.015 in the Co. It can be explained that the improvement (an increase of the level of knowledge) in the Ex. is much bigger than in the Co.

It can also be documented by the following T-test where the differences between the knowledge of GEI and the knowledge of BEI knowledge of the Ex. and the Co. are tested.

H4 hypothesis: The increase of the level of knowledge of the Ex. Is notably bigger than the increase of the level of knowledge of the Co.

H0 hypothesis: There is not a notable difference between the increase of the level of knowledge of the Ex. and the Co.

The finding: At the significance level of 5% ($\alpha = 0.05$), the null hypothesis is rejected because the probability $p = 0.3 \times 10^{-8}$ (i.e. $p < \alpha$), and it means that the difference can be considered as notable.

Conclusion

Based on the professional experience it can be stated that all students, irrespective of their field of study, exhibit difficulties with reading English texts. It is possible to claim that their problems are caused by a considerable amount of new and difficult vocabulary items, opaque idiomatic expressions and unfamiliar or even boring topics. If the number of unfamiliar words or collocations in a text is small and their context is not crucial to the basic meaning of the main message, students' reading comprehension is not hindered. However, if there are many idioms or unfamiliar words that are key words comprehension of the text begins to break down. Consequently, students have problems with spoken communication.

As stated in the paper, the main aim of the Project KEGA is to help Slovak students improve their language skills. There are many different ways and methods of achieving it; one of them is applying ICT to university education. Even though Mohammadi et al. (2011) discusses the disadvantages of e-learning, we have to stress the main advantages of this type of learning such as flexibility, convenience, considerable independence, and the ability to work at one's own pace. When used with care, ICT resources of all kinds can aid the development of students' speaking and listening and personal skills. It depends on the creativity of a lecturer and his/her decision whether he/she wants to focus on receptive or productive skills. In whatever way it is used, the lecturer needs to consider how the learning of the students will be structured.

The paper clearly shows that the three types of literacy, namely media, information and reading, are promoted simultaneously through Business English seminars and a Business Communication e-course. We

dare to say that other types of literacy such as cultural and multicultural are also developed since the students learn about different cultures included in doing business. In some places, English has invaded the workplace along with the global economy. American and British workplaces are full of idioms. They frequently come up in conversation and especially in today's business world *the person involved in business* encounters idioms (Gillet 2010).

The research findings have revealed that the Slovak students were motivated to acquire not only this kind of vocabulary, but also unidiomatic equivalents of idioms, i.e. their core and near synonyms. It can be said that many students were thankful for doing interesting activities with the use of technology. They regarded these Business English classes as classes of high-quality and really true university classes. It is hoped that the students will be better prepared for the challenges of life as young adults entering the world of work.

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**PECULIARITIES OF INFORMATION SCIENCE
BASED ON THE PILOT COURSE
“PSYCHOLINGUISTIC BASICS OF MEDIA
LITERACY”**

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Key words: information science, psycholinguistics, text-analysis, media education

Abstract: The scholarly article is devoted to the analysis of psycholinguistic peculiarities of information education based on the study of the pilot course “Psycholinguistic Basics of Media Literacy”. The course is aimed at the development of analytical skills for understanding of the media content, comprehension of the basics of the psycholinguistic analysis of the text messages as well as development of logical and critical thinking.

The notions of psycholinguistic analysis of the content and of manipulative content are introduced into the course for the first time.

The proprietary method of the psycholinguistic analysis of the text includes the psychological methods of analysis like content analysis, intent analysis, etc. To add to it, the psycholinguistic approach presupposes the analysis of semantic units of the text, stylistic means and figures, meanings of words, utterances as well as analysis of the stylistics of the message and identification of the author's attitude to an event and persons, etc.

The goals of the course shall include as follows: 1) development of analytical skills, 2) development of skills of psycholinguistic analysis of the text, 3) development of ability of understanding the mechanism of creation of fake news and advertorials, 4) forming the ability of identification of techniques of mind manipulation, 5) development of abilities of orientation in an information field, 6) raising personal responsibility for the actions in the Internet (writing posts in the social networks, blogs or spreading the information, adding ideas and comments). The course participants have to be able to analyse the information from the on-line space and to realize, how the content is built and which factors have an impact on this process.

The course comprises three structural components aimed at the acquiring of the knowledge related to the mechanisms of building the content, improvement of orientation in media space and development of abilities to analyze the information coming to the consumer. In the run of the study we emphasize the development of skills of logical and critical thinking, analytical skills as well as skills of psycholinguistic analysis of the text.

We provide the course spreading the knowledge in the field of information and communication education in the directions as follows:

- developing analytical skills of the information messages analysis;
- providing the opportunity to apply the psycholinguistic analysis of the text for identification of the goal, character and way of sending the message to the consumer;
- teaches to identify the techniques and ways of manipulation in the text.

The course can be applied in the open education system for the people interested in the basics of media literacy.

Introduction

Modern education is dynamic and mobile. The world is changing by onrush of science and technology setting new requirements to the process of education. Nowadays any individual has to orient in the information field of modern systems of transferring and spreading the information, otherwise one risks remaining the outsider of the social processes. The broadening of the world view and understanding of global trends of social development require from its members awareness in new brunches related to technical and humanitarian side of the issue.

In the present work we are going to view the information and communicative sphere of the education process in relation to psycholinguistic knowledge and abilities of an individual. Through mastering the basics of this educational trend each individual is made to perceive more critically the information streaming from various sources, including social networks. Teaching the basics of information and educational and communicative sciences is called upon to develop in students the skills of critical and

logical thinking, ability to understand personal responsibility for the actions in the Internet, in particular related to writing posts, spreading the links and publishing the comments.

The study of information and communicative sciences is also becoming urgent due to an increasing number of information lacking objectivity. It can be spread both via the mass media and the social sciences. There exist the cases when irresponsible actions of some users resulted in incitement of hatred and even destabilized the situation. One of the recent examples is spreading provocative posts in the net after the events in Paris on 7, January 2015, when cartoon images in Charlie Hebdo became the cause of the terror attack (Frau-Meigs 2017).

The issues related to the awareness in the media branch are of priority in modern education. In the European Commission press release IP/07/1970 it is stated that we are now experiencing sweeping changes in the media branch and witness how ordinary people use new opportunities to the full. The media are changing, and so is citizens' use of such media. New information and communication technologies make it much easier for anybody to retrieve and disseminate information, communicate, publish or even broadcast. The ability of people to critically analyse what they find in the media and to make more informed choices – called 'media literacy' – therefore becomes even more essential for active citizenship and democracy. In this respect, "media literacy is crucial for achieving full and active citizenship," said Information Society and Media Commissioner Viviane Reding. "The ability to read and write – or traditional literacy – is no longer sufficient in this day and age. People need a greater awareness of how to express themselves effectively, and how to interpret what others are saying, especially on blogs, via search engines or in advertising. Everyone (old and young) needs to get to grips with the new digital world in which we live. For this, continuous information and education is more important than regulation"(The Press Release of European Commission 2007). Thus, the importance of continuous learning in the field of information and communicative sciences is difficult to overestimate.

According to the scientists, the education in the field of the information and communicative branch is called upon to increase the level of logical and critical thinking, to develop media literacy, to encourage better understanding of modern global processes and to teach to realise the specifics of the media activity. Thus, under information literacy it is accustomed to understand the ability to identify the need in the information, possessing the skills of its efficient search, evaluation and application (Lau 2006, 36).

The impact of mass media on the consciousness of a person is reflected in the term "Consciousness Industries" (Enzensberger 1974). It means the mechanisms through which the human mind is reproduced as a social product. Foremost among these mechanisms are the institutions of mass media and education.

Prof. Divina Frau-Meigs, one of the leaders of the movement in modern media education, states about a special importance of education in the information and communicative sciences. She emphasizes that disinformation and lack of elementary analytical skills can become the cause of misunderstandings and conflicts. In our opinion, even official media provide not always objective coverage of events and the speed of dissemination of unreliable information through social networks results in forming incorrect image of reality and provokes misunderstanding with all aftereffects. According to Freedom House report, online manipulation and disinformation have been used in at least 18 countries during elections in recent years. (Freedom House 2017).

Misunderstandings and conflicts related to unreliable information involve both personal sphere and global level events. According to Frau-Meigs, modern society relies more on gossips arising emotional response than on reliable facts. The images appealing to the emotional sphere are easier to memorize and block rational thinking zones of the cognitive and rational sphere. In addition, “in the information and communicative science the hearing serves main cognitive functions and is viewed as a tool of social connection. It helps to observe the environment, to take decisions, discussions help to compare the values”. (Walker, Stickgold 2006, 139-166). This idea is also supported by recent research in the field of neurobiology. The scientists state that the mechanism of storage of emotional reminiscences differs from that of neutral ones. This is the result of the effect of adrenaline and nor adrenaline hormones (Nicholls et al. 2000).

Thus, the issues relating to the research of the scientific and information sciences are viewed within the frames of critical thinking (Lipman, Masterman, Paul, Semali) and media education (Frau-Meigs, Buckingham, Hart,) media psychology (Giles, Rutledge, Rizzo, Newman, Williams, Hartholt, Lethin).

On reviewing the works in the field of media education, we concluded that a complex analysis involving apart from the mentioned branches the psycholinguistics adds to better understanding of the information field of the modern mass media. The existing courses in media education and media literacy provide a wide range of theoretical provisions and exercises. At the same time, psycholinguistics and knowledge in psycholinguistics as an element of a cognitive sphere are not included to any of the courses offered. According to the European Commission requirements to the proposal in media education, they have to include all technical, cognitive, social, civic and creative capacities that allow a citizen to access the media, to have a critical understanding of the media and to interact with it. Therefore, introduction of knowledge in psycholinguistics is an important stage in the general system of education. The knowledge in psycholinguistics will enable better understanding and evaluation of the content with the help of analysis of the results of the speech activity, to which refer written or oral texts.

Thus, the article covers the analysis of psycholinguistic peculiarities of the information education based on the study of the pilot course “Psycholinguistic Basics of Media Literacy”. The psycholinguistics, critical thinking and media education form its theoretical basis. The course includes the analysis of such types of media as social networks, TV, video, and websites.

The *goal* of the course is developing analytical skills for the understanding of media content, realizing the basics of psycholinguistic analysis of text messages, development of logical and critical thinking.

The tasks of the course lie in the following: 1) development of analytical skills, 2) development of skills of psycholinguistic analysis of the text, 3) development of ability of understanding the mechanism of creation of fake news and advertorials, 4) forming the ability of identification of techniques of mind manipulation, 5) development of abilities of orientation in an information field, 6) raising personal responsibility for the actions in the Internet (writing posts in the social networks, blogs or spreading the information, adding ideas and comments). The course participants have to be able to analyse the information from the on-line space and to realize, how the content is built and which factors have an impact on this process.

Research methods and backgrounds

When forming the methodological framework of the course, we based on educational paradigm of teaching media literacy by L. Masterman aimed at the development of the person’s critical thinking. In the process of analysis of news messages it is customary to consider four spheres having an impact on the nature of their content (Masterman 1998, 31-32): the fact whom the media source belongs to and who is the author of the message; the way enabling the impact on the public mind (ways and techniques); how a surrounding reality is represented with the help of media and who is a target public of the media messages. These spheres make it possible to better understand the causes of events being covered under a certain angle and ways of implementation of ideology and archetypes in the society.

When developing the course programme, we considered the principles of media education as follows:
media education is a crucial field related to the majority of social structures of democratic society;
the central concept of media education is re-thinking of the information as media sources do not reflect any reality but rather interpret it and provide it using the system of signs and symbols;
media education is a life-long process (Masterman, 1998, 31-32).

The Encyclopedia of Social and Behavioral Sciences views media education as knowledge about creation and dissemination of texts; it presupposes development of analytical skills for the analysis, interpretation and evaluation of the content of the news messages (Dorr 2001). Therefore, we included in

the course both the methods of text analysis and the exercises for the development of skills of creation of texts in various communicative situations.

The present course also contains the combination of key moments of the methodology of the basics of media literacy from MOOC DIY EMI course developed by Prof. Ms. Divina Frau-Meigs as well as proprietary technologies of psycholinguistic analysis of the text for identification of manipulations when translating messages from other languages (Frau-Meigs 2017; Krylova-Grek2017).

Results

The course comprises three structural components aimed at the acquiring of the knowledge related to the mechanisms of building the content, improvement of orientation in media space and development of abilities to analyze the information coming to the consumer. It contains the development of skills of logical and critical thinking, analytical skills (such as analysis, synthesis, comparison and generalization) as well as skills of psychological and linguistic analysis of the text.

The course “Psycholinguistic basics of media education” naturally unites a theoretical part with practical assignments aimed at the development of knowledge, abilities and skills in this field.

The introduction to the course provides to the participants general theoretical issues, e.g. the concepts of media education and media literacy; how the knowledge of the basics of media education influences the world view and finding out, whether it is possible to improve own skills in media literacy.

The theoretical part of the first part highlights the content of such notions as journalism, communication outreach and personal opinion. The theoretical part introduces also the notion of manipulative translation, the methods and techniques of manipulative translation are viewed (this part is included only provided the students have a command of a foreign language, e.g. at the faculty of translators or experts in international relations).

The theoretical part contains the knowledge in psychological and linguistic analysis of the text. The latter is carried out based on the methodologies of linguistic and semantic, lexical and semantic, semantic and syntactic as well as psychological analysis of the text. This enables to identify the correlation between psychological and linguistic techniques and to draw a conclusion how language and speech means are applied with the aim to convey the author's idea.

The basics of the psycholinguistic analysis of the text include the psychological methods of analysis like content analysis, intent analysis, etc. To add to it, the psycholinguistic approach presupposes the analysis of semantic units of the text, stylistic means and figures, meanings of words, utterances as well as analysis of the stylistics of the message and identification of the author's attitude to an event and persons, etc.

The practical part comprises two parts. The first one provides the analysis of texts. Depending on the peculiarities of the course the texts can be divided into two types: the first type are texts in native language, the second are translated texts. The texts of the first type are analyzed through comparison of psychological and linguistic methods and techniques. There identified the author's attitude to the depicted, the author's idea and means used to influence the audience. It should be clarified, whether the text can have a suggestive influence on the reader. The texts of the second type are analyzed through comparison of the source and target texts and the availability of techniques of manipulative translation are verified.

In the practical part of the first part of the course we use the MOOC DIY EMI methodology (Divina Frau-Meigs 2017). According to this methodology, the group of students is divided into three groups, each of which playing its social role when researching the news message: an explorer, an analyst, and a content creator. The explorer gets insight into the facts and media sources, the analyst clarifies the sources, compares the data and deals with the issue of confidentiality. The creator produces own content, estimates it and takes a decision as to its making public.

The second part of the practical part applies a proprietary technology of the text analysis as an object of psycholinguistic research. It presupposes creating the situations that enable to research the work of the media expert from inside and to understand the technology of creation of various texts. The main idea of the method lies in the fact that the student in the run of the study plays the role of the media expert in various situations: 1) providing the information as a message, 2) providing subjectively evaluated information depending on the own world view, 3) providing the information according to the terms of the assignment, which effects the reliability of the data and results in biases. The choice of the third situation is caused by the desire to avoid the Dunning-Kruger effect, according to which the person not being an expert in a certain sphere is sure of having enough qualifications to express critical remarks, drawing conclusions and labeling (Kruger, Dunning 1999).

Having tried oneself in the role of a media expert in various situations the person is able to evaluate more efficiently the texts of the information field and understand which approaches are used for the provision of fake information or manipulations.

When analyzing the text material it is also important to consider an educational level, cultural and ideological belonging of the person who had created the message and that of the person reading it. In addition, the same context can be perceived differently by different public. While analyzing the text, one of the crucial skills is the ability to keep away from own beliefs and ideologies and to evaluate only the text material and factual events by applying the methods of psycholinguistic analysis.

Due to the psycholinguistic analysis of the text it is possible based on respective methods to define the goal of the message and the author's idea as well as speech means of realization of an idea and reaching the set goal. It makes possible to clarify whether there are the signs of disrespect, incitement of hatred, provoking the conflicts, etc.

In addition, the psycholinguistic approach presupposes the consideration of a human factor in the aspect of text creation and perception and the factor of situation, in which the information text is formed and disseminated.

The mentioned text can be applied both for the work with the groups of students of high educational establishments and of the students, whose work will be related to the analysis of products of speech activity, e.g. with future journalists, translators, psychologists, and lawyers. It creates the possibilities for critical thinking of the personality to be improved and an adequate evaluation of global and local events to be assured. It learns them to treat more carefully the information emerging in social networks and on-line editions. In addition, the course provides basic knowledge in the psycholinguistic analysis of the text, helping to understand mechanisms of manipulative influence and peculiarities of the media expert's activity in the modern information space.

Conclusions

The psycholinguistic basics of the information education include possessing the analytical thinking skills, ability to analyse the information under application of the operations of analysis, synthesis, generalisation and comparison, and application of the laws of logics. They also presuppose the ability to analyse the information text from the point of view of its intention, to define the means and techniques of influence on the reader.

The course provided by us broadens the knowledge in the field of information and communicative education in the directions as follows:

- develops analytical analysis skills of news messages;
- enables the application of the psycholinguistic analysis of the text with the aim of identification of the goal, character and way of conveying the message to the consumer;
- learns to identify the ways and manipulation techniques in the text.

The course can be used in the open education system for those willing to get an insight into the basics of media literacy. It encourages the development of critical thinking and deepening of the knowledge about the possibilities of psycholinguistic analysis of the text materials. We would also like to mention that the course is included in the actual curriculum of University of Culture and Arts and The State University of Telecommunication is comming into effect starting from September 2018.

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**THE DEVELOPMENT OF MEDIA LITERACY
OF STUDENTS IN EDUCATIONAL PRACTICE**

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Abstract: The article is devoted to the problem of development of media literacy and competence in educational practice. Main objective is to define opportunities and restrictions of usage of training technologies as means of improvement of media literacy and media competence of students. The authors analyzed the main approaches (New Media Literacy, Critical Media Studies, Medium Theory, Pragmatism) and the most popular model to understanding of media literacy (Mediawijzer.net). According to this model authors defined key elements of media competence. Two cases studies from educational practice are presented. First case study is devoted to issues of development of media literacy and competence of students in the psychological disciplines learning. Second case study deals with development of media literacy and competence of students as an element that increases resistance of youth to the influence of propaganda. Authors consider the features of usage of training technologies for both cases. According to their own experience with this approach, authors have come to the conclusion, that the universal model of development of media literacy and competence in training must include four stages: 1) understanding of the influence of media on society; 2) usage of modern tools in media space; 3) communication skills in working with media resources; 4) strategies of using media for personal achievement. Authors admit that this approach offers a useful tool for improving the media literacy and competence of students in educational practice.

Introduction

The growing influence of the media on virtually all spheres of human life and social processes is one of the global trends, the spread of which at the instant moment is felt in different parts of the planet. Active introduction of various media education programs launched under the auspices of UNESCO and aimed at the development of media culture and the formation of individual readiness for effective and safe media interaction has become a peculiar answer to this. The provision of appropriate status for media education programs, as set out in the recommendations of the European Parliament (2007) and the European Commission (2009) is an indication of the realization of this social need.

These recommendations include the introduction of educational programs for various age and social groups, among which a special place is given to student youth who is able to distribute the acquired knowledge and skills in society most effectively. The development of media literacy and media competence of the students themselves requires the use of active learning methods, which are relevant for them.

The problem of the development of media literacy and media competence has been a subject of close attention of researchers for many years. During this time, several interesting approaches to its study were formed.

One of these approaches is New Media Literacies, which is considered to be the dominant conceptual paradigm among researchers. The majority of media education programs have been developed on the basis

of this approach. For representatives of New Media Literacies (Jenkins 2006; Luke, 2007), the point of reference is the interest of citizens in the media, which determines the specifics of their interaction with traditional media and the peculiarities of their use of social media. Interaction with social media is given special attention, because it opens up opportunities for recreation and self-expression for the citizens, allows them to produce media content and form their own information space. The main emphasis of this approach is made on participants' familiarization of educational programs, the latest media technologies and Internet resources, which open up the way for their self-realization. The basic criteria for assessing the media literacy and media competence, according to the representatives of this approach, is the ability to search for information and possess modern media technologies to exchange relevant information with other people, in case free access to Internet resources and social media is provided (Hobbs; 2010)..

Another approach - Critical Media Studies has the largest number of supporters among educators and psychologists, because the views of the representatives of these branches of scientific knowledge were the basis for its development. For representatives of Critical Media Studies (Kellner & Share 2007) the starting point is the position about the manipulating impact of media on users. That is why, in the process of media education, the development of a critical attitude to information and sources of its dissemination, the ability to resist manipulations in the information space is most important for the representatives of this approach. The basic criteria for assessing the media literacy and media competence, according to the representatives of this approach, is the ability to understand informational messages using critical thinking, quality analysis and authentication skills, ability to use reflection to reduce the negative effects that arise in the consciousness under the influence of media (Aguaded-Gómez, Tirado-Moruetaa, Hernando-Gómez 2015). This approach has many supporters in Ukraine among the developers of specialized media education programs. This is quite natural, to look for the danger of external advocacy and the current state of relations with neighbor countries.

The views of the representatives of another approach - Medium Theory have much in common with the two previous ones. However, in this conceptual paradigm there are certain peculiarities. Representatives of Medium Theory focus on the study of the real practice of social interaction that occurs between people indirectly through modern media technology (McLuhan, 1972; Meyrowitz, 2009). The basic criteria for assessing the media literacy and media competence, according to the representatives of this approach, is the ability to generate media content, because this provides creative self-realization and is based on the selective acquisition of media technologies, promotes the creation of social interaction systems based on the awareness of their own goals and needs of the potential target audience (Aguaded-Gómez, Tirado-Moruetaa, Hernando-Gómez 2015).

In recent years, another approach is gradually gaining popularity - Pragmatism. Representatives of this approach (Mason & Metzger 2012) believe that the development of media literacy and media competence

should be based on the analysis of informational messages and media content and the capture of modern forms of communication taking into account social and transnational trends. The basic criteria for assessing the media literacy and media competence, according to the representatives of this approach, is the ability to develop their own communication activities on the principles of social responsibility and ethics, to spread the acquired knowledge, skills and abilities among people who belong to the circle of real social interaction (family, friends, colleagues, other formal and informal communities) of participants in media education programs (Aguaded-Gómez, Tirado-Morueta, Hernando-Gómez 2015).

The aim of the article is to describe the peculiarities of the development of media competence and to search for new ways of activating the reflection of student youth in relation to its interaction with the media space in the educational process.

Model and methods of development of media competence

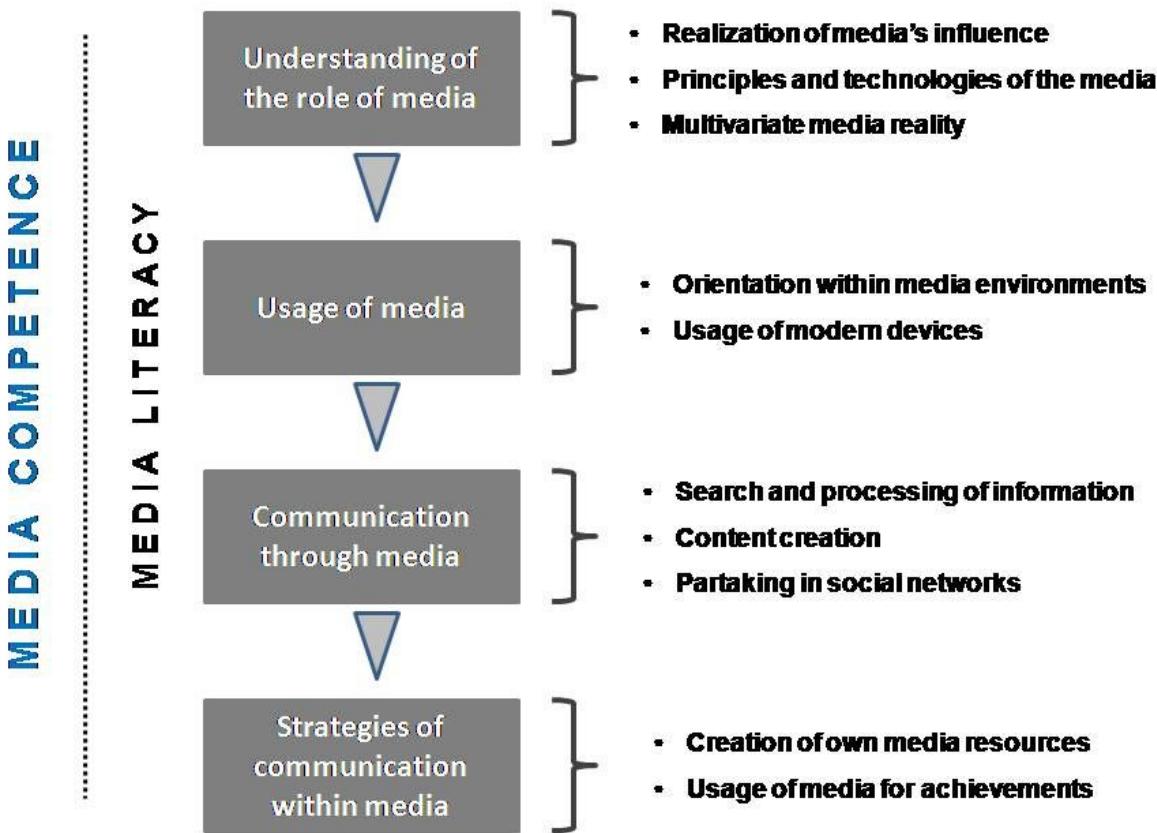
Based on the main approaches to understanding "media competence" and "media literacy" researchers create different models. The most popular of these is the Media Literacy Model, developed by a group of experts from Mediawijzer.net (Delver et al. 2013). In our research we take into account the creative potential of the ideas suggested by colleagues-scientists. We use a modified version of this model, which is aimed at developing media competence during the development of educational programs and trainings (Figure 1).

According to this model, we think that the main areas of development of media competence can be: 1) development of understanding of the role of media in society (increasing media influence, principles of work and technology of media operation, multivariate media reality); 2) development of the skills of using modern media (orientation in the media environment, the use of modern equipment, programs and applications); 3) development of communication skills in the media space (search and processing of information, content creation, partaking in social networks); 4) development of strategies for interaction with the media (selection and creation of own media resources, use of media for their own achievements).

In process of the development of media education programs and trainings we pay particular attention to the selection of active learning methods that, while working with student youth, should be relevant to the target audience, contain innovative components, meet the requirements of higher education in organizing and provide training.

The analysis of modern trends shows that the methods of active training, which: contain elements of gamification and interactivity, allow the use of Internet resources and social media, provide opportunities for the expression of independent creative activity and self-realization, provide conditions for cooperation in execution training exercises and tasks have the greatest potential in working with students

FIGURE 1. MODEL OF DEVELOPMENT OF MEDIA COMPETENCE



Source: Authors, illustration created by the Mediawijzer.net

Web-quest as a method of active learning meet to these requirements. This method involves a search format of classes, during which most of the material or all information with which students work, is obtained from the outside (from a teacher or coach / from the Internet).

Usually different programs are used: from simple resources to distribute text or other documents (Dropbox, Google Docs) or profiles on social networks (Facebook, Twitter, Instagram) to specially created sites.

The standard set of basic structural elements of a web-quest includes: (1) introduction, (2) task, (3) process, (4) source, (5) evaluation and conclusions. An example of usage of this method has been described in detail in our previous publications (Sosniuk, Ostapenko 2016).

However, we now optionally (but quite often) add another element – lifehack (6), which is an option for conceptualizing acquired knowledge and experience in the terms of "wisdom of life" in a form suitable for the transfer of information to any average or not well-informed person.

This element is especially useful in educational programs or trainings aimed at the development of media competence, which a priori provides an option to create their own content.

Depending on the level of training, the level of awareness, the presence / absence of time limits, the Lifehack may take different forms. It can be a simple story using hand-written tools for illustrations, the creation of interactive posters, comics, presentations, audio or video clips. The choice of form may vary depending on the stage of the educational program or the training. In the initial stages, more simple forms that do not require serious additional training are used, in the final stages – more complex, requiring special technical skills and perfect knowledge of media technologies.

In the process of development of educational or training programs aimed at developing media competence, it is useful to conduct individual or group interviews first.

Usually, to create educational programs for the development of media competence in the interview process we find out the peculiarities of the access students / trainers have to media resources, the degree of media awareness and awareness in media technology, the nature of media interaction and the specifics of activity in social media, the degree of possession of technical means (programs, applications) necessary for creating their own media content, available experience of using media resources to achieve their own goals (blogging, own channel on YouTube, promotion of their own profiles in social networks). Obtaining this information allows you to find tasks that may be interesting in content and relevant to the means necessary for their realization.

In addition to web-quests in educational practice, we often use other methods that involve creating their own content for students. Among them, a special role is assigned to comics.

Comics is multimodal text containing images and texts. In fact, the comics is illustrative and other images placed next to a thoughtful sequence for the transfer of information and obtaining aesthetic feedback from the viewer.

In educational practice, the use of comics helps students to improve understanding of complicated learning material and facilitates the development of their media competence. Next, we'll take a look at some examples of comics usage from our educational practice.

Case study from educational practice

From time to time we ask students to make comics, which are dedicated to hard-understandable questions. Usually, students use virtual resources with free access (like StoryBoardThat). Comics are posted in special groups in social medias. Then, we discuss comics on seminars and on-line. There is an example below of a comic book developed by students within the discipline "Fundamentals of

"psychosemantics" to reveal the peculiarities of the development of the personality's system of constructs (Figure 2).

FIGURE 2. COMICS «DEVELOPMENT OF CONSTRUCTS SYSTEM: SIMPLY ABOUT COMPLEXITY» (IN UKRAINIAN)



Picture 1.

She: Hi!

He: You look very cute, as usual

Main text: They have lived in the same town for many years. She has always considered him a friendly, kind, strong and clever person.

Picture 2.

She: Shall we go to the shop at 5 o'clock?

He: Yeah, fine.

Main text: One morning they decided to go to the shop together.

Picture 3.

She: Oh! Oh! Oh!

Main text: He didn't come, because he had forgotten. But she has forgiven him.

Picture 4.

She: Can you go to the shop, please?

He: Yeah, no problems!

Main text: Once in the morning she asked him to go shopping.

Picture 5.

He: I'll do it later!

Main text: Instead of this he bought nothing and played basketball with friends.

Picture 6.

She: OK, things happen!

Main text: She was forced to buy anything herself, but has forgiven him again.

Picture 7.

She: Can you help me with the report for my boss?

He: Yeah, you are welcome!

Main text: Once she asked him to help at work.

Picture 8.

He: How long have you been working here?

Main text: But he didn't, because he was busy with something more important.

Picture 9.

She: That's my fault, I had to rely on myself!

Main text: She had to do everything by herself. She hardly managed to finish on time, but has forgiven him. But she found out, that he was irresponsible.

Picture 10.

She: Will you go to the cinema with me in the evening?

He: With pleasure!

Main text: Anyway, she considered him a man, so she didn't break up with him and arranged to go to the cinema with him.

Picture 11.

Main text: But he has changed his plans until the evening

Picture 12.

She: All men are ***holes!

Main text: She watched the film alone, but she knew not only that fact, that he was irresponsible. She found out something new...

Case study from training practice

We also use the method of creating comics in training practice for the development of media competence and increasing the resistance of youth to the influence of propaganda. Sometimes we go further and we make short films on comic strips together with students.

Below there are frames from one of those "Think with your own mind!". Films about the effect of Russian propaganda (Figure 3).

In the process of creation of the film, students learned about how TV propaganda is being created and how such information is made through news releases.

In addition, they reconstructed the well-known myths of Russian propaganda (the myth "About 2 slaves and 2 hectares of land", allegedly promised as a reward for Ukrainian soldiers, the myth "About the crucified boy", allegedly a victim of Ukrainian soldiers, etc.).

Of course, all these myths have been refuted. However, we do not exclude that these products of Russian propaganda could affect the consciousness of people who are separated from the open media space.

FIGURE 3. FRAMES FROM THE MOVIE "THINK WITH YOUR OWN MIND!"



Source: Own

If in the list of tasks the training involves the recognition of fake information / fake texts, for heating, in the initial stage, it may be a task of conducting a psycho-linguistic expertise of texts or a task for the evaluation of information messages.

In the case when the main tasks of the training are aimed at recognizing manipulations, warming up tasks can be in the form of analytical viewing of films with the obligatory preliminary familiarization with techniques and mechanisms of manipulation in the media space. At the same time, in the final stages, tasks aimed at the development of the skills of using software applications specially developed for content verification (Findexif.com, Foto Forensics, Google Search by Image, TinEye, WebMii, Jeffrey's Exif Viewer, JPEGSnoop, Geofeedia, Wolfram Alpha).

In the process of formation of a resource list, it is useful to use not only your own teacher / trainer's working-out, but also links to media resources (including educational materials on YouTube, educational and feature films), useful open information platforms (for example, such as Media Sapiens - <http://osvita.mediasapiens.ua/>, Stop Fake - <https://www.stopfake.org/kak-raspoznat-fejk/>). The above list should not be exhaustive, so that students / participants of the training have incentives for independent information retrieval.

Generally, this approach lets us to: 1) increase students' interest to the material, which is being studied; 2) talk to the students using the comics language, which is simple and relevant for them; 3) simplify the understanding of complicated questions and problems; 4) develop additional skills of working with different problems and resources, which are useful for studies (including: digital competence and audiovisual language); 5) encourage the interaction of students in virtual space.

Conclusion

The main areas of development of media competence can be: 1) development of understanding of the role of media in society (increasing media influence, principles of work and technology of media functioning, multidimensional media reality), 2) development of skills in using modern media (orientation in the media environment, use of modern equipment, programs and applications), 3) development of communication skills in the media space (search and processing of information, content creation, participation in social networks), 4) development of strategies for media interaction (choice and creation of own media resources, usage of media for their own achievements).

Web-quests and comics belong to innovative methods of active learning that are suitable for the development of media competency of student youth. These methods contain elements of gamification and interactivity, allow the use of Internet resources and social media, provide opportunities for students / participants of training to demonstrate their own creative activity and self-realization, and provide circumstances for cooperation in carrying out educational exercises and tasks.

In process of development of media competence, web-quests and comics can be used for distance and classroom learning, support for learning engagement and creating inspirational motivation in the learning / training process, which provides a higher level of effectiveness of such innovative educational and training programs in comparison with traditional programs.

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Language Education

NON-FORMAL APPROACH TO EDUCATION: HIGHER SCHOOLING	YANA DIACHKOVA Faculty of Economics Taras Shevchenko National University of Kyiv, Ukraine
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Key words: Non-Formal Education (NFE); Non-Formal Educators (NF educators); Formal Educational Institutions; Open Education; Prospective Specialists.

Abstract: Educational systems of many countries around the globe have operated with a fundamental disconnect between practices left over from the analog world. The movement for open education seeks to close this gap, expecting students to be highly motivated to independently search for online courses, tools and practices to improve learning outcomes, to develop 21st century skills or to master a new field of knowledge. Being overloaded with the gigabits of information, educational platforms as carriers of a vast range of information resources and services have to be informative, educative and attractive for the 'consumers'. So, the non-formal approach to education is becoming more and more topical and vital, especially in the field of higher education being a final stage of formal learning as well as an eigenvector for lifelong learning. The article begins by outlining the approach when non-formal education might act in a complementary way with the formal educational system, thus ensuring participants to acquire cognitive, emotional and specific competences and skills, helping identify and trust their instincts as well as developing confidence in their unique learning process. In this context, the role of educators is crucial. Non-formal educators, who are able both to meet academic standards and to broaden learner's horizons and make them aware of new learning dimensions through non-formal educational practices, are positioned to make an essential contribution into not only their students' enhancement of social inclusion, active citizenship, and personal development, but also into their self-sustainability, as well as competitiveness and employability. The aim of the paper is to highlight and practically explore that non-formal educators, being the linking unit between students' needs and professional requirements, are the key element of a highly motivating open education, access to which is becoming an essential part of a formal higher schooling.

Introduction

Education is essential to advancing society. It indicates the passing down the wealth of human knowledge and equipping the next generation of leaders, innovators and productive members of society. Our educational systems are built to provide every person with the opportunity to gain knowledge, develop skills, socialize and self-realize.

Expanding educational opportunities is more possible now than it has ever been before. Through the Internet, learners can find information instantly on virtually any topic, teachers can share their knowledge with students on another continent almost as easily as in their own classroom, and educational materials can be disseminated to a worldwide audience at virtually no marginal cost. And that is the essence of open education.

For quite a long period of time, educational systems of many countries around the globe have operated with a fundamental disconnect between practices left over from the analog world, and the vast potential of technology and the Internet to support more affordable, effective teaching and learning. The movement for open education seeks to close this gap.

Open education has come a long way over the last two decades in reshaping the effectiveness and economics of education. With increased adoption at higher education institutions, open education holds the potential for creating broader systemic changes, including:

- reducing educational costs

- increasing agency of learners and faculty
- promoting greater transparency
- improving student outcomes.

It goes without saying that formal educational institutions are now expecting students to be highly motivated to independently search for online courses, tools and practices to improve learning outcomes, to develop 21st century skills or to master a new field of knowledge, for instance. This means that prospective specialists are assumed to have access to open educational resources. But being overloaded with the gigabits of information, educational platforms as carriers of a vast range of information resources and services have to be not only informative and educative, but also attractive for the 'consumers'. So, the non-formal approach to education is becoming more and more topical and vital, especially in the field of higher education being a final stage of formal learning as well as an eigenvector for lifelong learning (that not only enhances social inclusion, active citizenship, and personal development, but also self-sustainability, as well as competitiveness and employability).

So, this *paper aims* at highlighting necessary requirements to a non-formal educator as well as empirical examples in order to facilitate the transition to an educator being the linking unit between students' needs and professional requirements.

Non-formal education

There is a bulk of definitions of non-formal education in academic environment. Nevertheless, non-formal education (NFE) is an education apart from formal institutions consisting in gathering of educational practices which are not included in the formal system of education (Tight 1996). It is an education that is mostly provided in various seminars, academic conferences, workshops, partly in student mobility programmes, trainings, courses and in which learners are learning by doing, by being integrated into the process, by observing and by working with different methods. This variety of approaches in NFE ensures participants to acquire cognitive, emotional and specific competences and skills, helps identify and trust their instincts as well as develops confidence in their unique learning process. This approach also broadens learner's horizons and makes them aware of new learning dimensions.

NFE is a methodology, which translates in carefully adjusted to the participants and structured practices (although the activities are seldom associated to conventional rhythms or curriculum subjects) which foster the personal, social and professional development of people, on a voluntary basis (Non Formal Education 2018). Non-formal learning can empower participants in important conceptions, as social inclusion, anti-discrimination and active citizenship, as well as contributing to their personal growth.

Moreover, NFE can be seen as an educational approach which may act in a complementary way with the formal educational system (as such it is considered in this paper). The learning activities

within NFE are created to attend learners' needs, aspirations and interests, on a voluntary basis and learner-centered. The methods used in NFE are very diverse and are mainly based on creating healthy environments of trust and sharing experiences. This type of education provides added value for people, for the economy and society in terms of capacity-building of organizations, systems and institutions (Non Formal Education 2018).

NFE became part of the international discourse on education policy in the late 1960s and early 1970s. It can be seen as related to the concepts of recurrent and lifelong learning. Malcolm Tight (1996, 69) suggests that whereas the latter concepts have to do with the extension of education and learning throughout life, NFE is about being aware of the importance of education, learning and training which takes place either in extracurricular activities or outside formal educational establishments. It should be noted that only in recent years this awareness has become prioritized by both educators and learners.

NF educator in contemporary educational settings.

In this context, the role of educators who have a lasting impact on students is crucial. Non-formal (NF) educators, who are able to meet academic standards through both formal and non-formal educational practices, make a significant contribution into not only their students' development of professional soft skills, but also into the improvement of their personality. It makes them more competitive and employable in professional environment. These educators, being the linking unit between students' needs and professional requirements, are the key element of a highly motivating open education, access to which is becoming an essential part of a formal higher schooling.

Therefore, NF educators use a range of core learning principles, methodologies and approaches in their work, commonly emphasizing the learner's intrinsic motivation, voluntary participation, critical thinking and democratic practice. NF educators should be aware of the aims and purposes of both formal education and NFE and their role in its settings (Valchev et al. 2016). As it is highlighted by R. Valchev et al (2016, 29), the NF educators need:

to assume learning as the foundation of the modern education and its potential to benefit people emotionally, intellectually, socially and economically; to value learners, their progress and development, their learning goals and aspirations and the experience they bring to their learning; to promote Equality, Diversity and Inclusion as conditions for effective learning process and for development of a learning community; to enhance collaboration with other non-formal education actors and local community and with organizations with a legitimate interest in the progress and development of the learners; to believe in non-formal education principles as in an effective and meaningful learning strategy and a challenging way toward own professional development and realization.

It is also necessary to point out that NF educators as participants of a formal educational process must maintain an inclusive, equitable and motivating learning environment throughout their teaching practice in order to enable learners to achieve their goals. Communicating effectively and appropriately

with learners to enhance learning, collaborating with colleagues to support the needs of the learners and using a range of learning resources to support learners are crucially important for them. Only in this way, under the conditions of contemporary formal educational settings, non-formal approaches will allow the participants to understand and keep up to date with current knowledge in respect of own specialist area; to present effectively own knowledge and skills in the light of the new educational paradigms; to base on experiential learning as a point of development of professional and soft skills and for adaptation and dealing with the main challenges emerging in future self-realization.

NF educator practices. Empirical aspect

Working at formal educational institutions (universities mainly) we [the authors of the paper] experienced the difference of both formal and non-formal approach to teaching. After empirical observation of the process of teaching and learning we came to the conclusion that the most successful way to meet both academic standards and students' needs and expectations is to make NFE act in a complementary way with the formal educational system. The non-formal label encompasses a wide variety of educational systems endued with functions that lead them either towards or away from the established formal systems. Thus, the existence of a certain degree of continuity linking the formal and the non-formal education might be inferred. The approach is worth being taken into account by representatives of academia as the part of society, especially universities, that is connected with studying and thinking.

Once being implemented into formal schooling, non-formal educational practices seem better to meet the individual needs of learners. According to Ward et al (1974), the analysis of the key features of NFE, diversely from formal schooling, highlights that participants are led to non-formal programmes because these offer the expertise they hope to acquire and the necessary assistance for a better understanding of their own selves and of their professional world. In terms of students, nothing has changed since then. The thing is that nowadays students have an open access to educational resources and are able to gain necessary professional and soft skills independently. But we assume that reasonable and rational guidelines of an educator in NFE settings are more advantageous for prospective specialists than independent search. As NFE is focused on the student, it forcedly makes initially established and adopted procedures, objectives and contents more flexible. It greatly helps a NF educator quicker react in face of the challenges and changes that may affect the needs of students and of the community.

So, practically the correlation between formal and non-formal education does not demand sufficient funds or syllabi changes. It requires only teacher's enthusiasm, willingness to satisfy the needs of the students and active educational position. NFE in this case is comprised of an ample diversity of educational situations, including such educative processes as *distance learning*, *extracurricular activities* and *open systems*. These activities are based on non-contiguous communication, having the

fresh impetus coming from research into individualized learning and self-instructional methods and broadening the social base for open learning systems in the same time. This also offers students a measure of flexibility and autonomy, a rupture of the physical barriers of educative institutions and openness to different methodologies and learning resources.

Thus, to empirically prove the necessity of the transition to an educator being the linking unit between students' prospective professional needs and professional requirements, we would like to supply the theory being introduced in this paper with the examples from our teaching practices (at the Faculty of Economics of Taras Shevchenko National University of Kyiv (Ukraine) and the Institute of Philology of Borys Grinchenko Kyiv University (Ukraine). In the process of teaching (subjects: English for Specific Purposes, German for Specific Purposes, and Methodology of Foreign Languages Teaching), we engage the students into such NFE activities as academic conferences, students forums, online courses (education platform: *futurelearn.com*) and implement non-formal tools into formal settings.

First of all, in the given context it is vitally important to outline the role of the teacher being a NF educator who should embed non-formal working methods in traditional education pathways. The NF educator has to understand how to motivate and support learners as it has already been mentioned above in the paper. We will also highlight definite non-formal activities, working methods and tools that facilitate both classroom and extracurricular work.

Methods

A teaching method comprises the principles and methods used by educators to enable student learning. These strategies are determined partly on subject matter to be taught and partly by the nature of the learner. For a particular teaching method to be appropriate and efficient it has to be in relation with the characteristic of the learner and the type of learning it is supposed to bring about. Suggestions are there to design and the selection of teaching methods should take into consideration not only the nature of the subject matter but also the way students learn. In the process of introduction of NFE into formal educational practices we intend to encourage a lot of creativity. It is a known fact that human advancement comes through reasoning. This reasoning and original thought enhances creativity.

So, the methods we use implement the formal ambit of education in the following way:

- The methodological presentations focus on the educational aspects and the development of social involvement.
- The methods used guarantee the link between the interests, needs and aspirations of the prospective specialists as well as programme requirements of a course.
- Directly or not, all the methods have an economic and social influence on the structuring of educational processes and personal retraining (GP 2012).

- The impact of the non-formal teaching methods used is situated in the social and individual dichotomy.
- The methods help students create an attractive model which promotes their social integration and professional awareness.

First of all, in the learning model we implement into our educational practices, students influence the content, activities, materials, and pace of learning. The educator provides students with opportunities to learn independently and from one another, and coaches them in the skills they need to do this effectively (Madiieva G. et al., 2016). So the process of teaching is not only beneficial but also interesting for learners. Constant practice of such activities as Project work, Development of dialogues, Speech skills + Presentation skills, Group\Pair work, Whole-Class activities, Motivating learners, Business games, Role-plays are essential in our teaching. These methods make both teaching and learning processes interactive, informative, professionally valid and developing, and help the educator in a non-formal way meet both students' expectations and programme requirements.

Tools

In today's formal educational setting, teachers need both models and tools. As it is reasonably stated by Madiieva G. et al (2016, 102), "In addition to the essential theory, aims and goals – the vision or pattern of what is to be created – they [modern teachers] must gain through study, reflection, trial and error, and experience, the necessary expertise in using the tools essential to success in their craft."

In NFE that is a bound part of a formal education nowadays, all tools are intended to improve the learner's way of thinking and of solving problems (i.e. professional soft skills) and to strengthen their capacity for acquiring knowledge. However, a NF educator helps learners find a direction, i.e. give a sense, a direction to find a sense, facilitate understanding, the whole within a dynamic system, the action for learning or what is more often called 'learning by doing' (GP 2012). So the tools we apply are:

- user-friendly (education platform: *futurelearn.com*)
- attractive, interactive and dynamic
- forcing learners out of their comfort zone
- meaningful for prospective specialists' future self-realization
- developing competences and 21st century skills rather than simply giving access to knowledge and learning.

As today's students are using more technological devices, it is imperative that teachers have access to the resources to keep abreast of the growing tech culture. So we encourage using gadgets and variable applications to facilitate academic achievement in new and innovative ways. In this capacity,

teachers do not need to be constantly fighting for student attention, but can freely accept it, by introducing a new educational environment that will automatically stimulate student participation.

We work with the platform *futurelearn.com*, which offers courses from top British universities and professors online for free. The courses there are in various subject fields for learners with different English language proficiency. This education platform combines online learning principles, video lectures, interactive content and a community of learners. It partners with universities and professors to provide courses in a variety of disciplines including social studies, economics, psychology, language, history, medicine, computer science, painting, and more. It is also flexible enough to be used with third-party software and can be used for certification testing and retraining as well. In this paper we would introduce the results of students' work on the courses 'Academic Writing' (elementary and intermediate levels). The courses meet academic standards of higher school through both formal and non-formal educational practices. In the second semester of 2017–2018 academic year, the freshmen of the Faculty of Economics of Taras Shevchenko National University of Kyiv were suggested to work on the courses as a part of their self-study in a convenient time, comfortable place and in their individual pace and to present the results of their study by writing an academic essay on one of the proposed topics. The results of essays assessment proved that the learners developed greatly their critical reading skills, writing skills (necessary to write academic essay in particular) and improved their foreign language competence in grammar. The learners also fully realized the importance of the skills gained both for their future academic life and self-realization as prospective specialists.

It must also be regarded that the courses on the platform *futurelearn.com* are supplied with video materials prepared by both native and non-native speakers of English and social tools like forums and surveys which involve the learners into interaction with the leading teachers of the course and with one another. This is pretty much important for the language learners as they automatically develop foreign language competence in listening, reading and writing and become aware of the variety of accents and language norms used by its speakers in the multinational context. These skills are vital for prospective specialists who are going to operate in a globalized world.

Ultimately, such a non-formal approach to the combination of open resources and contemporary programme requirements in formal higher educational institutions foregrounds the shift from a traditional knowledge oriented educational philosophy to the importance for students to acquire skills and competences that is about helping individuals maximize their potential, both personally and professionally.

Conclusion

In conclusion, a non-formal approach to higher schooling enables an educator to act both as the linking unit between students' needs and professional requirements and the disseminator of non-formal educational practices into formal educational settings. Such an educator, being aware of the aims and

purposes of NFE and their role in its settings, also applies open education resources to complement teaching and learning by means of non-formal approaches. Finally, a NF educator as a participant of a formal educational process advances an inclusive, equitable and motivating learning environment in order to empower learners to achieve their goals by using such educative processes as distance learning, extracurricular activities and open systems. This influences the speed at which the education system responds to the increased demands of the economy for highly educated people that is likely to determine the future development of national economies. This will directly influence the economic structure so that national economies with highly educated population can ensure more favorable structure of production, resulting in better position in exchange relations with other countries. This means that non-formal approach to open education contributes greatly not only into improvement of higher schooling but also into meeting global educational standards by a higher educational establishment.

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Key words: language education, digital learning, open access ICT, higher education

Abstract: Open access to ICT resources and tools have already transformed language education. It provides learners with free access to information that promotes connectivity, communication and interaction, develop digital literacy and other XXI century skills. ICT also provide teachers with a wealth of authentic material to create meaningful learning experiences and thus prepare their learners for the real-world use of acquired skills. The paper explores the variety of ICT-related challenges that most language teachers face today: embracing technological developments; learning to use and implement new media in language classroom; developing methodologies that make use of these media and efficiently support language curricula. This exploratory study also presents the finding of a survey of language faculty members at two largest multi-disciplinary universities in Ukraine that was designed to analyze the current state of affairs with respect to language education and ICT. The findings suggest that there is a pressing need for the more traditional higher education system to address these issues and to make streamlined attempts to develop teachers' digital skills and empower them to incorporate online learning resources into their teaching. This will, in turn, cater for the learning needs of digital natives who are seeing online learning technologies as an indispensable tool of self-development and lifelong learning.

Introduction

Digitization has become our inseparable companion and has effected virtually every area of our lives. Its impact on education had largely been very positive with the major achievement being the opening of learning opportunities to everyone, making them accessible in every corner of the world. The development of information and communication technologies (ICT) in higher education has also triggered a series of changes that have affected curricula, teaching materials and classroom techniques. Its potential lies not only in the idea of “using resources as an integral method of communication of curriculum in educational courses (i.e. resource-based learning), its transformative power lies in the ease with which such resources, when digitized, can be shared via the Internet” (Butcher 2015).

Interestingly, back in 2003, Neil Selwyn argued that higher education teaching and learning is not being effected by ICT, but rather ICT is being effected by higher education and learning and suggests that we should remain realistic about the likelihood of ICT use to be disparate across “different student groups”. Considering the options that universities have in embracing ICT, Selwyn suggests three: 1) the whole-scale restructuring of higher education around ICT; 2) realistically embedding ICT within existing practices in higher education; and 3) accepting the status quo. Adding that a sustainable change can only be achieved if we take into account not only educational computing but also deficiency factors such as poor quality resourcing and lack of teacher expertise, Selwyn concludes that a combination of these options is going to be adopted in the course of several years. Fifteen years after Selwyn’s publication, we can see that ICT remain a challenge for universities and some struggle more than others.

According to a Guide on Open Educational Resources (2011), “the concept of Open Educational Resources (OER) describes any educational resources (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, and any other materials that have been

designed for use in teaching and learning) that are openly available for use by educators and students, without an accompanying need to pay royalties or licence fees". More importantly, OERs are defined as any software, tools, materials, or techniques used to support access to knowledge (the Hewellet Foundation 2014). The term OER is often used interchangeably with the term Open CourseWare (OCW) that usually refers to digital publication of university-level educational materials.

Openness is a concept that involves free dissemination of knowledge through the Internet where everybody can use it and benefit from it. Openness entails two aspects: free availability of the resource and as few restrictions as possible on its use, which may include technical, legal or price barriers. High level of openness of a resource should mean a right to adapt, modify and add value to it. However, most commonly openness means that the resource is digitally available free of charge but its modification or adaptation is restricted. Creative Commons, the most common license that allows free distribution of an otherwise copyrighted work includes at least six types, all coming with some restrictions. Nowadays, the definition of 'open' is constantly evolving and varies according to context e.g. sharing software source code, re-(using) and modifying content and open access to publications.

In the language education domain, the emphasis is often on incorporating ICT resources, such as computers, language laboratories, Internet facilities, and multimedia systems into the curricula. Also, it may refer to the use of various digital tools to enhance students' learning experiences outside the classroom. Arguably, the use of these resources will offer language teachers and students new and exciting ways of teaching and learning. The use of ICT is expected to have a positive impact on teachers' professional skills, facilitating planning and making teaching more efficient by varying curriculum activities. Consequently, teachers' exposure to ICT improves the quality of teaching, helps them cater for the needs of more technologically savvy generation of modern learners. Also, the integration of ICT into curriculum is expected to develop and strengthen students' communicative competences. The common premise is that the use of ICT in language teaching and learning will help the students (and teachers) adapt to the new dimensions of learning in the 21st century and help develop a variety of much needed skills in a digitally enhanced environment.

The general aim of this paper is to explore the variety of ICT-related challenges in language teaching and learning in higher educational institutions in Ukraine. Specifically, we focus on meeting the following objectives: 1. To assess the extent language teachers use ICT in language teaching and learning. 2. To analyze impediments that prevent English language teachers from ICT resources in teaching foreign languages more effectively.

This paper presents some brief overview of the findings of the survey and focuses on the discussion of their implications for the universities. It is part of a broader research on the potential of the implementation

of an open education policy in Ukraine. As Andrusiak (2018) suggests in her most recent study on the use of ICT in the Ukrainian universities, the “effective implementation and promotion of OER and MOOCs require some serious efforts on the part of university administrations that should undertake the task of developing a sustainable open education strategy which will involve the participation of all the stakeholders, on the one hand, and the provision of the necessary technical support and resources, on the other.”

Findings

Despite the fact that digital technology potentially facilitates new approaches to teaching and learning, it cannot guarantee that effective and appropriate learning outcomes are achieved (Kirkwood & Price 2005). The link between perceptions of information communication technologies (ICTs) used in the classroom and students' quality of learning is critical for decision-making with regard to the technologies to use, but teachers' proficiency and knowledge of specific types of ICT tools are both influential and critical to the success or failure of integration of ICT in higher education settings. A survey of over 100 university language teachers from two large multidisciplinary universities in Ukraine with regard to their ICT skills and the use of digital tools in language teaching has provided us with some controversial results.

The results of the survey that only over a half of teachers (56%) consistently integrate ICT in language learning programme, 32% use ICT occasionally and 12 % rely solely on the traditional means. Overall, 92% of respondents reported that they encourage students to use digital resources on their own, e.g. as part of self-study. This result shows that there is a gap between what teachers accept as good practice and what they are able to use as good practice themselves.

Among constraints and barriers that prevent them from incorporating ICT in the course, language teachers report lack of time (48 %), curricular constraints of the course (44%); insufficient skills (32%); lack of resources (32%); and insufficient administrative support (26%). These results bring important insights on what needs to be done and what could be done in order to promote digitization of language education in higher education setting.

As for qualitative feedback collected from students taking courses with incorporated digital component, most students reported a greater inclination to use ICT tools if they know they will use them in nonacademic settings as well. The use of collaborative tools was particularly appreciated since students were recognizing the need to become competent users of such tools before they start their professional careers.

Discussion

The area of language education presents many opportunities for the integration of ICT. However, nowadays there are so many sophisticated digital resources coming up on a daily basis that it may be challenging for teachers to digest all of them and adapt for the needs of their learners. Institutional ICT is

also constantly developing and evolving, and keeping pace with these changes, especially for the slow and hierarchical universities, is not an easy task. It means both teachers and learners need to be selective and critical towards what to use and what is going to be potentially most beneficial for their teaching and learning purposes.

It is generally accepted that the use of ICT renders information more easily accessible and more effectively processed. Moreover, many ICT tools can foster social collaboration and cooperation among students. Integrated platforms, such as Moodle or Google Classroom, with frequently updated course information promote learning and facilitate communication and feedback between teachers and learners. Online posting of grades and lecture notes and complementary websites are also conducive to a positive learning experience. Previous studies have shown that that Internet, email, and productivity tools are the most commonly used ICT tools in higher education settings (Conole et al. 2008), the most frequently mentioned Internet sites being Wikipedia and Google. Blogs, podcasts, virtual environments and social networks are becoming increasingly common in educational settings as well. Students report improved digital literacy as well as boosted confidence in communication and collaboration. Furthermore, Google, Facebook and Twitter enable students to learn outside of the classroom and build communities at the same time. Many students reported that they enjoy many educational uses of ICT since they promote their access to information related to the course but also because they allow better quality of communication and collaboration with the teacher and classmates.

If we explore the possibility of integrating OERs and MOOCs into language courses, especially into Language for Specific Purposes courses, a series of challenges arises. Primarily, there are curricular prerequisites, such as syllabus to be covered, course length (contact hours and self-study hours) and expected learning outcomes aligned with the general outcomes of the degree programme. Most professionally oriented language programmes are aimed at developing language competences that allow students communicate effectively in professional and academic environments. It seems reasonable to assume that integration of MOOCs into language curriculum allows increase the attainment of expected learning outcomes within decreased time and without compromising on the number of teachers.

The market of MOOCs is currently dominated by the “Big Four”, i.e. Coursera, Udacity, Edx, and FutureLearn accompanied by the Chinese giant XuetangX. According to Class Central, the number of courses in 2017 reached 9400 and the number of registered users exceeded 81 million. As for MOOLCs (Massive Open Online Language Courses), the number of language courses and languages to learn is growing ever year and now there are more than 50 available MOOLCs. However, many argue that learning a language takes much more than just a couple of months of online learning and understanding a foreign culture can actually take years if not a lifetime.

When it comes to integrating MOOCs into university language courses, there are several options: 1) to use MOOCs for group study and 2) to use MOOCs for individual self-study. In both cases, the teacher's role is to monitor the students' progress and in the first case the teacher may join the students and participate in the discussions as a course participant. This brings additional benefit in discussing particular insights from the course, keeps the level of motivation higher and potentially increases students' responsibility towards participation in the course. The role of a teacher in this case transforms from the role of evaluator into the one of participant and allows for more meaningful interaction and mutually beneficial learning experiences in the classroom. The second case promotes students' autonomy, caters for individual learning needs and interests and, according to Borshcheva (2015), fosters attainment of higher learning outcomes.

The issue of evaluation remains relevant, and largely unsolved, especially in the framework of rigid assessment standards adopted by most universities in Ukraine. It is indeed challenging to measure the effort and participation of each student, to assess the level of progress achieved, etc. However, it might be more useful to use the overall progress statistics provided by most MOOCs and evaluate the students' performance in the classroom. Alternatively, extra assignments such as written report or presentations could complement the course using a blend of classroom learning and computer-assisted learning at home. Individual written reflection is another tool that could inform the teacher about the student's progress. The limitations of assessment do not outweigh the benefits of integrating MOOCs into language learning. Such major benefits include increased motivation toward learning in general and a specific subject in particular; increased level of learning autonomy; broader access to communicating with other course participants from all over the world; enhanced specific vocabulary and improved reading, listening and writing skills. Other advantages include access to the top of the notch content from the leading universities, which broadens the academic and professional horizons and contributes to development of critical thinking and analytical skills. Among possible deficiencies, we may mention lack of personal face-to-face communication and certain 'fit-for-all' approach, which may not be particularly beneficial for the high-performing students and, on the other hand, challenge those who may be not ready for the level of the course. Some students may experience difficulties in managing their time and exercising self-control necessary for successful achievement of a MOOC. Nevertheless, taking into account that the generation of digital natives who are used to and willing to exploit learning technologies, the incorporation of MOOCs into traditional offline courses is proving effective.

Conclusions

In this final section, we would like to draw some conclusions with regard to the implications that the current state of affairs with the use of ICT in language education in higher education setting has for the Ukrainian universities:

ICT-mediated language learning is as innovation that contributes positively to students' attainment of learning outcomes and encourages their participation in classroom. This means that teachers need to acquire the necessary skills in computer operation to be able effectively utilize ICT tools for the effective teaching of English language in higher education setting. Universities need to acknowledge the fact that they are to provide their faculty members with all the necessary resources and, most importantly, training opportunities needed to develop the teachers' digital skills to make these changes happen.

Effective use of ICT in any institution requires regular maintenance and efficient technical support. This entails extra financial and human resources but without them, no real change is possible. Universities in countries with emerging economies, Ukraine being one of them, may want to channel these resources to some other, seemingly more pressing needs. However, in the long run this investment pays off: one the one hand, by preparing more effective and skilled graduates; and on the other, building the reputation of the state-of-the art provider of educational services.

High-quality educational content needs to be developed and continuously updated to make sure it remains relevant and meets the needs of its users (both teachers and students). It means more collaborative effort is required ensuring that digitally enhanced courses are regularly improved and updated. This also may have implications for the use of effective methodologies in courses with blended format. One solution is to have special teams of collaborators who will work together on the content of the course.

A university-wide strategy for selecting, evaluating and using digital resources needs to be developed and implemented. This will refer both to the preferred choice of an ICT tool: open source in-house developments; OERs; MOOCs; mobile resources, etc. and their integration within the traditional curriculum. All this taken into account will ensure the bright future for the digitization of higher education in Ukraine and safeguard efficient incorporation of ICTs into language teaching and learning.

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Key words: Public speaking skills, Blended learning, Self-reflection, Peer-evaluation, Visuals, Presentation delivery

Abstract: Speaking skills were rated by university students as one of the most necessary and important for their future professional lives, but at the same time, as the most underdeveloped and challenging for mastering, according to the research, the British Council has conducted in the framework of its 'English for Universities' project and published in 2017. Our further research among the students majoring in Economic Studies has highlighted public speaking skills as priority skills for future marketeers and managers. Unfortunately, we faced the situation, when former school leavers, current students of our university, understand public speaking as reading out loud the text written on the sheet of paper and accompanying such kind of delivery with chunks of texts put on the slides. The amount of challenge was added by the 204 hours, allotted for the English for Specific Purposes course. Therefore, we combined available digital resources and interactive classroom approaches to give an opportunity to our students to master such significant competency as public speaking skills. We have analysed with them plenty of presentations accessible on YouTube, including TED talks, in terms of materials selection, delivery techniques, 'hooking' techniques, using intonation, appropriate structuring, using functional language, creating visuals and referring to them during the delivery. Methods of flipped classroom were used as well, when students were reading on the Internet about the tips on how their presentations can be improved and creating a list of criteria for a successful presentation, using online Rubric creators, such as RubiStar. Developed criteria were used for preparation of their own presentations and further self- and peer-evaluation. We removed the terminology with negative collocation and succeeded to change students' attitude to feedback of their peers. This approach has not only improved the quality of students' presentations, but also enhanced intrinsic motivation of them. The indicator of that was a 10% increase in average grade of the group under experiment.

Introduction

In the second decade of the 21st century Ukraine continues integrating into European society in all spheres: politics, education, trade, etc. In education one of the priority directions is transformational change in tertiary sector, that is impossible without raising standards of English teaching and learning. However, Ukrainian English language proficiency level still remains 'low', according to a respected EF Proficiency Index, and scores at 50.91, that, unfortunately, ranks Ukraine at the 47th place among 80 countries in the world and respectively at the 25th place among 27 European countries (EF English Proficiency Index 2017, 7). That brought the Ministry of Education and Science as well as leading universities of Ukraine to the idea of paramount importance of quick and qualitative reconsideration of the approaches to teaching English.

The British Council Ukraine in the framework of its 'English for Universities' project (British Council 2017) has conducted a research 'The internationalization of Ukrainian universities: the English language dimension', where Rod Bolitho and Richard West outlined speaking skills as the most difficult and challenging for mastering aspect of English language learning, relying on the tests results, lessons observations and students' questionnaires (Bolitho and West, 2017, 35-36).

That made us focus more on developing Speaking skills of our students. We have studied thoroughly the normative regulations in terms of the requirements to the outcomes in Speaking. Common European Framework of Reference for Languages identifies the following descriptors for B2 level for 'overall oral

production‘: ,Can give clear presentations on a wide range of subjects related to their field of interest, with appropriate highlighting of significant points and relevant supporting detail‘ (Common European Framework of Reference 2001, 58).

At the same time English for Specific Purposes (ESP) National Curriculum for Universities, that is the basis of ESP course in Ukrainian universities, specifies the assessment criteria for ‘spoken production‘ skills the university students are expected to master by the end of the course, which are turned into a ,can do‘ checklist for students‘ self-assessment: ,Can give clear presentations on a wide range of specialism-related topics, using terminology and supporting ideas with relevant examples; can participate effectively in Q&A sessions after presentations, demonstrating a certain degree of fluency and spontaneity‘ (Bakayeva et. all 2005, 57-58).

Our further research among seventy three first, second and fourth year students majoring in Economic Studies has highlighted public speaking skills as priority skills for future marketers and managers. Unfortunately, we faced the situation, when former school leavers, current students of our university, understand public speaking as reading out loud the text written on the sheet of paper and accompanying such kind of delivery with chunks of texts put on the slides. The amount of challenge was added by the 204 face to face hours, allotted for the English for Specific Purposes course.

So essential necessity of public speaking skills development, high requirements to the quality of presentation preparation and delivery, on the one hand, and low initial students‘ level of these skills and scarcity of time allotted for the course, on the other hand, caused the introduction of an alternative, more productive blended learning approach to teaching public speaking skills, involving on-line resources and opportunities of face-to-face classes.

Methods

Methods, that were used can be identified as analysis of the recent research of the current situation with English proficiency level in Ukraine, survey among seventy three first, second and fourth year students majoring in Economic Studies for identifying their professional needs. Testing presentation skills of the group of 12 students majoring in International Economics in September 2016 to identify their learning gap. And the experiment lasted since September 2016 till December 2017, with the interim results measured in December 2016 and May 2017, and final results – in December 2017. The output of the experiment was estimated as the average grade of the group and percentage of increase during the outlined period.

Results

We have started with the profound analysis of plenty of presentations. Students were asked to find a presentation on YouTube they consider to be successful, and try to analyze what factors made it that

impressive. While demonstrating and discussing them in the classroom, students compiled a list of criteria for successful presentation:

- Eye-contact with the audience;
- Up-to-date and interesting content;
- Interaction with the audience;
- Humor;
- User-friendly, eye-catching and informative slides;
- Body language;
- Functional language.

In addition, students were suggested to analyze certain samples of TED talks presentations (e.g. Smit 2015) and some successful speeches of International Public Speaking competition winners (e.g. Israwi 2010) in terms of avoiding mannerism, referring to visual aids and organization of these speeches (how they were framed). If some of the factors were not mentioned yet, students‘ attention was drawn to Nancy Ancowitz’s ‚Presentation skills self-evaluation tool‘ (Ancowitz 2010.), for them to extend their list of criteria and add more factors:

- ,Clear beginning and ending;
- Rehearsals;
- Using intonation;
- Managing Q&A sessions;
- Time management;
- Overcoming unexpected challenging situations;
- Outlining what is ahead and summarising the key points ...‘ (Ancowitz 2010.).

We used the ‚Process approach‘ to teaching Public Speaking skills. Every stage was elaborated separately with focus on opening, closing, hooking‘ techniques, intonation, visual aids, materials selection, etc.

Intonation. It is agreed that there are certain rules for using intonation in English: ‚falling intonation - in wh-questions, rising intonation - in yes/no questions, fall-rise intonation - at the end of the statements when we have something to add, etc.‘ (Online Cambridge Dictionary). However, those rules could be purposefully broken. We offered our students a slip of paper with the phrase, where punctuation was completely omitted: ‚Oh wow is this what we are having for lunch‘, and asked them to suggest as many

variants of emphasis as possible, as it was done with the phrase 'To be or not to be that is the question' in the performance of Royal Shakespeare Company (To be or not to be - Shakespeare Live).

Then we distributed one and the same piece of text among the students:

"Tonight, we are one step closer to that vision of America because of what you did here in Iowa. And so I'd especially like to thank the organizers and the precinct captains, the volunteers and the staff who made this all possible. And while I'm at it on thank you's, I think it makes sense for me to thank the love of my life, the rock of the Obama family, the closer on the campaign trail: Give it up for Michelle Obama. I know you didn't do this for me. You did this because you believed so deeply in the most American of ideas -- that in the face of impossible odds, people who love this country can change it." (Obama 2008, 2).

But the emotions and feelings, that the students should express, while reading this text, were different: frustrated, happy, enthusiastic, amazed, calm, irritated, hesitant, etc. The task was to read the text, expressing emotions for other groupmates to guess what emotion was nominated to the speaker. Those activities demonstrated to the students what a powerful tool an intonation could be.

Establishing an *eye-contact* with the audience was one of the biggest challenges during the course: our starting point was reading out loud from a sheet of paper. Gradually, the students were getting used to speaking without paper support, maintaining direct eye-contact with the audience. The turning point for them was the task to prepare a two-minute pitch-speech about strange innovations of the XXth century (Silliest Inventions of the 20th Century). They were so engaged with the funny task, more over, the time was limited to 2 minutes only, so the task was more than achievable – all these factors enabled the students to overcome their public speaking anxiety. Since that time those students were not using paper support any more and succeeded to establish and maintain eye-contact with their audience every time they were delivering presentations.

One more 'nightmare' was with their initial approach to *visual aids* preparation. There were chunks of texts put on a slide, that usually were not readable. We have analyzed lots of PowerPoint Presentations and worked out the criteria of appropriate layout, fonts, colors, organization and content of slides. The emphasis was put on avoiding repetition of wording of the slide in the speech itself while delivering. The students understood, that slides should contain only numbers, graphs, pictures, cartoons and the key phrases they want to put emphasis on.

One more factor that allowed us to make a qualitative transformational change in teaching Public Speaking was an alternative approach to *evaluation and assessment* of students' presentations. We started with compiling a list of criteria, later on, we together with students worked out the descriptors for every criteria or a group of criteria. Online rubric creator Rubistar helped us to generate a list of criteria with

descriptors and grades, that we used for students' self-evaluation, peer-evaluation and teacher-assessment (RubiStar). It should be mentioned that involving students into the process of rubric creation leads to their better understanding the task and the requirements to it, allows to avoid misunderstanding and confusion while assessing the performance.

We want to emphasize the importance of self-evaluation and peer-evaluation of the student's work according to the descriptors. Immediately after delivery the speaker was asked to reflect on his/her performance: what went well, what he/she would do differently next time. Then speaker's groupmates evaluated his/her delivery and preparation in terms of positive moments and areas for development. And the last to evaluate and assess was the teacher. We purposefully have replaced the term ‚negative points‘ or ‚disadvantages‘ with ‚areas for development‘, that has positive connotation and caused constructive changes in speaker's attitude to criticism. Moreover, comments from peers worked better, than remarks from the teacher, because the speaker perceived that as the team opinion, the opinion of majority. Besides self-reflection and peers' feedback on the spot, the speaker had an opportunity to analyze his/her delivery at home in terms of mannerism, posture, facial expression, pitch and pace, it was possible because his/her performance was shot on his/her own smartphone (for self-reflection only). All of these factors changed the attitude of the students to evaluation and assessment, that allowed the latter to have positive and fruitful impact on student's performance.

The results of the joint students' and teacher's efforts were as follows: in September 2016 the initial average grade was ‚16‘ out of ‚20‘ (80%), in December 2016 the average grade was 16.25 (81.25%), in May 2017 – 17.5 (87.5%), and finally, in December 2017 – 18.17 (90.85%). That gives us a clear picture of quantitative increase of approximately 10%. But we can report about qualitative gain as well: at the end of the course all the 12 students of the group were able to deliver an effective 10-minute presentation without paper support, establishing and maintaining eye-contact, capturing attention of the audience, developing user-friendly visual aids and managing Q&A sessions.

Conclusion

Recent research has demonstrated a pretty low English proficiency level in Ukraine. At the same time requirements to the University graduates are extremely high and every year competition in the World labour market increases. That brought us to the idea of reconsidering the approaches to teaching English in tertiary sector. We have found out the professional needs of our students, among those public speaking skills turned out to be the most underdeveloped and challenging. For future economists excellent presentation skills cannot be overestimated, that is why we focused our efforts on their development. We used flipped classroom techniques: plenty of work our students were expected to do out of the classroom: analyze the existent Youtube presentations, including TEDtalks; compile a list of criteria and then,

together with the teacher create a rubric with the descriptors, using online rubric creator Rubistar. We used a ‘Process approach’, elaborating in details every single stage of presentation preparation and delivery, paying attention to every important detail, and practicing every stage and technique. Moreover, we effectively used such tools as: self-reflection, peer-evaluation and teacher evaluation and assessment, removing demotivating effect of inappropriate terminology: we replaced words ‘negative points’ and ‘disadvantages’ with ‘areas for development’ and ‘what will you do differently next time’. As a result, all the students of the group under experiment at the end of the course were able to deliver sometimes not worse than some of the TEDtalks certified speakers. The results of their hard work and efforts were proved by the 10% increase in their average grade.

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Key words: ICT, English language, Albania

Abstract: ICT development has got great influence in everyday classroom teaching and learning. The purpose of this study was to learn more about how Albanian teachers use ICT and digital skills in their English classes, and to probe their reflections around the use of different tools and pathways in second language learning. Our goal was to gain more insight into how ICT is used within a pedagogical frame in English teaching, in Albania. The methodology used to develop this paper was a mixture of quantitative and qualitative research. It was conducted a digital survey among 110 teachers of English in three major cities of Albania and 5 focus groups in high schools. It was clearly stated in the findings of the questionnaire and focus groups that teachers use ICT in a varied manner in their teaching as far as they consider time restrictions, their own competence and the availability of ICT tools in their schools. A major tendency is that ICT is used mostly for writing and presentations in high schools. Another significant feature was the use of practical exercises for listening and speaking, and for vocabulary or grammar training. Project work was reported to be used rather seldom, and in ordinary English lessons, there was very little use of authentic communication with other English speaking people outside the classroom. According to the respondents, the textbook plays a prevalent role in teaching, and digital exercises related to the textbook web site are frequently used. Several teachers report that they learn more by sharing experiences and teaching each other, rather than attending outdoor courses. There was a great interest and demand of teachers for useful educational resources on the internet and for more knowledge on the use of ICT in class.

Introduction

Foreign Languages Education is regarded not only in Albania but worldwide as the key to promoting economic growth at the local and national level. Information and Communication Technologies are particularly important in countries where segments of the population are disadvantaged in education or live in rural areas, as is the case of Albania. Education for youth increases the opportunities for employment and improving their social conditions and economic situation. In a world that is ever more being directed towards technology and globalization, understanding, use and creation of a culture of ICT has become a very important factor that enables the education of students with a contemporary and realistic education, which provides the workforce with skills acquired ready to face the challenges of development. The Ministry of Education and Sports in Albania has under the jurisdiction over 2,125 schools, 1749 primary schools and 376 secondary schools, so ICT and Languages remain the main priorities. It aims at a better Education system and compatible with European standards.

The use of Information and Communication Technology (ICT) has become widespread providing useful tools for many teachers, especially for those who teach English as a second language. Taking into account the current policy and curricular context, Digital Agenda 2015-2020, the use of digital technology to enhance language skills has had an enormous development in our country. There are unlimited, easily available educational resources on the internet. The use of ICT material makes it easier for teachers to distinguish teaching material with several proficiency levels.

In 2006 the Albanian Ministry of Education introduced ICT curriculum as an obligatory element in upper secondary school, and in 2014 was expanded to basic education, starting in III grade and extends up

to XII grade. The digital skills are one of the five basic skills in the Albanian national school curricula, along with oral skills, reading, writing and numeracy. A basic skill is defined as the basic prerequisites needed to be able to learn and develop in school, the workforce and in social life in the 21st century (The Albanian Ministry of Education 2013, 5).

As far as the basic use of technology has entered in schools, the issue is no longer how to use technology, but how to use technology within a pedagogical framework related to the subject aims. The English Subject Curriculum with a stronger focus on digital skills has the intention that digital tools are to be integrated into the subject and that is reflected into the goals. Albania has made ICT tools approximately accessible in schools since 2006 and Albanian schools have invested in ICT tools, programs and infrastructure, and measured in equipment and Internet user rate, the conditions for creative use and learning outcomes using ICT have never been better (MoES 2013).

The goal of this research paper is to gain more insight into how ICT is used within a pedagogical frame in English teaching in Albania, and the main research question is: *How do teachers of upper secondary school use ICT in class, and how do they relate their methods to the goals in the English curricula?*

This research question was explored in a digital survey and five focus group interviews which were carried out among English teachers in upper secondary schools in Albania during the school year 2016-2017.

The aim of this study is to learn more about how Albanian teachers use ICT and digital skills in English classes, and to examine their reflections around the use of various tools and approaches in second language learning. Many Albanian teachers feel challenged nowadays by rapid technological changes and new devices who are teaching the generation of students as they did not grow up with the same display to technology as their students.

Literature Review

The Ministry of Education and Sport has implemented the use of ICT in the Albanian national curriculum. Digital skills in English mean being able to use different digital tools, media and resources to get relevant knowledge in the subject of English, to assist in language learning and to communicate in English.

The focus in this paper is on the general use of ICT in English language learning along with the use of digital skills in English lessons. The requirements stated above elaborate and define the term “digital skills” as used in this paper. Digital skills may be used to strengthen language learning, communication and the knowledge of culture, society and literature, which are the three main areas within English Curricula.

Despite the fact that ICT is intended to be integrated in these three areas, there are only a few goals mentioned in the English Curricula where the use of digital tools is mentioned explicitly from 2nd to 10th grade. These goals are mentioned explicitly in the area of language learning and communication. Under language learning the students are meant to be able to “choose different digital resources and other aids and use them independently in their own language learning” (10th – 12th grade).

Walker and White’s (2013) model contributed in our research in keeping the analysis and discussion of the survey and interview results within the context of language learning, and not the use of ICT in general. While analysing the material, Walker’s and White’s model will be a reference for different phases of computer assisted language learning and technology enhanced language learning. It shows how technology has developed and changed the way teaching and learning has been perceived. Walker & White have discussed and modified earlier models and concepts of use of ICT to make a description of various stages and show the influence of technology role in education and language learning theories.

Walker & White claim they see a movement from computer assisted language learning to technology enhanced language learning, as they see technology not as assisting language learning, but as a part of the environment in which language exists and is used (p 10). They maintain that “...as people become accustomed to something new, the technology itself recedes and becomes simply a normal part of the way that we do things...” (Bax as quoted in Walker & White, p. 3).

Their model provides a description in chronological order of ICT development in education since its early start in the 1970s with structuralistic drill and practice programs, through the 1980s with personal computers in schools which encouraged constructivist learning, to the paradigm shift in the 1990s with the internet influencing communicative learning theories, today there is a “normalized” integration of ICT in education. This “normalized” stage includes using ICT in an adaptable manner for communication and interaction. This model was chosen as a support in our discussion and analysis when giving a descriptive view of how ICT is used in language learning today.

Moreover, Cook (2008) claims there are several approaches to language learning today, and there is no one single method that can be said to be better than another. This means that teachers should try a variety of approaches in order to provide their students’ various learning styles. In her description of English as a foreign language, the key component is variety. ICT has the possibility of providing variation, and this is one of the main reasons why teachers use ICT in their lessons.

In addition to the aforementioned theories, referring to a number of small-scale quantitative studies and a number of small-scale in-depth qualitative studies, Andrews (2007) claims that there is no conclusive empiric research which records that the use of ICT gives better learning outcomes than ordinary traditional

teaching. He puts attention to the teacher that s/he is the main figure for pupils in terms of attitudes towards the use of ICT in English, at least in the curriculum and in the classroom. ICT certainly can change the role of the teacher from instructor to facilitator in some parts of the curriculum.

This literature review set this research within a deeper understanding of how the use of ICT has been practiced, and traces the general theoretical framework which has been related to the use of ICT in education. As it was mentioned earlier, Walker & White's framework will be used in the analysis of the survey results and focus groups.

Methods

This research paper combines qualitative and quantitative methods, and consists of five focus groups and a digital survey conducted with 110 teachers of English language. The reason for choosing a mixed methodology was to try to gain as much knowledge and immediate insight into the use of ICT in English classes as possible within the aim and time limits of this paper. Furthermore, this allows to triangulate the data in order to approach the question from various perspectives. The benefit of quantitative research is that it gives the possibility of counting and categorizing responses. A digital survey is an easy and quick way to gather a lot of responses from a wide area whereas a focus group provides qualitative data, as it is impossible to quantify or count results. The intention of qualitative research is to gain further insight into how teachers use ICT in English classes by using interview questions to examine both views and attitudes.

The digital survey had 24 questions, and was divided into six main sections:

1) Framework and organization, 2) Learning resources and digital tools in English teaching, 3) Pedagogical use of ICT in education, 4) Learning resources, 5) Personal information and 6) Attitudes/motivation. The six categories were made in order to cover a broad range of information. The survey was semi-structured with both open-ended and close-ended questions. The Likert scales were used for most of the questions. The dimensions were to rank frequency (how often digital tools were used) and to examine attitudes by ranking the degree of agreement with a declaration. The advantages are that a digital survey is easy to distribute and may gather quick responses in real time.

The qualitative data was obtained by conducting focus groups at five different upper secondary schools in three major cities of Albania. This was to augment the data from the survey in order to approach the thesis question from various perspectives. Due to the practical aspects of conducting the focus groups, such as being able to hold them during the teachers' working hours, it was necessary to choose schools within a close geographical area in order to be able to reach them physically.

The first section of the survey „Framework & organization” gathers information about the external factors influencing the use of ICT in class. Many studies show that a crucial factor for digital competence

building is that the school leaders are involved and play an active role in the way schools organize their work. The purpose of the questions is to map the students' access to digital tools and how lessons are organized. This section consists of three questions where the answers are arranged in Lickert-scale ranking responses, and one sub-question with three response alternatives in the end.

Results

ICT used for writing and creating presentations

The most frequent use of ICT in upper secondary / high school is for writing, using word processing or PowerPoint for presentations. In this survey a very clear majority (87%) agree that "Students are good at creating their own texts". This shows that teachers feel their students are satisfied with the way students produce texts. The section does not specify what kind of texts, but the term "create" indicates that this may be interpreted as all types of digital texts such as presentation texts like PowerPoint or printed texts given as assignments. A lot of the students have gained the basic operational skills, such as loading up files, inserting pictures in a text and adding titles, bullet points and designing creative lay-outs. Many students start using presentation programs during primary school, and by the time they arrive at upper secondary school, several have quite a good command of presenting their work for the rest of the class.

When it comes to the use of ICT for writing, the most frequent use is related to assignments delivered. Using a word processing program helps to edit and rewrite thus making the writing process easier. The focus interviews from the two upper secondary schools discuss the problem of plagiarism and how to cope with students copying and not using their own words. According to the survey, teachers do not feel confident that the students know how to find sources and how to rewrite and use their own words.

In the discussion in the focus groups several teachers had strategies for detecting plagiarism and in addition to using their own prior knowledge of the students' language proficiency, they used Google to search for the source of the text. Teachers maintain that the most important thing is teaching the students how to use their own words, and mentioned some strategies on how to do this.

A discussion evolved as to whether all writing on computers is good and one teacher asked for more focus on handwriting and the basic skills of calligraphy. The most important factor is that writing on a computer provides automatic word correction, and is easier to edit. The written result is much tidier to read for the receiver, and word-processing programs make it easy to insert comments or corrections in the text. In relation to the theoretical framework, this may be considered as a scaffolding device, as the word-processing devices may provide the guidelines and help needed for the students to concentrate on the message and content of their writing. This will help students to attain the goals of communication which are highly focused upon the English curricula.

Another important factor which was mentioned in the focus groups is that students often write more and put an effort into making a presentable result if they write for a larger audience. Using the computer results in the students writing more than they do with pencil and paper, according to some responses in the focus groups.

ICT used for practical exercises in language and grammar

Most of the teachers use internet-based review exercises which have to do with vocabulary or grammar. According to the Albanian Education Regional Directorate, the use of repetition exercises is the second main area of ICT use in English lessons in Albania, and the responses in this research show the same trend. As the results from the digital survey show in question 13, these exercises are often related to the textbook. The responses in the focus groups found out that the main reason for choosing these exercises was immediate feedback. According to Hattie, learning is optimized when there are multiple opportunities for learning, such as deliberative practice and increasing time on task, and when feedback is given frequently (Hattie 2009, 221).

Some aspects of language learning involve repetition and memorization which has been denigrated the past years as being outdated, many net-based language learning programs today follow a structuralistic pattern. The principle of automatic feedback is used in fill in exercises such as vocabulary learning, verb conjugation or preposition exercises. Other language learning exercises may be gap filling in texts, recognizing language patterns or answering simple reading comprehension questions. These programs provide instant feedback which strengthens each correct response from the student. Furthermore, the wide range of exercises make it easy for teachers to differentiate their material in accordance with the student's level of ability (Svennson 2008, 51).

Walker & White claim that practice programs still have a place in language learning, and are merging into new ways of use. New technology makes it possible for students to repeat and work wherever they want whenever they want. Another aspect is the possibility for teachers to use authoring software to create a bank of activities which learners can use anywhere (Walker & White 2013, 3).

ICT for listening and speaking activities

A major trend both in the survey and in the focus groups shows that teachers use ICT a lot for listening to authentic spoken language or repeating sounds, words and phrases. In the survey the open-ended question "Have you used ICT for listening and understanding of spoken English?" resulted in many responses showing a general enthusiasm for listening to examples of spoken language. Teachers are very enthusiastic about the variety of sources they find on the net. The interviewed teachers described how they use the Smart board to show animated YouTube clips for sound recognition and word recognition. The

clips were entertaining and motivating, and the students learnt words and short phrases, and repeated them often.

The teachers' responses reflect enthusiasm about the motivational and learning effect these listening sessions have. One teacher reflected upon how using the iPod provided a multimodal approach to learning, by stimulating all the senses with a combination of sound, pictures or animations and text. Teachers use clips to demonstrate various dialect samples of authentic English language from different parts of the English speaking world. Using clips of spoken language shows that teachers use a variety of English accents and want to get students in touch with authentic language. This correlates well with the goals in the English Curriculum.

Another frequent use reported by teachers was the use of recorded sound files in order to assess the student's spoken language. Students often feel time pressure when trying to express themselves in a second language which they do not have a complete command of. For many, the possibility of recording their speech on a sound file gives them time enough to think of the phrases they want to say. Sound files also have the benefit of being correctable, so if a student is not satisfied with their recording, they may delete the file and start again. The teachers in the focus groups explained that the possibility of listening, repeating and practicing was the main reason why the students found it very motivating to use.

In the context of ICT, socio-cultural theories have often been drawn upon to explain how project work and collaborative work with ICT may strengthen the level of collaborative knowledge of the participants. In this case, it may be argued that the technology mediates a scaffolding device, by providing spoken patterns that may be repeated and by providing the time and space needed by learners to produce their own language.

Little use of project work and authentic communication

One of the most significant recurring findings both in the survey and focus groups is that there is very little communication in English with people outside the classroom, although there are exceptions with project work where the teacher points out that they have more time to experiment and communicate with other people by using programs. The communicative goals and focus on "authentic situations" in the English digital skills may be questioned and discussed according to these results, but also how the term "authentic situation" may be interpreted. As some of the teachers in the focus groups argued, they created "authentic situations" by using role-playing or other speaking activities in the classroom.

Project work was mentioned in some examples in the focus groups, but according to the survey results it is rarely used. An example mentioned in one of the focus groups is from the 10th grade and describes students reading and gathering information on the internet in order to create their own presentations. These activities require a higher level of language proficiency and independent work as the students must read

and understand the texts they find on the net. This reflects the teacher's ability to make use of ICT in order to urge creative use of language. Taking into consideration Walker & White's model, this is an example of integrated use of ICT with a focus on collaborative learning.

Another important factor is time. Several teachers report not having enough time in their ordinary lessons to use project based teaching. There are a lot of goals in the English curricula, and many teachers feel the pressure of having enough time to conduct their lessons in accordance to the goals. The examples mentioned on project work were done in the in-depth subject of English, which is an elective subject taken in addition to the ordinary mandatory English lessons.

A third relevant factor is the uncertainty related to assessing project work. In the focus groups, various reasons were given for assessing individually in upper secondary schools, and an important reason was that all students are evaluated individually, and teachers work continuously to give process evaluation during the term and summative evaluations at the end of each term. Furthermore, the framework for basic skills lacks dimensions related to collaborative learning or more specifically to co-operative problem solving and it is difficult for teachers to assess as there are very few guidelines to follow. Although The Albanian Ministry of Education and Sport is developing new assessment approaches, it is a paradox that the final summative assessment in school is still strictly related to individual results. The ability to communicate and collaborate is highly demanded in the work place, but it is not easy for teachers to assess and appreciate these characteristics in relation to the final term grades in each subject.

Conclusion

The aim of this study was to examine their reflections around the use of various tools and approaches in second language learning and to learn more about how Albanian teachers use ICT and digital skills in English classes. The goal was to gain more insight into how ICT is used within a pedagogical frame in English teaching in Albania, and the main research question was: How do teachers in primary and lower secondary school use ICT in class, and how do they relate their methods to the goals in the English curricula?

This research question was explored by using a digital survey and three five groups which were carried out among English teachers in upper secondary schools in Albania during the school year 2016-2017. A quantitative survey was chosen in order to collect background information, followed by focus groups to deepen understanding into attitudes and descriptions of classroom practice. The questions in the survey and focus groups were both based on the digital skills stated in the English curricula, in addition to some general questions about the use of digital tools and educational digital resources.

The results from the data material show that Albanian teachers use ICT in diversified manners in their teaching as far as they consider time restrictions, their own competence and the availability of ICT tools in

their schools. A major trend was that ICT was used mostly for writing and presentations in upper secondary school. Another significant feature was the use of practical exercises for listening and speaking, and for vocabulary or grammar training. Project work was reported to be used rather seldom, and in ordinary English lessons, there was very little use of authentic communication with other English speaking people outside the classroom.

According to the survey and interview responses, the course book still plays a prevalent role in teaching, and digital exercises related to the course book website are frequently used. A majority of the respondents wants to learn more about using ICT in class, but they report that they learn more by sharing experiences and teaching each other, rather than attending external courses with little relevance to their own daily situation in class. Many teachers reported that it took a lot of time to search for useful websites that would fit their needs for teaching material.

It is still difficult to draw any general conclusions as the numbers of the quantitative data are small, and the qualitative data may only reflect certain trends within a certain group within a limited scope of time, even though the results of the data give certain indications,. Anyhow, as the data reflect a representative sample of English teachers in three major cities in Albania, it may give some useful information of how ICT is used in English teaching in Albania today.

What was identified from qualitative and quantitative data, we conclude that there is a big demand for internet based educational resources where teachers may have access at all levels in upper secondary schools and teachers need more time and opportunity to learn about didactic and pedagogical use of ICT within the English subject.

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Key words: Instrumental motivation, Active learning, Teachers, Students.

Abstract: The role of education in the development of a country is indispensable. This is because the education is the engine that moves forward all the other areas of humans activities. Considering the studies conducted in Albania we conclude that education in our country still needs improvement. Many studies report that the passive role of students in the learning process and their absence of engagement in different classroom activities are quite common in Albanian schools. On the other hand, in literature we find that motivation and engagement are two of the most fundamental factors in successful learning. If students lack motivation they will engage in distracted behaviors which will prohibit them from putting forth efforts. The role of teachers and their competencies to use active learning techniques are perceived to be very influential in promoting students' motivation. The main aim of this study is to identify the influential factors that contribute to students' motivation and engagement in second language classroom. Sixty Albanian students at "Aleksandër Moisiu" University in Durrës, (intermediate level) attending the course 'English for Specific Purposes', became part of the study. The instrument of the study was a questionnaire which consisted of 20 questions. Through this questionnaire we collected data on the level of students' motivation and the factors influencing it. In general, the research indicates that instrumental motivation in learning English as a foreign language is high in Albanian students. However, teachers should adapt their teaching methodologies to meet students' needs and requirements.

Introduction

Albania is a country that is going through major changes in different areas. One of them is the education system which has undergone during the past ten years lots of improvements and a total new organization. In addition to primary and secondary education, important reforms have affected the function and the performance of universities. Among the list of changes we can mention: the closure of some university campuses in small cities of Albania, organization of university curriculum based on disciplines, changes in the number of credits and duration for professional masters, reorganization of master of sciences programs, etc. In addition, important changes have affected the teaching methodology. Attempts are made in all levels of education to move from a traditional methodology of teaching to a modern one, from the use of passive learning methods and techniques to more active ones.

The aim of all the above mentioned improvements and more is to increase the quality of teaching and learning so that the knowledge is delivered and obtained in a genuine learning environment. Just like in other activities, motivation plays an important role in the successful realization of teaching/learning process. The term motivation has got numerous definitions and classifications. Generally, motivation has been defined as the reason or the attribute that moves people to do or not to do something (Gredler et al. 2004, 106; Guay et al. 2010, 712). Jeremy Harmer (1991, 3) defines motivation as "some kind of *internal drive* that encourages somebody to pursue a course of action". In other words, motivation toward learning English as a second language can, to a certain degree, influence students' success or failure in learning it. That is why students' motivation is considered as very important and studied at great length (Locke & Latham 1990; Wu xinchun 1999; Hudson 2000; Biggs 2002 etc.).

On the other hand, there are four distinct types of motivation related to second language learning: extrinsic and intrinsic motivation (Deci & Ryan 1985) and integrative and instrumental motivation

(Gardner and Lambert, 1959; Hudson, 2000). According to Hudson (2000, 171) instrumental motivation is related to social and economic goals such as getting good marks at school or finding a good job after graduating, whereas integrative motivation is based on learner's desire to use language as a linguistic and cultural tool in order to become part of the foreign language group of speakers. For the purposes of this study we will investigate only the instrumental motivation, since for university students this motivation is more desirable (Deci1999).

A large number of studies highlight teaching methodology as an essential element in creating supporting environment. Teaching methodology is reported to have not only a great impact on students' motivation but also on their academic progress (Lightbrown & Spada 2006; Spolsky 1990). Burns (1982) found that teachers who prefer student-centered methods create a more positive environment than those in favor of traditional approaches. This finding is reinforced by Combs' (1965) study which shows that students feel discouraged in a classroom dominated by the teacher.

The traditional teaching in Albania was characterized by delivering of the new information in a mechanical way. The traditional tools for spreading the knowledge were the teacher, the chalkboard and the book. Knowledge was supposed to be absorbed by students mostly by heart since a critical reproduction of the information was not encouraged. However, the new studies emphasize active participation of both students and teachers as a key factor in learning success. Hodo (2016) study reports that Albanian students respond positively in an organized course which is taught by an instructor who shows interest on how and what students learn. Lila (2016) found that Albanian students were more motivated by teachers who manifest a friendly attitude and use student-centered methods as their primary choice.

In a study conducted in two public secondary schools in the capital city of Albania, Taraj (2017) found that students' motivation (pre-intermediate and intermediate level) was influenced by the activities teachers' performed in English classroom, students' level of anxiety and their relationship with the teacher. Results from the study showed that writing and speaking were considered as more challenging by Albanian learners. The level of anxiety emerging from how successful they thought they were using English as second language caused deficits in their performance. The most significant finding from the study is that Albanian students appreciate teachers' help.

Another study with undergraduate students (Uka et al. 2014) reports that the relationship between learning and students' motivation is not affected by the changes in gender, educational level, grade level or the kind of school they attend. Findings from the study show that students' motivation depends on the school and teachers' attitude toward them as well as the teaching environment.

Even though, the university setting is somewhat different from the lower levels of education, the formula of achieving success remains the same: learners' motivation seems to be the crucial factor in this

process. Therefore, if we want to have an effective education in Albanian universities we must put lots of efforts in increasing students' motivation and participation in the classroom. This will lead them toward critical thinking and an active absorption of the knowledge. For this reason, the present study represents an attempt toward a general understand of Albanian students' level of motivation in second language classroom and the way teaching methods promotes their motivation.

Research Methodology

Participants in the study-‘Aleksandër Moisiu’ University was established in 2005. It is located in Durrës and offers bachelor’s, and master’s degree programs in business, education, political jurisprudence, professional studies, information technology and integrated studies with practice. Students of the first year study English for Specific Purposes 3 hours a week or 45 hours for a course. Being part of a university where Albanian is used for teaching, students have limited opportunity to practice English outside the institution.

The research was conducted during the first semester, academic year 2017-2018. In order to investigate the factors that motivate students' motivation to perform tasks well in English classroom, 60 undergraduate students from three different programs participated in the study. They provided us with useful information in regard to the level of their motivation to learn English and gave important suggestion on how to enhance their language learning achievement.

TABLE 1. CHARACTERISTICS OF THE PARTICIPANTS		
Gender	Male	Female
Number	23	37
Percent (%)	38	62
Age	18-19	19-20
Percent (%)	83	17
Level of English	Intermediate	
Source:	Own	

Table 1 shows that the age of the participants varied from 18-20. This is the usual age range for the students of the first year in bachelor programs.

Objectives of the study- For many years, the final exam results have shown that first year undergraduate students' progress in English is not very satisfactory. The same is true for their participation in English course. These findings were an indicator that led us toward the investigation of students' lack of motivation. Between the two types of motivation: instrumental and integrative where integrative motivation is associated with the person's intention to become part of the community that speaks that language whereas instrumental motivation is associated with practical values such as career, business opportunities, course exams etc we decided to investigate only the instrumental motivation.

In addition, the present study aims at considering the role of the teacher and the teaching methodology on students' motivation. Its objectives are to find the answer for the following question:

1- What is the level of instrumental motivation of the first year undergraduate students at ‘Aleksandăr Moisiu’ University in English course?

2- How does the teacher attitude influence students’ motivation?

Research instrument- Data for this study is obtained through a questionnaire administrated in a total number of 60 students. Identifying the level of motivation and the factors influencing it, will help us formulate measures for the improvement of students’ motivation in English classroom.

The questionnaire consists of 20 statements which are divided into two parts. The first part of the questionnaire (ten statements) measures the level of students’ instrumental motivation in the English course, whereas the second part (10 statements) focuses on the relation between teacher’s methodology and students’ motivation.

Data collection- The questionnaire was distributed to 60 students. The questionnaire was completed during their time at university. Clear instructions and explanations were given to students in class before the completion of the questionnaire.

Data Analysis

The data collected in the study was analyzed using the Statistical Package for Social Sciences (SPSS) Version 20 for frequency distribution. For both the motivation part and students’ attitude the Score range was divided according to five Likert Scale levels as stated in Table 2 and Table 3.

TABLE 2. SCORE RANGE FOR INSTRUMENTAL MOTIVATION			
Scale	Scale range	Score	Mean Range
1	Agree	High motivation	3.68-5.00
2	Moderate	Moderate motivation	2.34-3.67
3	Disagree	Low motivation	1.00-2.33

Source: Own

TABLE 3. SCORE RANGE FOR TEACHERS’ INFLUENCE			
Scale	Scale range	Score	Mean score
1	Strongly agree	Highest	4.01-5.0
2	Agree	High	3.1-4.0
3	Moderate	Moderate	2.1-3.0
4	Disagree	Low	1.0-2.0
5	Strongly disagree	Lowest	0.01-1.0

Source:Own

The following two tables (Table 4 and 5) outlines the 20 statements and the mean scores achieved after using descriptive statistics of mean scores and standard deviation and their corresponding motivation levels, which serves as the basis for the interpretation.

TABLE 4. MEAN AND STANDARD DEVIATION OF INSTRUMENTAL MOTIVATION

Statement	Mean	S.D
1-I read other English books that are not obligatory for the English course.	3.21	1.18
2-I learn English with the purpose of having better opportunities to find a good job in my profession.	4.10	1.02
3-English can help me become successful in life.	4.86	0.50
4-I study English not only for class assignment and final exam but other purposes.	4.23	0.75
5-English is an international language which can help me become a skillful and knowledgeable person.	4.83	0.64
6-It is important for educated people to know English since most of the information is in English.	4.83	0.72
7- Knowing English is important when you travel abroad.	4.23	0.73
8-I learn English so that other people (friends, family etc) will respect me better.	4.56	0.49
9- Knowing English is a tool to find a better job or study abroad.	4.45	0.61
10-Being proficient in English can lead to better achievements in life.	4.20	0.76
Total	4.35	

Source: Own

Contrary to our prediction, Table 4 shows that Albanian students have a high level of instrumental motivation. The average mean score in the table is 4.35. Statement number 3 '*English can help me become successful in life.*', statement number 5 '*English is an international language which can help me become a skillful and knowledgeable person.*' and statement number 6 '*It is important for educated people to know English since most of the information is in English.*' have the highest mean (mean3= 4.86; mean5, mean6=4.83). The lowest mean score is statement number 1 '*I read other English books that are not obligatory for the English course.*' (m=3.21). This means that Albanian students are moderately motivated to read books in English beyond class requirements. In general, the mean score of instrumental motivation shows that motivation to learn English as second language is high in Albanian undergraduate students.

TABLE 5. PERCENTAGE, MEAN AND S.DEVIATION OF TEACHER'S INFLUENCE ON STUDENTS' MOTIVATION

Statement	Distribution on responses (%)					Mean	S.D
	SA	A	M	D	SD		
1-I like the way classes are taught.	.0	8.3	45.0	41.7	5.0	3.40	0.72
2-In addition to textbook I would have preferred that in English classes are used other teaching aids such as slides, videos & ...	18.1	54.5	19.1	8.3	.0	3.92	0.83
3-The teacher explain the lesson in an enjoyable manner with different activities.	13.3	43.3	25.0	18.3	.0	3.53	0.92
4- In English classes, I feel better when the teacher shows cooperative intention to help me.	22.0	46.7	21.3	10.0	.0	3.85	0.92
5-I like it when my teacher encourages me to speak rather than to write.	16.7	38.3	36.7	8.3	.0	3.63	0.86
6-I enjoy activities that require group work and I like to participate in them.	10.5	37.7	36.8	12.0	3.0	3.52	0.76
7-I like the structure of the final exam and the way it is organized.	1.3	16.8	35.4	37.7	8.8	2.60	0.90
8-I think I have taken control of my learning.	3.6	24.8	54.8	13.0	3.8	2.70	.75
9-I would like to use computers and mobile phones more often in English classes.	20.0	46.7	25.0	8.3	.0	3.78	0.86
10-I think English course meet my needs.	1.5	28.1	43.8	26.3	0.3	2.82	0.78
Total						3.37	

Source: Own

Findings shown in Table 5 indicate that teachers do have an important role in motivating students in learning English as a second language. Although in general terms, Albanian students like the way English classes are taught (statement 1 '*I like the way classes are taught*' mean=3.40) they show disapproval on same specific area. What Albanian students appreciate the most is the help provided by their teacher ('*In*

English classes, I feel better when the teacher shows cooperative intention to help me.' mean=3.85), which is consistent with the findings reported in literature (Lila 2016). Also, they prefer speaking activities over written activities, which means that writing is a difficult skill to acquire even in the second language ("I like it when my teacher encourages me to speak rather than to write." Mean=3.63). However, statement 7 (mean=2.60) 'I like the structure of the final exam and the way it is organized' and statement 8 (mean=2.70) 'I think I have taken control of my learning' show that Albanian students are not satisfied with the way their knowledge are tested in Albanian universities. Neither do they believe that English course meets their needs which suggest for an immediate intervention in English curriculum (statement 10 'I think English course meet my needs' mean=2.82).

The rest of the findings suggest that Albanian students have a high appreciation of active and modern techniques in comparison to the traditional methods used in English course which are mainly based on the use of the textbooks. They have a high appreciation of teaching techniques that make use of electronic technology such as projectors, computers, etc (statement 2 'In addition to textbook I would have preferred that in English classes are used other teaching aids such as slides, videos & ...' mean=3.92 and statement 9 'I would like to use computers and mobile phones more often in English classes' mean=3.78). Furthermore, group discussion is also satisfying for the Albanian students 'I enjoy activities that require group work and I like to participate in them' (mean=3.53) although at times the large number of students per class makes group work almost impossible to be supervised by the professor.

Conclusion

The present study was conducted with the purpose of providing some insights into the level of instrumental motivation at undergraduate students studying 'English for Specific Purposes' at 'Aleksandër Moisiu' University in Durrës. In addition, the way teaching methodology influences their participation in second language class was considered. Even though the findings from the study do not represent all universities in Albania, we are confident that the results may be of some value to Albanian researchers and professors who are concerned with teaching of second language to undergraduate students.

Findings from this study reveal that Albanian students are highly motivated to learn English as a second language since they consider English a powerful tool to help them enter the labor market successfully and build a great professional career. Thus the first question of this research is answered positively. However, another study is required to compare instrumental and integrative motivations in order for the university lecturers to understand whether the same trend is true for integrative motivation so that they consider other strategies to improve students proficiency in second language.

In addition, the study reports that Albanian students' motivation is influenced by what happens in the classroom. Findings from the study suggest that teacher plays a crucial role in promoting students motivation. Unfortunately, English course do not satisfy students' expectations which asks for some

immediate changes in its organization. This means that English teachers should increase their efforts to adapt various methodologies and techniques of teaching to meet students' needs and requirements. The study suggests that alternative ways of testing students' knowledge should be incorporated in the process. Also, textbooks should be chosen more carefully so that they capture the interest of students while giving them the opportunity to take control over their learning. The use of new technology should be appreciated over the old fashion way of teaching through textbooks. Finally, since students appreciate speaking activities over writing more interactive extra-curricular activities between students and English professors should be introduced in curriculum.

To sum up, students' questionnaire shows that Albanian students are highly motivated to learn English and appreciate active methods of teaching over the traditional ones. This means that English teachers should find a balance between the use of traditional and modern methods so that students increase their levels of willingness to learn. However, the limitation of participants to one university do not allow us to come to the conclusion that all Albanian students are instrumentally motivated or that there is a lack of use of technology in teaching English. Thus, more research in this area is needed.

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Key words: Smart board, French language, Albania

Abstract: This study explores the impact of using technology in teaching French language in the Albanian context. As in many other aspects, technology has become an important component even in education. Televisions, videos, overhead projectors, CD players, computers, smart boards etc are only a few of all the instructional aids used in classes of foreign languages throughout the world. However, today we will focus only on smart board. More specifically, we will investigate the teachers' perceptions concerning the role of smart board in various aspects of the lesson such as: instructions, motivation, teacher's attitudes and language skills. Even though smart boards are not very widespread in Albanian schools, it is an initiative worth trying.

Furthermore, we will concentrate on its advantages and disadvantages as well as the way it facilitates the teaching process. The data was collected by means of a Likert-type questionnaire which was administered to French teachers and quantitative techniques were used in order to analyze it. The results of the study indicate that teachers are in favour of smart board use for various reasons. With the use of smart board they had noticed a certain improvement in students' interest, students' attention, acquisition of vocabulary etc.

Introduction

Technological development has brought about drastic changes in every sphere of life, facilitating the life of individuals in various respects, creating more opportunities concerning work, education, entertainment etc as well as introducing new ways of facing the challenges of today's society. These changes have deeply influenced even the techniques and methods of teaching and learning foreign languages. Nowadays learners are more acquainted with technology compared to the previous generation. Furthermore, many of them spend their free time with I pads, Tablets and other inventions that when technology is introduced in class they know almost unconsciously how to use it. Many school all around the world use various forms of technology, however, today we will focus on the use of a single one, that of smart board also known as interactive whiteboards. According to Yáñez and Coyle (2011) there has also been an ever increasing interest in utilizing interactive whiteboards (IWB) in classrooms as this technology is perceived as combining all pre-existing instructional aids such as chalkboard, whiteboard, television, video, overhead projector, CD player, and computer. This view is also supported by Yang, Wang & Kao (2012) who believe that using traditional blackboards as teaching media is no longer suitable for children growing up with computer. Gertner (2011) emphasizes that the internet has paved a path for the transmission of ideas and information and since the innovation of computers, people have been able to acquire information through the internet, online newspapers, online articles, and even online textbooks.

Many European countries have started to invest in supplying schools with this technology, due to the fact that most of the research in the field has indicated that it has proved beneficial for both students and teachers, however in Albania we are somehow lacking behind in this respect. Public schools do not have IWB incorporated in the classes. They are mostly used by private schools and private centers of foreign languages. For this reason, this study was conducted in a private institution of French language namely

“Alliance Française” in Tirana. We were interested to investigate the impact that IWB have on the teaching of French language and the way the teachers themselves viewed the role of IWB in different stages of the lesson.

Literature review

We are all acquainted with E-learning and we have to admit that it has many faces in class; Interactive Whiteboard is just one of them. The appearance of interactive whiteboards in schools has been accompanied by research that attempts to analyze their effects on teaching and learning processes. (Yanez & Coyle, 2011, p 446). Most of the studies emphasize the fact that utilizing IWB in teaching languages has had positive effect in students’ motivation, interaction, concentration, participation as well as in instruction. According to Hall et al (2005) with the use of technology, teachers gradually shift from ‘traditional’ way of instructing and adapt an interactive teaching. This is very important bearing in mind that learning a foreign language is not an easy process. Many studies have reported that the level of integration of the IWB use on lessons is based on teacher’s individual pedagogical approach or teaching style. However, a number of authors have found that teachers’ pedagogical approaches when using an IWB were consistent with the approaches they used when teaching without technology (Bennett & Lockyer, (2008). On the other hand, Hall et al (2013) insists that those teachers who have always provided multiple learning strategies and engaging hands-on learning will likely continue to do so with an IWB, and those that are more lecture-based aren’t likely to stray too far from familiar teaching methods. However, Sinclair (2009) is of the opinion that whether technology is beneficial it is dependent upon the knowledge and competency level of teachers. This view is also supported by Fulton, Glenn & Valdez (2004) who believe that the success or failure of institutions integrating techniques depends largely on the teachers’ perceptions of technology, and their willingness to implement it in their teaching.

The research is divided concerning the impact of IWB in the class since the studies are sometimes controversial in this respect. Various studies have shown that use of IWBs improves learning processes, specifically where the integration between the teacher’s instruction style and the IWBs’ potential enables meaningful instruction (Betcher and Lee 2009). In the same line is even the study of Smith et al (2006) where it is stated that student engagement behaviors increased significantly when IWB was used for instructional purposes. IWBs play a vital role in stimulating student interactivity in classroom instruction. The study of Manny-Ikan et al. (2011) supports this view because it shows that the use of IWB as an instructional tool has a beneficial effect on student engagement in classroom lessons and led to improved student behavior. Teachers and students believe that IWB had a high impact on revitalizing the classroom.

A number of researches indicate that the use of the IWB can have an influential effect upon students’ learning process, leading to higher levels of students’ attention (Kent 2003). Reardon (2002, 28) believes that the reason “is that the IWB fit both natures of students because “with the use of IWBs, teachers can

develop many creative ways to capture students' attention motivation and imagination". He is not the only one, since many other researchers have found similar results. We can mention here: Bacon, (2011) who believes that IWB affects learning in several ways, including raising the level of students' engagement in a classroom, motivating students and promoting enthusiasm for learning. According to Smith, Hardman and Higgins (2006) earlier research literature on the use of IWB's in both K-12 and higher education shows promising results, where several studies indicated that the use of IWB increases enjoyment, engagement, motivation, and learning gains for all ages and across all areas of the curriculum. In other words, technologies have the potential to revolutionize the teaching and learning process, offering students opportunities to learn in new ways (Crystal 2001). Glover et al (2007) cited the benefits of the smart board for scaffolding different learning styles through which many diversity issues can be dealt with. Interactive Whiteboards are compelling enough to challenge student's preferred technologies (e.g, game devices, and accessibility to Internet sites), promoting students' computer skills, supporting their focus on task, uplifting enthusiasm and attention in a multi-sensory and different way and giving extra motivation to attend class as they are "emotionally involved in the learning process" (Johnson 2004). Al-Saleem (2012) is of the opinion that "An Interactive White Board supports the teaching process of foreign languages in three main ways: interaction and conversation in the classroom; presentation of new cultural and linguistic elements; and oral skills." Gerard and Widener, (1999) had already found out that "the Interactive White Board supports interaction and conversation in the classroom". Glover et al (2005) added that the ability derived from the technology enables the learner to learn more quickly and effectively, it also assists teachers to bring back mandatory creative autonomy. In this respect, Mercer (2007) indicates that the IWB can serve as an effective tool to encourage interaction between the students and the learning material, using teaching methods that include presentation of material in various ways. An important study was that of Gray et al (2005) which demonstrates that the IWB provides teachers a variety of facilitated accessible ways of getting focus on grammatical features and that the use of the IWB positively affects students' memorization and writing skills.

Somekh et al., (2006) bring this point of view further by stating that learning via the IWB is a modern methodology that allows teachers to bring various perspectives from the outside world into the classroom, through the formation of an authentic and more relevant connection to their students. Coyle, Yañez and Verdú (2010) also support this view by admitting that IWB provides L2 teachers with many opportunities to teach in novel, exciting and promising ways that go far beyond the possibilities of traditional boards. Allen (2010) summarizes that the use of IWBs enhances different learning styles; supports retention/recall; develops planning, presentation, and instruction. The attempt of exploring the IWB software features and multimedia resources attempts to improve students' motivation, attention and interaction to enhance their retention.

Despite the numerous advantages of using IWB in L2 classrooms, there seem to be also some challenges associated to its use. Firstly, many studies (Levy 2002; Aytaç 2013) raise the problem of teachers' insufficient IWB knowledge, experiences and skills. Beginners use IWBs as a traditional blackboard, while advanced users use IWBs to construct meaning using interactive and fluid lesson strategies. A problem evident even in Schmid and Schimmack (2010), who believe that a major impediment to the utilization of technology such as IWBs in language classrooms is the fact that the language teachers are not sufficiently trained to integrate the technology into their language teaching and learning activities. Furthermore, Levy (2002) states that teachers who have no or little knowledge of ICT should receive special training in the use of IWBs individually, in particular, because some teachers may have barriers regarding the use of technology and need more time and practice to be confident in using the technology in class. Sharpe (2004) found similar results in his study. Seventy seven percent of teachers who had prior experience with technology showed positive attitudes toward it. This number was thirty eight percent among those who didn't have prior experience with it. The results also suggested that only less than four percent of teachers were interested in using technology in their free time. On the other hand, Hall and Higgins (2005) focused on the students' attitudes toward using the smart board. They found out that one-third of the students reported issues with their teachers' skills while using the smart board. They also noted that not all the lessons had given them opportunity to interact with the smart board. Also, the students had negative attitudes toward the smart board because it caused delays and disruptions. According to Essig (2011, 41) "Making the lessons more placement and enjoyable requires a good trainee teacher that has a strong professional development program concentrates on changing teacher discourse. Otherwise the result will be very frustrating."

Other challenges were related to technical problems encountered in class, lack of time to prepare lessons etc. A study of Hall and Higgins (2005) revealed that students' criticisms regarding the use of the IWBs had to do with technical problems, that it is difficult to see the boards from a distance, and that the teachers are not skilled enough in their use of the IWB. Hunt's (2005) study showed that browsing information for teaching in the class using IWB while delivering lesson seems an inappropriate way which will result in confusing both students and teachers and losing class time. In a study with 35 elementary teachers of Miller and Glover (2002), teachers reported that they did not have sufficient time to design classroom lessons and materials to help them successfully use IWBs in teaching. Furthermore, teachers mentioned the difficulty of not having a technical consultant available to help with their immediate needs in solving technical problems when using IWBs in their classroom. Even Schmid (2008) points out the fact that it takes time to prepare classroom lessons using IWB. He also underlines that another difficulty teachers faced in using IWBs was in combining the use of this innovative technology tool with their

existing teaching approaches. According to Miller and Glover (2002) teachers noted that they needed considerably more time to prepare for IWB lessons than for regular lessons.

Methodology Subjects

The study was conducted at the private institution of French language “Alliance Française”. The subjects of the study consisted of 10 French teachers who taught different levels of French to groups of students using IWB. More specifically, the sample of the study consisted of teachers who were chosen randomly. Their participation in the survey was anonymous and voluntary. All the teachers were female. The study was conducted in April 2018. It was noticed that the subjects demonstrated a positive attitude towards the use of IWB, which was also evident in the fact that none of them refused to take part in the study.

Instruments

The instrument used in this case was a questionnaire that consisted of two main parts. The first one included background information about the teachers involved in the study such as: their age-group, years of teaching French language, time of using IWB in the teaching process, frequency of using IWB, way of learning about IWB etc. The second part of the questionnaire contained three blocks of questions. The first was “Teachers’ perceptions concerning teaching with IWB”, the second was “Teachers’ attitude to IWB” and the third “The motivating effects of using IWB in class”. The Likert scale was used for all of them (ranging from ‘strongly disagree’ to ‘strongly agree’). We used quantitative methods to analyze the data.

Research questions

The research questions that we aimed at answering in our study are as follows:

Which aspects of the lesson do the teachers use IWB for?

What are the teachers’ perceptions on the use of IWB?

What is their attitude to IWB?

Is it motivating for teachers to use IWB in the lesson?

Data Analysis

First of all we wanted to find out what was the teachers experience in the “Alliance Française” so that we could see if there was any connection between teachers experience and the frequency of using IWB in the lesson. The survey indicated that the experience varied from less than 1 year (10%) to 5-10 years (20%) and more than 10 years (70%). What we see is that the majority of the teachers that were surveyed had more than 10 years of experience in teaching French.

Concerning the age of the teachers, we made a division in age groups and the results are as follows: 20% belonged to the age group 23 -33 years old, 60% to the age group 34 - 44 and 20% to the age group 45-55 years old. The majority of the teachers is between 34 - 44 years old.

The teachers were also asked about the frequency of using IWB during the lesson and the results were very interesting. 70% of them used IWB all the time and only 30% admitted using it often during the lesson. The findings are presented in Figure.3.

The teachers were asked how they learned to use IWB and the answers were varied. However it is important to emphasize that 70% of them reported training as a way of learning about IWB. Other options referred were: colleagues, intuition, other. The findings are presented in Table. 1

TABLE 1 USE OF IWB

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid training	7	70.0	70.0	70.0
colleagues	1	10.0	10.0	80.0
intuition	1	10.0	10.0	90.0
other	1	10.0	10.0	100.0
Total	10	100.0	100.0	

Source: Own

Now we can proceed to the first research question, which is related to the aspects of the lessons teachers used IWB for. The analysis of the data revealed that there were various aspects of the lesson that were taught by using IWB. More specifically, 80% of the teachers reported using IWB for Grammar and Listening, 70% for Reading and Practice, 40% for students Presentations and Tests, 20% for Speaking and only 10% for Writing. The findings are presented in Table 2.

TABLE 2 FREQUENCY OF USE

Aspects of the lessons ^a	Responses		Percent of Cases
	N	Percent	
practice	7	15.9%	70.0%
lexis	3	6.8%	30.0%
grammar	8	18.2%	80.0%
listening	8	18.2%	80.0%
presentations	4	9.1%	40.0%
reading	7	15.9%	70.0%
writing	1	2.3%	10.0%
tests	4	9.1%	40.0%
speaking	2	4.5%	20.0%
Total	44	100.0%	440.0%

Source: Own

The next research question is “What are the teachers’ perceptions on the use of IWB?

For this block of questions the Likert scale was used, with values ranging from 1- strongly disagree to 5- strongly agree. The statements with the asterisk are reverse coded items. The results of descriptive analyses revealed good consistency in the mean scores of most of the items. The data analysis reveals that generally teachers perceive the use of IWB as beneficial in various aspects of French teaching, As we can notice from the mean values presented in Table 3, statement 2 (When I work with IWB I spend more time to prepare materials. – reversely coded) and statement 10 (I believe that IWB is a useful technology that every teacher should learn) received the highest mean scores, respectively ($M= 4.90$) and ($M= 4.80$) whereas statement 12 (The use of IWB limits students' movement in class*- reversely coded) received the lowest mean score ($M=3.20$). Apparently, the teachers perceive IWB more beneficial with respect to the amount of time they spend on preparing teaching material as well as an asset that every teacher should be equipped with. Whereas concerning statement 12 it seems that they are indecisive on the effect of IWB on students' movement in class.

TABLE 3 DESCRIPTIVE STATISTICS 1

	N	Mean	Std. Deviation
1. The use of IWB resources reduces the time I spend writing on the board	10	4.100	1.2867
2. When I work with IWB I spend more time to prepare materials.*	10	4.900	.3162
3. IWB use facilitates the access to different resources and student presentations	10	4.600	.9661
4. IWB are beneficial for saving and printing materials generated during the lesson	10	3.800	1.2293
5. I can explain more effectively by using IWB	10	3.900	1.1005
6. With the help of IWB I can manage the class better	10	3.600	.8433
7. I think IWB can be a good supplement to support the teaching of a foreign language	10	4.500	.9718
8. The use of IWB makes it easier for a teacher to review, re-explain and summarize the subject.	10	3.900	1.1972
9. The use of IWB makes lessons more interactive	10	4.500	.7071
10. I believe that IWB is a useful technology that every teacher should learn	10	4.800	.4216
11. The use of IWB requires too much time and effort for material development*	10	4.2000	1.22927
12. The use of IWB limits students' movement in class*	10	3.2000	.91894
Valid N (listwise)	10		

Source: Own

Following we will attempt to give an answer to the third research question which is “**What is the teachers' attitude to IWB?**” Even for this group of questions was used the Likert scale, with values ranging from 1- strongly disagree to 5- strongly agree. The statements with the asterisk are reverse coded items. Based on the mean scores, we can say that the results indicate an excellent consistency of the teachers' answers. What attracts the attention almost immediately is statement 1 (I have a negative attitude towards the use of IWB in language instruction. –inversely coded) with the highest mean score ($M=5.00$) for which teachers strongly agree unanimously, despite differences in age group, teaching experience or

frequency of IWB use. The least rated are statements 6 (There is no difference between the use of traditional board and IWB concerning techniques/methods of teaching*), statement 7 (V I am not the type to do well with IWB-based applications.*) and statement 8 (What I do in class with traditional methods is sufficient for teaching the FL*) with a mean score of ($M= 4.20$). All in all, we could say that teachers have a very positive attitude towards the use of IWB in the class. The findings are presented in Table 4.

TABLE 4 DESCRIPTIVE STATISTICS 2

	N	Mean	Std. Deviation
1. I have a negative attitude towards the use of IWB in language instruction.*	10	5.0000	.00000
2. I have a positive attitude towards the use of IWB in language instruction	10	4.900	.3162
3. I feel uncomfortable using IWB in front of my students.*	10	4.8000	.42164
4. I like using IWB technology in teaching the foreign language.	10	4.700	.4830
5. I do not think my students are ready for this technology.*	10	4.5000	.97183
6. There is no difference between the use of traditional board and IWB concerning techniques/methods of teaching*	10	4.2000	1.13529
7. I am not the type to do well with IWB-based applications.*	10	4.2000	1.03280
8. What I do in class with traditional methods is sufficient for teaching the FL*	10	4.2000	1.03280
Valid N (listwise)	10		

Source: Own

The last research question is: "Is it motivating for teachers to use IWB in the lesson?"

Likert-type scale, (with values ranging from 1- strongly disagree to 5- strongly agree) was used even for this group of questions. The analysis of the data (namely the mean scores for this category) shows that the majority of teachers consider the use of IWB as a motivating element in the lesson. Statement 1 (I think IWB makes learning more enjoyable and more interesting.) was the highest rated ($M=4.8$) which means that the teachers strongly agreed to it. The lowest rated item was statement 8 (For me, it is very important to learn how to use IWB) with a mean score ($M=3.80$). The findings are presented in Table

TABLE 5 DESCRIPTIVE STATISTICS

	N	Mean	Std. Deviation
1. I think IWB makes learning more enjoyable and more interesting.	10	4.800	.4216
2. I am interested in using this technology in the lesson	10	4.500	.7071
3. I think IWB increases the interaction and participation of students.	10	4.500	.7071
4. I feel comfortable when I use IWB in class	10	4.400	.5164
5. I believe that the use of IWB has a positive effect on the instructions given to students	10	4.300	.4830
6. I think my students are more motivated when I use an IWB in my lessons.	10	4.300	.8233
7. I can keep my students' attention longer with the help of IWB technology.	10	4.200	1.3984
8. I feel more prepared to teach due to the use of IWB in the lesson	10	4.100	.8756
9. The use of IWB makes me more active in the lesson	10	4.000	.8165
10. I have noticed that my motivation is on the rise with the use of IWB	10	3.900	.8756
11. For me, it is very important to learn how to use IWB	10	3.800	1.1353
Valid N (listwise)	10		

Conclusion

After carefully analyzing the questionnaires administered to French teachers at “Alliance Française” with the SPSS program, we reached the following conclusions:

70% of the teachers surveyed had more than 10 years of experience in teaching French.

60 % of them were between 34 and 44 years old.

70% of them admitted using IWB all the time during the lesson.

The majority of the teachers (70%) reported learning about IWB through training sessions.

Concerning the aspects of the lesson where IWB was most used resulted: Grammar and Listening (80%) and Reading and Practice (70%)

Concerning ‘Teachers perceptions about the use of IWB’ it resulted that they perceived this form of technology especially in relation to the amount of time they spend on preparing teaching material. Whereas concerning students movement in class, they were indecisive.

In relation to ‘Teachers’ attitude to IWB’, the answers indicated that they were very positive or had a positive attitude towards the use of IWB in the class as the mean scores showed high consistency.

In relation to the question “Is it motivating for teachers to use IWB in the lesson?”

The analysis indicated that the majority of teachers consider the use of IWB as a motivating element in the lesson especially the fact that IWB makes learning more enjoyable and more interesting.

Limitation of the study

One of the main limitations of this study is related to the fact that in Albania there are not many studies related to the role or function of IWB in the teaching of French language.

Secondly, a larger sample would have provided more specific results. But since we had to do with a private institution it was difficult to get a larger sample that would be representative of the teachers there.

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Learning Analytics

LEARNING ANALYTICS AT UWB – FIRST APPROACH

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Key words: Learning Innovation, Higher Education, Educational Data Mining, Learning Analytics, Student Interaction Analysis, Learning Management System, Prediction Study Success

Abstract: The focus of this paper is the first look and interpretation of learning analytics data from learning management system (LMS) at the University of West Bohemia in Pilsen (UWB). We claim that there are three types of granularity of LMS data. The first type is top-level, which describes approaches and usage of LMS as a whole. The second one is course-level, which deals with the behaviour and activities of all users as a whole on a specific course. And the last user-type, which interprets the activities of users in the course, and looks for common patterns of behaviour.

This paper presents the first two types of granularity, based on real data from the university LMS. We are inspired by many previous studies focusing on learning systems of the LMS that often pay attention especially to academic success prediction or at-risk student identification (e.g. Smith et al. 2012, Jayaprakash et al., 2014, Baker et al., 2015).

These findings form the basis for further research on identifying user behaviour on the course and identifying students at risk of learning failure.

Introduction

At the University of West Bohemia in Pilsen (UWB), we have had a great deal of experience in running the various Learning Management Systems (LMS) over the last two decades. It can be said that Moodle, which had originally “enthusiastically” been running since 2006 (the year of the first course), has won the internal e-learning system battle. In 2010, Moodle became an official part of the university computing environment, and was fully associated with both Single Sign-On and Student Agenda STAG, which included all the students’ learning outcomes.

Currently (May 2018), we have around 1900 courses in Moodle. In order to maintain persistence, LMS does not delete old courses, and the results or assignments of the students may at any time be backward traced. The fact that Moodle at UWB has become an integral part of the teaching is clearly illustrated by the graph of the number of visitors in the last year Figure 1.

FIGURE 1. TOTAL NUMBER OF VISITORS FOR THE YEAR (MAY 2017 – MAY 2018)



Source: Own

From Figure 1 there are also obvious decreases in the activity of users during the main school holidays and during the examination period, respectively just before the beginning of the next semester. Local, regularly recurring drops in attendance correspond to weekends.

Evidence of the steadily increasing popularity of LMS at UWB as a support system for ordinary education also shows visible jumps in the increase in attendance between two semesters, ending in the summer semester of the academic year 2016/2017 (May-June 2017 in the graph) and the winter semester of the academic year 2017/2018 from (from September to December).

The high rate of attendance for e-learning courses generates a large amount of data - logs both in LMS itself, and in the Web server service that provides communication with end users.

For a long time, this information about user behaviour during the learning process and testing has remained untapped, and in fact, only tied up valuable server resources. This has only changed in recent years, with the development of Educational Data Mining (EDM) and Learning Analytics (LA). EDM was on the rise in 2008-2009 (Romero, Ventura 2013), although its origins can be dated back to 2005 (Romero, Ventura 2007). The younger LA field can be dated back to 2010-2011 (Ferguson 2012; Juhaňák Zounek,2016).

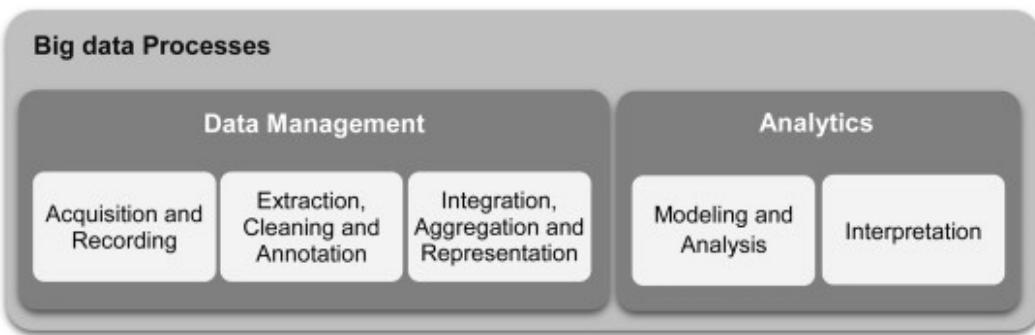
Both EDM and LA research fields differ in many respects, but what they have in common is that they seek to maximize information and context from the data generated and stored within LMS itself. To this end, they use various analytical and data mining methods and procedures to gain important information and knowledge about how students behave, learn, perform tasks, and take tests (Juhaňák et al., 2017).

(Siemens et al., 2011) define the field of LA as:

“Learning analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs. Learning analytics are largely concerned with improving learner success.”

The same source states that LA is a special representation of the “Big Data” application and the analysis of education. Activities related to Big Data are generally divided into two main parts: data management and analysis itself (Gandomi, Haider 2015). Data management is further subdivided into data acquisition, logging, data extraction, and data purification, and their subsequent integration, aggregation, and representation. With the data thus obtained, modelling, analysis, and subsequent interpretation of the results are carried out - see Figure 2.

FIGURE 2. BIG DATA PROCESS



Source: Gandomi, Haider, 2015

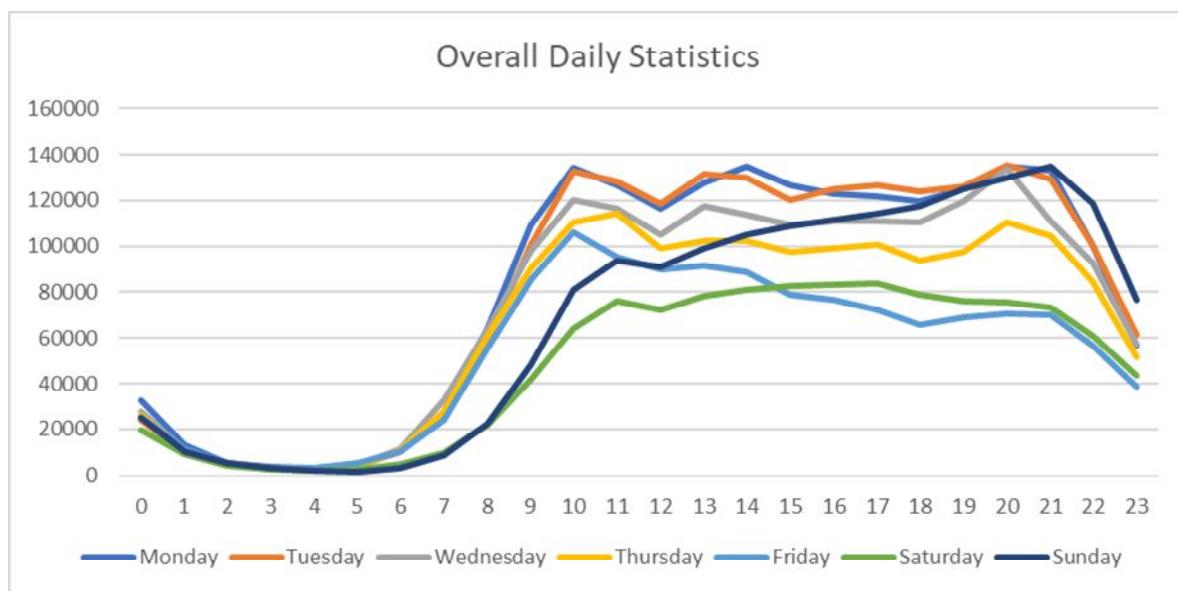
Within the context of increasing needs for quality and evaluation of teaching at UWB, we have primarily focused on eLearning, specifically for reasons previously described - we already own a huge amount of data in LMS and web server logs that can be easily used for EDM research, respectively for LA. This article describes the first experience of UWB in LA, and as such, can be used as a starting point for other interested parties and organizations.

General overview of the data

In our LMS, we have collected data for several years back, and this data can immediately be used to create overall statistics. The first view of this data may be from Figure 1 above, which shows the rate of traffic for the last calendar year.

Another interesting statistic from the overall data is the total number of visitors for each individual day of the week - see Figure 3 - Overall Daily Statistics.

FIGURE 3. OVERALL DAILY STATISTICS



Source: Own

Already in this rough overview of the overall data, some interesting facts can be drawn upon. First of all, the chart's progress for each day of the week is more or less similar, only differing in absolute numbers of accesses. The minimal, almost zero-hour operation was not surprising for us, and only confirmed the correct decision to make regular backups of the LMS system at 4:00 each morning. No surprise was the 2-hour delay in traffic growth during the weekend.

More surprising was the discovery that the students' overall learning habits between 10:00 and 21:00 of all days' operation was evenly stable. A small drop between 11:00 and 12:00 on all days corresponds to lunch times. Another surprise seen in the graph is the all-day slow increase in Sunday traffic, which culminates around the 21.00, hour and equals business hours on business days. Sunday traffic between 21:00 and 23:00, even in total values, exceeds traffic on other days.

Course statistics

In the case of UWB, this is the first piece of work in LA from the data of our long-running Moodle LMS. The first step is therefore the need to define a framework concept and an initial strategy. Our first step has been minimalistically defined following mature thought as follows:

- We select only one course to process,
- we have complete logs of student actions and/or activities on the course,
- the course must have a larger number of students, ideally more than 100, in order to create a statistically significant sample,
- the course must have the tasks evaluated by a teacher (feedback),
- the course must be repeated every academic year, so that we can compare the results and possibly predict students at risk of learning failure on the basis of earlier or previous data,
- know the result of the subject study - i.e. either a credit with a completed/incomplete assessment, or a mark/grade for the subject 1 (best), 2, 3, or 4 (did not fulfil the subject).

From the shortlist, we chose the course "Information Technology in Teaching", which was completed by a credit, taught by the Department of Computer Sciences and Didactic Technology at the Faculty of Education, UWB. In the academic year 2016/2017, a total of 293 students were enrolled, according to the study agenda. Of these, there were a total of 51 combined study and 242 full-time students.

Since it is possible to assume that the behaviour of students of the faculty and the combined form of study will be different, students of the combined form did not use the chosen course, so the further processing only concerns the 242 full-time students.

An interesting and unexpected bonus of the chosen course was the fact that students were not enrolled in the course through the functional Moodle-STAG web service, which normally gives access to all

students who have a subject under the study agenda. At the first attendance meeting with the students of the subject, the teacher published an access password for students enrolling in the course themselves. Therefore, we gained another possible indicator for student behaviour.

Only 227 students enrolled in the chosen course. The difference between the 242 students enrolled in the STAG study programme and the 227 enrolled in the course is due to students who stopped studying for various reasons. The successful completion of the course was achieved by 199 students. Unfortunately, 28 students failed this subject.

Another monitored indicator was the number of sessions attended in the Moodle system, according to the individual students enrolled in the course. In total, 35,359 visits by students to this course were registered. Table 1 clearly shows that successful students returned to the course more often than failed students.

TABLE 1 COURSE VISITS

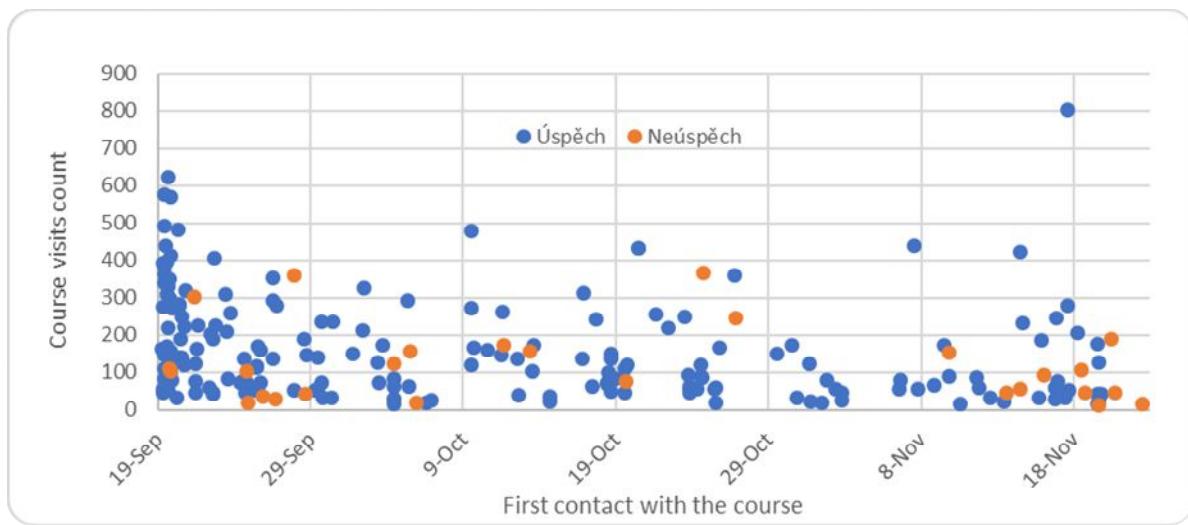
	199 successful students	28 unsuccessful students
Number of visits	32174	3185
Average	161.68	113.75

Source: Own

Since we knew about the success rate for each individual student, the number of visits, and the date of the first contact with the course, we tried to show these figures in the chart, and see if some basic characteristics would be evident - see Figure 4 - Students on the course. The assumption that successful students start studying earlier, and failed students start studying later was not clearly proven. Students spread their first contact with the course throughout the semester. However, in the beginning, there is a predominance of successful students who earned credits. Also, at the end, a relatively frequent occurrence of unsuccessful students can be observed.

It's also worth mentioning that students who enrolled in the course for the first time on 17th November 2016 - just before the credit test on 21st November 2016, achieved the highest attendance rate - 802 course displays. You can find this in the graph as a point on the right, at the top.

FIGURE 4. STUDENTS ON COURSE



Source: Own

Conclusion and future research

Our organization has long endeavoured to provide quality education in order to prepare students for their upcoming professional lives to the fullest extent possible. Every year, the Commission for Quality at UWB processes student feedback on the subjects taught. They anonymously, in an easy-to-read form, "mark", for example, the clarity of the interpretation, the benefit of the subject for the chosen field, its usefulness, and experience gained during the practical exercises. However, filling in the questionnaire is not an obligation, so the feedback depends on the goodwill of the evaluators, who may respond randomly, or even with the aim of damaging the results of the evaluation of a particular subject. According to the latest statistics from the Quality Commission, only 15-20% of students from all nine faculties of UWB provide any feedback at all.

In the form of LA, we now have another usable metric, based on the behaviour and results of the students' subjects. Metrics are obtained independently of the students', from data stored in the LMS. A metric that cannot be easily underestimated by misleading responses to the questionnaires.

So far we have only dealt with data obtained from one subject. Due to the suitably chosen entry condition - the subject must be taught regularly in subsequent academic years - we will be able to easily compare existing results with new results in the future. Moreover, thanks to the knowledge of the behaviour of unsuccessful students from previous years, we are able, with a certain degree of accuracy, to identify students who are at risk of learning failure in the currently running instance of the same course. The teacher of the subject, respectively the tutor of the course, can use this knowledge to focus more on the group of these "at-risk" students, and try to motivate them to successfully master the subject.

An interesting result could be the comparison of the same subject of full-time students with combined students. We assume that the learning style of both groups will vary greatly. The age group of

undergraduate students is de facto devoted to study, while the second group of students of combined study already performs their chosen profession. In addition, these students have often already established families, and time to study has to be carved out of their very valuable free time or from their time set aside for sleeping.

In the above example, we have tried the methods of obtaining data relevant to one course in LMS. During this first attempt, it took us a long time to untangle some links within the LMS database, which has more than 300 differently interconnected entities. The experience gained can now be used much faster for larger groups of courses that meet the criteria defined above.

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UNDERSTANDING LEARNING IN THE ONLINE ENVIRONMENT USING SELECTED WEB ANALYTICS TOOLS	MICHAL ČERNÝ Faculty of Arts and Faculty of Education Masaryk University, Brno Czech Republic
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Key words: Learning analytics; web analytics; Google Analytics; web courses; heatmaps

Abstract: The paper analyzes the possibilities of using Google Analytics and Smartlook, as two tools for web analytics in the educational context, to point out the possibilities and, on the contrary, the limits of such an approach and its relation to learning analytics as such. Measurement and analysis of web courses brings a number of interesting options, both towards redesign and innovation (data with intervention potential), as well as purely research character.

In the introduction, we focus on the relationship between web analytics and learning analytics. Next, we'll describe Google Analytics in terms of its educational opportunities. This description is related to already existing research papers that deal with this topic. The following is a Smartlook tool that lets you create heatmaps and capture the cursor movement on a web page, which again relates to the ability to analyze student interaction with the learning material.

Using the tools described above, it is not possible to perform the learning analytics as an activity leading to intervention, for example to identify problematic students but rather to find out what users of the course are studying, their technical equipment, to uncover their learning habits and patterns of behavior online environment. These analyzes are illustrated on data from the course taught at the Faculty of Arts of the Masaryk University in Brno - Creative work with information.

Introduction

The use of web analytics today is one of the basic pillars of the broader concept of learning analytics, which we will define below. Google Analytics, but also tools such as Hotjar or Smartlook, New Relic, Live Internet, Yandex. Metrika or WordPress Jetpack, are the basic tools used by almost every web developer. While the classical site is relatively easy to set up the metrics to follow, or the goals we want to achieve, learning analytics is a much more complicated process. While, for example, at e-shop, it will be a metric for the customer's goods and payment path, it will be possible to optimize the site for certain user groups and we will want to achieve higher turnover, so in the case of the learning process, this process is much more demanding. How to determine which student's behavior is effective and which does not? How do you know what the student has learned? Indeed, the answer to the question of what is learning, or how to proceed and what its meaning is, is a question of choosing an educational paradigm. Different will be the answer of the connectivist (Siemens 2005, Kop 2008), constructivist (Hein 1991; Harasim 2012), pragmatic (Jayanti 2009; Tomasello 2000) or phenomenological educator (Fink 1996; Patočka 1996).

The choice of paradigmatic grasp of the educational process, which is a generally underestimated topic, also has an impact on how and what we want to explore in the learning process. The web analytics optics make it obvious that the simplest would be to focus on the behavioral grasp of the learning process. By enabling web analytics tools primarily to monitor student behavior, if we could think of it as a "black box" and reflect the learning process only by behavior (such as moving on a web page, counting clicks, engaging in discussions, etc.), it could be said that web analytics is probably one of the most sophisticated research tools for online education.

Also from a didactic point of view, the behaviorist theory would appear to be very practical. By analyzing instruments that offer a certain anonymous view of students, we can work very well with the analysis of individual materials - again, the manifestations of behavior in interaction with it would be at the heart of such paradigmatic research. In such a thinking framework, whole learning is implemented in one (or more, but a teacher of clearly bounded and "controlled") environments, so deploying a web analytics creates a highly valid model of learning behavior.

At the same time, however, we believe that the behavioralist educational paradigm brings with it a non-trivial number of limits and problems that need to be considered and reflected. There is a reduction of the student to a creature without a social or emotional context, the absence of support for creative and critical thinking, but also an attempt to achieve a high degree of standardization and unification of education, as well as the attempt to build a barrier between the school (or generally the learning process) and the outside world. For these reasons, we consider the behavioralist scheme to be unsustainable, although it may still appear. So, what pedagogical paradigm to choose?

For purely practical reasons, pragmatic pedagogy appears to be a good choice. Already in an paper in the last year of the conference, we showed aspects that lead us to the fact that programmatic pedagogy is an effective tool for online education - from an understandable language through a close relationship to the environment (functions, language, design, appearance, information architecture) to an emphasis on the usefulness and practicality of education. We will also keep the pragmatic research framework here, so Web analytics will not be the only source of information about students, but at the same time it will have some tangible value that can contribute to the overall understanding of the study behavior of the individual.

Defining the concept of learning analytics is not easy, as you can meet different concepts. Generally speaking, the roots of learning analysis can be seen primarily in web analytics (in this regard, we are returning to our fundamental roots in this paper); business intelligence, or follow-up academic analytics; but also of course in the positivist and pragmatic philosophical paradigm; or in the concept (whether medical or pedagogical) of evidence-based science. Furthermore, we could name data mining influence, user modeling and simulation, and many more, whether in terms of information or mathematical concepts. Systematic historical evolution of discipline is captured in his paper: Learning Analytics: The Emergence of a Discipline (2013).

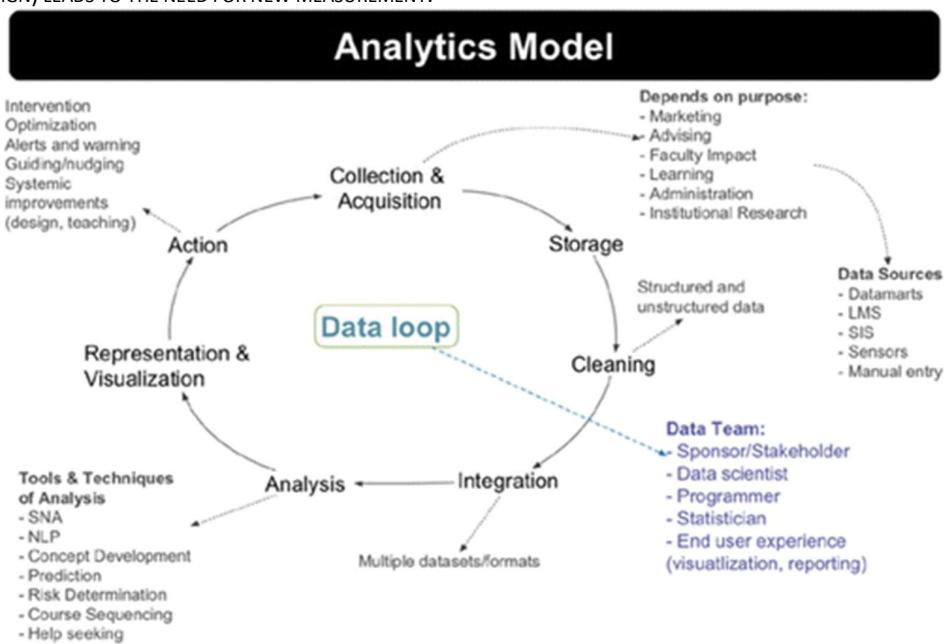
There is a certain dichotomical understanding of learning analytics. The first option is to present an analysis of the educational environment and the processes within it. This concept, ie learning analytics, deals with the measurement, retrieval, analysis and presentation of student data and its context in order to understand and optimize the learning process and the entire educational environment in which education takes place is mainly connected with Siemens. (Long & Siemens 2011) Another option is to

define it more narrowly, as Ferguson (2012) understands it, which understands learning analytics focused only on the online environment.

As we have chosen pragmatic pedagogy for practical reasons, we will also make some simplification here. For the pragmatic educator, the position of Siemens would be better. We believe that such an approach is necessary for a deeper understanding of student behavior. At the core of his research, however, is the analyst working with the online environment, as Ferguson understands. The approach chosen by us, which we will reflect on specific research data, will be just part of a wider research based on mixed design. Analytical data, which are rather quantitative, should be linked to qualitative methods. We have another reason for this, based on qualitative data from analytical tools, it is possible to get a certain picture of student behavior. However, the use of qualitative tools is absolutely necessary to form a model or even theory of learning in the online environment.

Siemens (2013) works with the concept of learning analytics in a cyclical approach, so it applies to models that are perceived as action research in a more general methodology. This process is captured in the following scheme, which is associated with action research that it is associated with an intervention model. These can be directed both to the level of care for problematic or above average students (a certain form of crisis intervention) as well as to course design, environment optimization and other activities. While the question of crisis intervention is problematic from a Google Analytics perspective, the design and optimization of the site is heavily applicable.

PICTURE1: THE SIEMENS ANALYTICS MODEL IS BASED ON THE EXISTENCE OF THE INDIVIDUAL DATA ACQUISITION AND PROCESSING PHASES THAT LEAD TO THE IMPLEMENTATION OF A CERTAIN ACTION. THIS ACTIVITY IS CYCLICAL. EVERY CHANGE (WHETHER PEDAGOGICAL, DIDACTIC, CONTENT OR DESIGN) LEADS TO THE NEED FOR NEW MEASUREMENT.



Source: (Siemens, 2013)

When it comes to defining the area we are exploring, we will focus on web-based courses - these are web-based courses that visitors can navigate and learn from. Such a solution assumes that there is no authentication of the student. It can therefore be a student of a university course (for various reasons we can assume that in our case the vast majority of students) as well as random visitors. The method of moving around on the web, on the one hand, will reflect the student's general habits, but, as it turns out, the motivational dimension will also be very important - "everything must be read in order to succeed in the test." For example, this factor greatly affects the behavior of students on the web.

Our course is a mashup course (Auinger 2009) which combines three backgrounds:

We will work with the university information system to enroll students, submit assignments and feedback. It is also an engraving engraving environment.

The primary communication environment is Facebook, or a group on it. Interactions between students can be measured using common tools (Serrat 2017; Scott 2017; Thirumalai et al. 2017). If we want to more systematically measure sociability in the online environment, we could use this tool.

Educational content itself is based on the site. For web analytics, we can use Google Analytics (we do it, but generally it is also possible to use other tools) and possibly with applications such as Hotjar (Bergs 2017) or Smartlook (this is chosen in our example example, but features are with Hotjar relatively similar).

Research possibilities and its methodological anchoring

At this point, we would like to offer some methodological anchoring of the whole research, describe the research tools and the direction of the data direction. We will be partly confined to the classical learning analytics model because it is more familiar in the literature and in the usual pedagogical discourse and we perceive it as important to draw attention to some possible differences between the data processed by the LMS tools so that we can work with each individual student and between general web analytics that we use in our research.

For our research, we use Google Analytics and Smartlook to retrieve data through Google Tag Manager. While Google Analytics provides information that allows you to describe the entire population and give you insight into the technology used, Smartlook is focused on working with the behavior of individual users on a page, or analyzing user interactions with a particular web site.

Generally, both tools can be used in two separate contexts that work with the same set of data but offer a different approach:

a) It is possible to work with anonymized, non-specific description - to deal with relationships, events and data that tell the general behavior of the population. This is a basic research approach that we will follow more in this text.

b) Both Google Analytics and Smartlook offer the ability to track individual user behavior. Both tools perform its anonymization, which is not text-synchronous but contains time stamps. With these, it is possible to link both research tools to qualitative research methods.

As far as the research sample is concerned, it is possible to work in the field of education with two possible approaches. The first is to work with indexing open web courses in which the research sample is vaguely delimited. In this case, you can use Google Analytics demographic data to identify the place of connection or approximate age. A deeper description of the sample is not easy, but a lot of data can also be considered from an analysis of traffic sources. For example, this method can be used to estimate how many "students" and how many "visitors" are in the population.

The second option that we mostly use is the course in the current run not to index the robots. The result is a virtually perfect sample of users who either study by themselves or have to provide a link. It turns out that this attendance outside the intended sample of "students" is completely negligible. Thanks to this, we can get information about a sample that we can draw from the school information system (so we know, for example, study, year, gender, etc.) and other descriptors that can help interpret the results. It is true that we can not easily link, for example, annual studies with specific user behavior on the page, but we can infer from the data a certain behavior of the entire population.

The data from our research will be presented to the students of the Creative Work with Information (which as of May 7, 2018) had 167 students - 56 in the first year of the bachelor's degree program, 28 in the follow-up Master's degree program, 26 in the second bachelor study program and 25 in the second year follow-up Master's degree program. The rest of the students were in higher grades. The course was attended by 56 men and 113 women. 84 of them studied at the Faculty of Philosophy, 26 at the Faculty of Informatics, 23 at the Faculty of Economics and Administration, the rest, 36 students from other faculties of Masaryk University. These statistics come from the MU information system. According to Google Analytics data (from April 23 to April 6), 108 users aged 18-24 were 71 and 23-34 were 33. Other age groups were not recorded. The woman was 83 and the men 27.

The ethical side of the research is based on the fact that cookies, Google Analytics and Smartlook for web analytics are used on the page. Data from such sources can be perceived as anonymous, however, of course, it may happen that, for example, a user from a specific location (such as a particular state outside of the Czech Republic) will be "revealed" in this way. However, according to our measurements it is a relatively rare phenomenon and it is not really possible to prevent it effectively. In the context of a commonly understood learning analytics, where, for example, in a Moodle (Dimopoulos 2013), the teacher can see in detail the learner's learning behavior, but also, for example, how many hours the system connects to, it can be said that our research is within the framework of learning analytics one of the most sensitive to student privacy. This is also related to the fact that our research does not allow a targeted paternalistically designed intervention towards a

particular person who exhibits specific structures of his learning behavior (for example, late assigning tasks, spending a little time with prescribed activities, etc.).

The two research tools we use for our text are primarily web analytics tools, not learning analysis, which brings about specific problems but also possible new possibilities. We believe that working with data analysis, but also with the metrics and tools that it can use for measuring, offers a non-traditional and, to a certain extent, deepening dimension of studying the behavior of individual participants.

As part of our research, we will combine the data obtained with two measuring tools - Smartlook and Google Analytics (Ledford 2011; Omidvar 2011; Pakkala 2012; Romanowski 2016). Smartlook is the Czech equivalent of Hotjar and allows for two activities that are important to us. The first is to work with records - the application records the user's movement by page and, based on his IP address, he can anonymize it, but at the same time combine it with one unique name. In the system, it is possible to monitor how the visitor's behavior looks or changes over time, whether he or she changes their behavior depending on the duration of the course or the chosen subject, its length, how its behavior changes when interacting with different media, etc. The second feature that Hotjar offers is the creation of heatmap on the website. For example, they allow you to track the places where users clicked or circled around the mouse. It's also possible to see which part of the page users have been browsing or the differences between the phone, tablet, and desktop. Smartlook can therefore be used primarily for qualitative analysis. (Černý 2018)

At this point, we must draw attention to the constraints associated with our economic research capabilities in our sample sample. Heatmap can only be constructed from one thousand visits (multiple visits would require a more expensive version of the app). In practice, however, there is not much distortion because the average attendance is between 800-1100 visits. By taking the first visit, it is possible that the data analyzed by us does not capture those who are working at the last minute, but because of the nature of the analysis it is not a serious problem.

Google Analytics is one of the best known tools for web analytics at all. For most users, it is a free tool that allows you to perform relatively extensive research on the site. From basic information such as the number of visits, the ratio of new and returning visitors, the average time spent on a visit, or on a page, to relatively interesting information such as the location of the connection, the age of the users or the technology used. Interesting information may, for example, include data about the network used. With our university course being studied, it is possible to work specifically with a group of users who study from the university environment and, if appropriate, monitor their differences from those studying elsewhere. This data can be examined on the example of the entire population as well as specific filtering, to the level of individuals who are again anonymized.

Google Analytics has no user limit in our case. Data can be exported to CSV, Google Sheets or XLSX, but the system also supports simple PivotTables. This makes it easy to find basic relationships between the different variables without having to perform more complex statistical operations.

Both measuring codes are embedded in the Umbraco web site (Wahlberg 2011) through the editorial interface. The relevant question is the completeness and reliability of the data. According to the measurement results, but also to the literature, it seems that the data should be quite complete. There are procedures to block both measurement codes, but it can not reasonably be assumed that this would be a phenomenon beyond one or two users. Just because such a procedure is technically quite demanding. Data may show some inconsistency in relation to the person - if the user connects from multiple devices, the system identifies him as more people, making it difficult to better interpret some behavioral patterns or learning habits. More problematic may be the location or network identification if a user is working with a VPN. In this case, both data are distorted. Again, however, we do not expect it to be a massive phenomenon, though probably more likely than a user-side Google Analytics blocking.

Unless otherwise stated, we will be working on data from the Creative Work with Information course which is taught in spring semester 2018 (ie from 10 February to 8 May 2018). We do not intend here to present a research case study, but rather to show on the basis of concrete data how it is possible to answer the questions raised, what data and how it can be interpreted.

Research questions

As has already been outlined in the paper abstract, our main focus will be on the research question: How do students in the online course behave? Based on a paper by Luo (2015), we identified five sub-research questions that we would like to answer:

Who are the course students and what technologies do they use?

How do students interact with the learning material?

Does course design have an impact on how to interact with online learning material?

What are the patterns of student behavior?

What are the strengths and weaknesses of such an analysis?

Our analysis will combine the possibilities provided by both research tools for data analysis to showcase the most comprehensive view of student learning and behavioral analysis.

Who are the students and what do we know about them?

If we only focus on data from Google Analytics, we can work mainly with two sources of information - the first is the gender and age of the users, that is, their basic demographic description. Generally, data is of lower reliability than other data. The second source of information can be the location information from which they are connected. For example, it is easy to analyze how many

people are coming from outside the city where teaching is taking place or, for example, from a village. This information can be important, for example, in constructing tasks where you may find it difficult to reach different forms of blended learning or want users to visit a library or other physical space anchored for example. You can also scale connection times and track when and whether multiple users are connecting from outside the university's home city.

Another source of information can be information about the computer network. Here, users who connect through the school network and those studying elsewhere can be relatively easy to filter. One can ask, for example, whether the school environment reduces or prolongs study time. But what the web analyst can not answer is the question why.

Geolocation data can also easily be identified by students studying outside of the Czech Republic or the Slovak Republic and following their behavioral patterns.

However, in general, but not in the course we are tracking because of the absence of robot content indexing or sitelinking, it is also possible to determine which keywords the user brings to the site (ie, suppose their interest). If indexing is not enabled, you can use search results that are saved as separate webpages, which are then visible in your traffic results. The question, however, is whether such data really corresponds to the interest of users and not the wrongly configured web design, where some terms or themes may not be logically structured (due to information architecture) and users are therefore looking for them. There is also the possibility that they are looking for the information that appears in the test. In this respect, search analysis is important and useful, but its interpretation is rather complex.

Likewise, in our case, we can not even use information about which pages our users are coming to or how they use search engines. However, all this data could be used in the general case.

However, the most important information is those that address the interests of users. Google Analytics can identify these interests for work with advertising, but for education, these data are crucial - they can work with examples or invent tasks that will be most interesting for the target audience. Unfortunately, in our sample we have data unfortunately since 23 March. In the table, we list the interests that show the longest attendance, ie the supposed highest study interest:

TABLE 1. USERS WITH THE LONGEST TIME ON THE SITES

	Users	Visits	Avg. visit duration	Pages per visit
Travel/Travel Buffs/Family Vacationers	12(0,2 5 %)	54(0,17 %)	18:01	8,74
Media & Entertainment/TV Lovers/TV Comedy Fans	15(0,3 2 %)	54(0,17 %)	17:47	9,06
Lifestyles & Hobbies/Thrill Seekers	16(0,3 4 %)	75(0,23 %)	17:31	9,00
Travel/Travel Buffs/Beachbound Travelers	16(0,3 4 %)	85(0,26 %)	16:40	7,35
Travel/Travel Buffs/Snowbound Travelers	17(0,3 6 %)	122(0,3 8 %)	15:22	7,80
Media & Entertainment/Music Lovers/Country Music Fans	27(0,5 7 %)	195(0,6 0 %)	14:50	7,30
Lifestyles & Hobbies/Pet Lovers/Dog Lovers	20(0,4 2 %)	103(0,3 2 %)	13:54	7,58
Media & Entertainment/Music Lovers/Jazz Enthusiasts	15(0,3 2 %)	71(0,22 %)	12:46	7,03
Lifestyles & Hobbies/Business Professionals	45(0,9 5 %)	298(0,9 2 %)	12:42	6,90
Travel/Business Travelers	40(0,8 5 %)	274(0,8 4 %)	12:37	6,67

Source: Own

If we wanted to track the most frequent interests of users, then the order would be the following:

TABLE 2. THE MOST FREQUENT VISITORS TO THE SITES

	Users	Visits	Pages per visit	Avg. visit duration
Media & Entertainment/Music Lovers	194	1450	6,26	10:29
Media & Entertainment/Book Lovers	189	1283	6,13	10:17
Lifestyles & Hobbies/Art & Theater Aficionados	188	1433	6,18	10:39
Media & Entertainment/Movie Lovers	183	1281	6,38	10:56
News & Politics/News Junkies/Political News Junkies	169	1171	6,05	10:17
Sports & Fitness/Health & Fitness Buffs	163	1208	6,38	10:47
Lifestyles & Hobbies/Green Living Enthusiasts	159	1212	6,09	10:36
Lifestyles & Hobbies/Pet Lovers	149	978	6,19	9:50
Food & Dining/Foodies	129	987	6,28	11:05
Lifestyles & Hobbies/Shutterbugs	121	833	6,11	10:19

Source: Own

Average values are 6.32 pages per visit and 10:49 minutes spent with one visit. Google Analytics allows you to further structure the user interest categories - generally, these data will give a good, though perhaps not quite accurate, view of what users are moving on in the course and are one of the tools for more effective design or for working with the emotional design of the course.

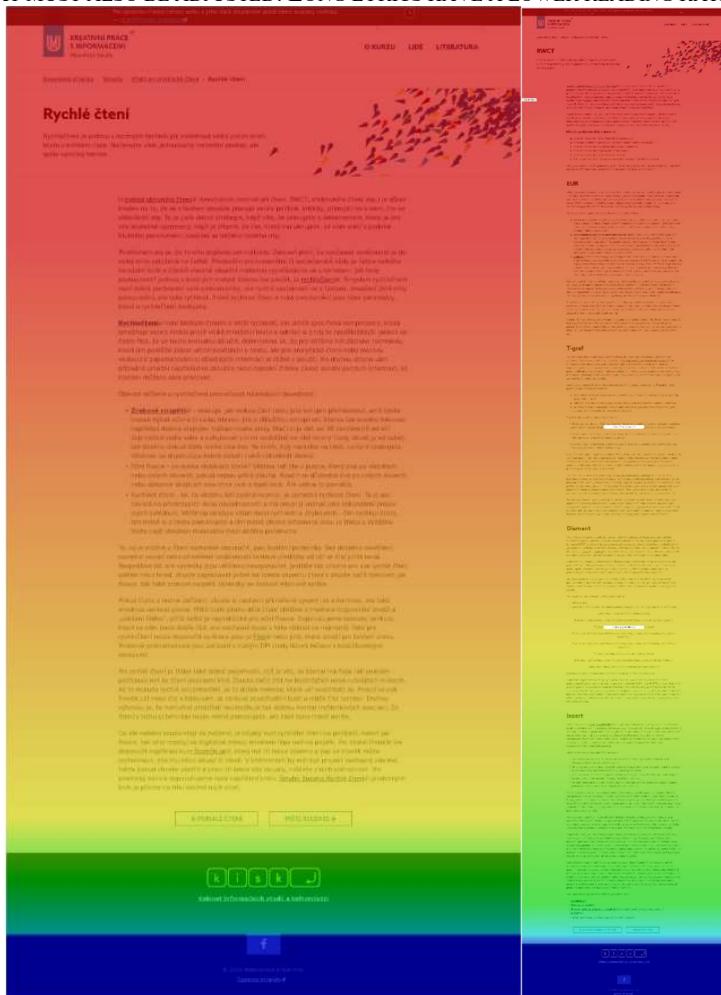
A separate question is what technology students use in the given course, which is also part of their profile. We address this issue in a separate research question.

How do students interact with the learning material?

The research question "How do students interact with learning material?" Is closely related to both the question of the technologies they use and the question of behavioral patterns. Therefore, let's leave it in some other chapters and here we will focus only on some specific aspects of student interaction with content.

From the data available from Smartlook, it also seems interesting to find out how many users scatter the page as far away. For example, the page length affects how many users look to the end?

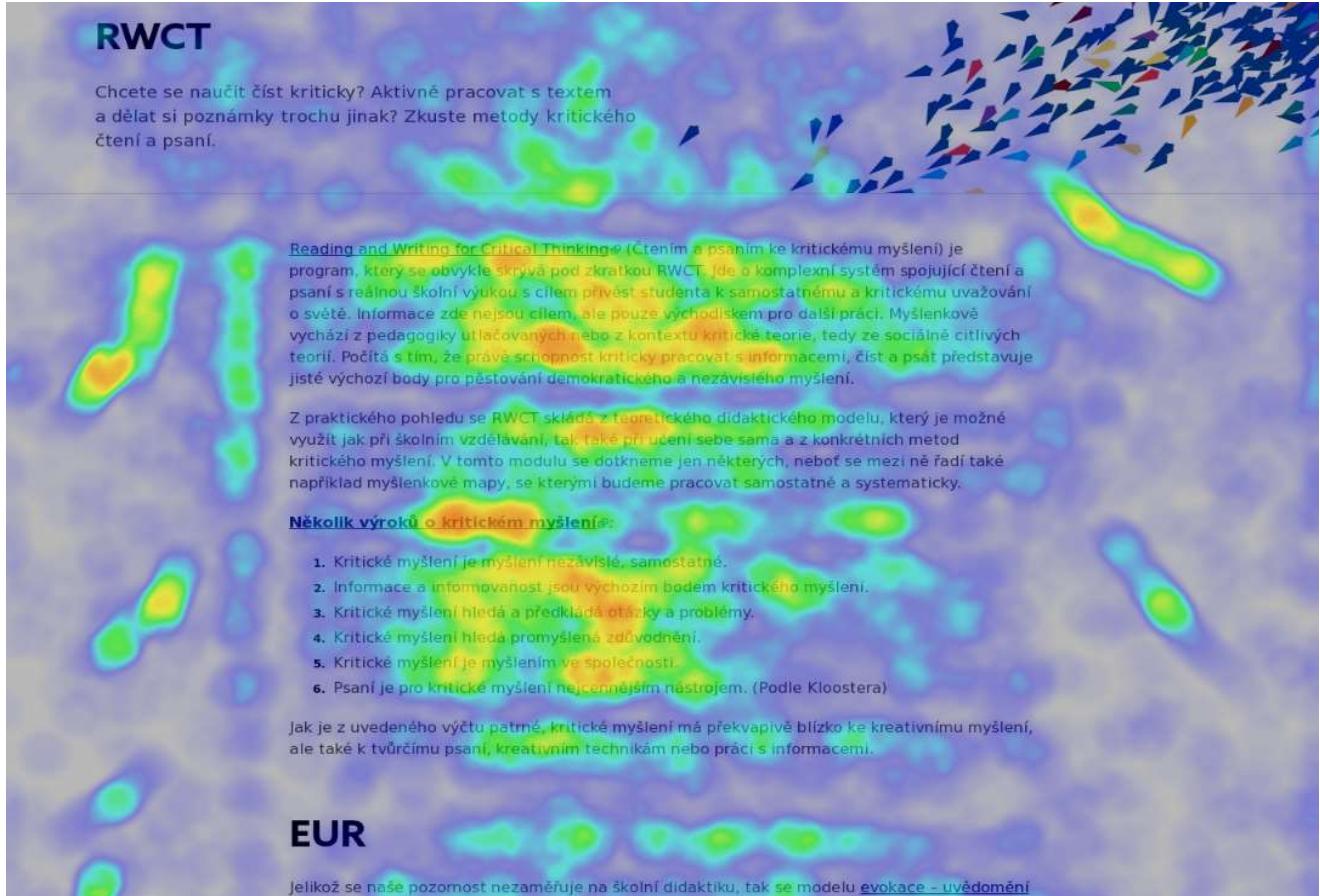
PICTURE 2. ON THE RIGHT IN THE PICTURE IS AN ILLUSTRATED EXAMPLE OF A RELATIVELY SHORT PAGE IN THE COURSE ON THE LEFT OF THE PAGE EXTREMELY LONG. IT IS CLEAR THAT IF WE WANT READERS TO READ THE TEXTS, THE LENGTH OF THE TEXT MUST ALSO BE ADJUSTED. LONG LYRICS HAVE A LOWER READING RATE TO THE END.



Source: Own

As we have already suggested, the basic parameters for analysis are also heatmaps that allow you to identify sites on the web that have some specific user interaction structures. Typically, they allow you to identify the places where most people click or where the cursor moves most, which refers to places that are interesting or challenging or, on the contrary, you can find areas on the page that have a considerably lower interest rate.

PICTURE 3: THE IMAGE SHOWS THE MOUSE MOVEMENT ANALYSIS ON A SPECIFIC PAGE. STUDENTS PAY ATTENTION TO A SPECIFIC ENUMERATION AND THEN IN THE FIRST PARAGRAPH THE TERMS "CRITICAL THEORY" AND "PEDAGOGY OF OPPRESSED" WHICH ARE NOT CLEAR AND KNOWN TO THEM. IT IS ALSO UNDERSTANDABLE INTEREST IN THE LINK THAT LEADS TO COMPULSORY STUDY MATERIAL.



Source: Own

As far as the clickthrough analysis is concerned, then Google Analytics Behavior Flow can be used to show how users switch between sites. This tool will be dealt with in more detail below. It is also possible to work with the Google Chrome add-on, which allows you to view the internal links on the page. A useful tool in this area is also Smartlook itself, which allows you to identify a page break (whether a link or a group of links) and quantify the number of clicks. You can also use Google Analytics to track the pages students are leaving, typically external links.

In the course we study, there is little use of search data, so it seems that students in the course are moving in a rather linear way. Indeed, on the data from the curriculum of Information Literacy Course that was built from the beginning as a non-linear (or nonlinear study option), it was very easy and clear

to show that students strongly favor the succession of materials. If they skip somehow, then they generally prefer test and task information to their own educational content.

Does course design have an impact on how to interact with online learning material?

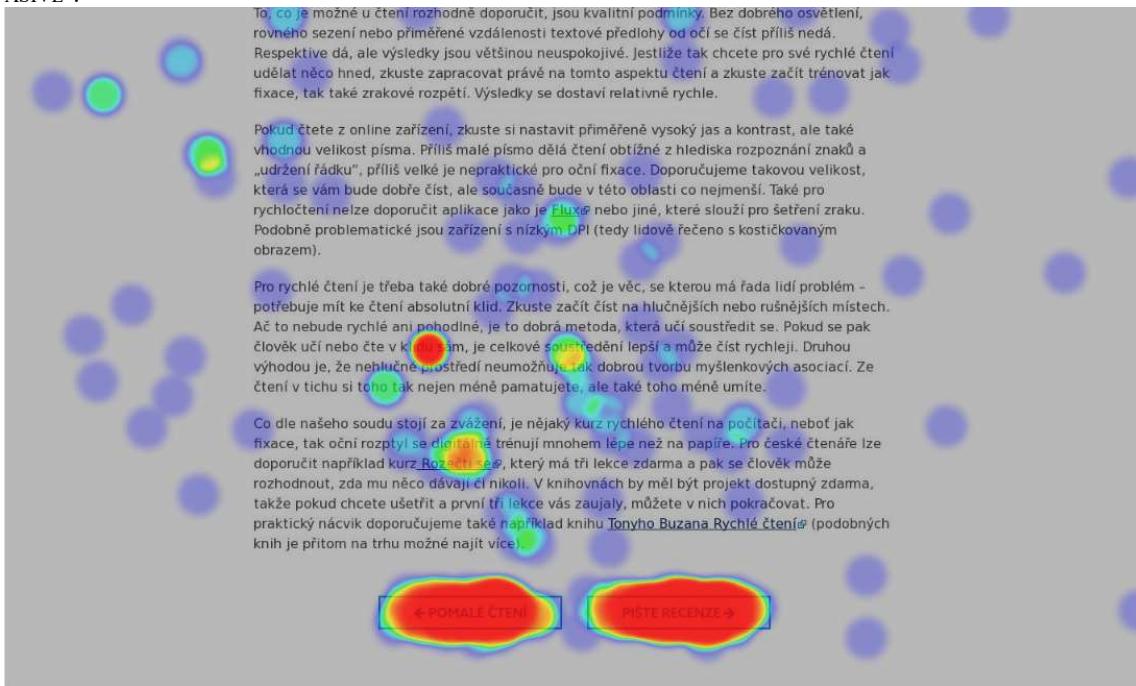
At this point, we can not rely on relevant research data that could be obtained by A / B testing, a research method for which Google also has specific tools. That is why we will only allow a few notes that summarize the experience of a more practical than a research character.

A related course for the Information Literacy Course took place in autumn 2017 and autumn 2016 in two visually different environments, but with relatively similar content, conditions and structure. In this course, it proved to be important how the course looks. The basic characteristics of the study have not changed much - the time for one visit was 8:28 in 2017, the number of pages 5.07 and in 2017 8:06 and 5.13, so they are essentially the same numbers. What was significantly different was the site users visited, so for example, organizational instructions were relatively often read in 2006 and 2017 no longer. This fact can also be attributed to changing the format of cold communication.

It is interesting to compare the course Creative Work with Information and the Information Literacy Course in 2017, when the same structure and visual style were used. The number of pages per visit on average in Creative work with information was 6.19 and time 10:22, which is significantly higher than in the autumn course. The question is, what causes this condition - it can be assumed that if the Creative works with information of a fourteen-day period with new materials, students can spend more time studying.

However, more precise measurements and more general conclusions would have to be made more accurately. Perhaps only the last note may be the fact that it is possible to move between the chapters using the "forward" and "back" buttons located at the end of the text. It is clear that students with this linearization element are actively working.

PICTURE 4: HEATMAP SHOWING CLICKS ON NAVIGATION BUTTONS. INTERESTINGLY, THE "BACK" BUTTON (225) HAS ONLY A RELATIVELY SMALL KNEE-LESS THAN THAT POINTING TO THE NEXT PAGE (308). LINEAR LEARNING, THEREFORE, FROM THIS IMAGE (BUT ALSO FROM OTHER DATA FROM OTHER SITES) DOES NOT ACT AS PURE FORWARD BUT RATHER AS "NON-INVASIVE".



Source: Own

What are the patterns in the behavior of students?

The fourth research question is: "What are the patterns in student behavior?" Here it is to be said that this is an extremely complex question and can not be answered simply. The Smartlook and Google Analytics connections in this area offer a large number of areas that can be researched. Here, it must be stressed that our view is far from complete.

The basic metrics that can be tracked are the pages visited by Google Analytics and the time spent by the student on the page. Thanks to these data, it is possible to work, for example, with the expected reading speed of the student, with an analysis of the time the student spends in the course and with a number of other important data.

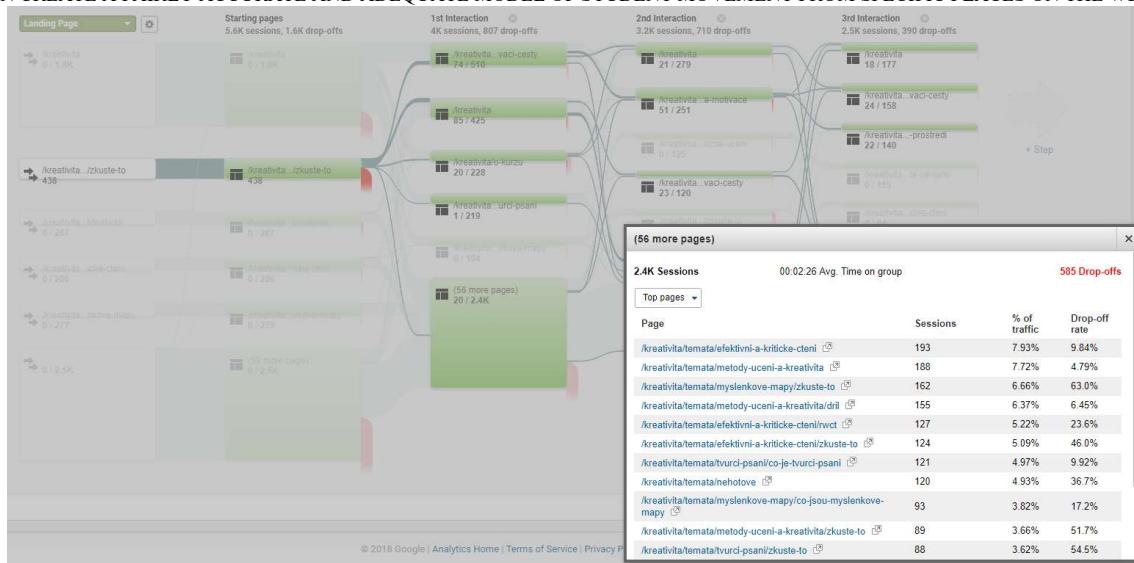
A very useful, though more demanding, analysis tool is the user flow map. It allows you to track the behavior of users on the Web in terms of their passage through the service - what are their typical paths to the source, from which pages they go, and where do they come from, what is their typical movement in the environment? This data allows you to monitor both the quality and structure of the site and compare it with the expected passage. These are dates that can greatly help to track the course links, but also help with studying user behavior.

PICTURE 5: THE USER FLOW CAPTURES HOW USERS ARE MOVING AROUND THE WEB, WHERE AND WHERE THEY GO, AND WHERE THE SITE IS LEAVING. THE IMAGE HIGHLIGHTS THE BEHAVIOR OF A USER ON ONE PARTICULAR PAGE.



Source: Own

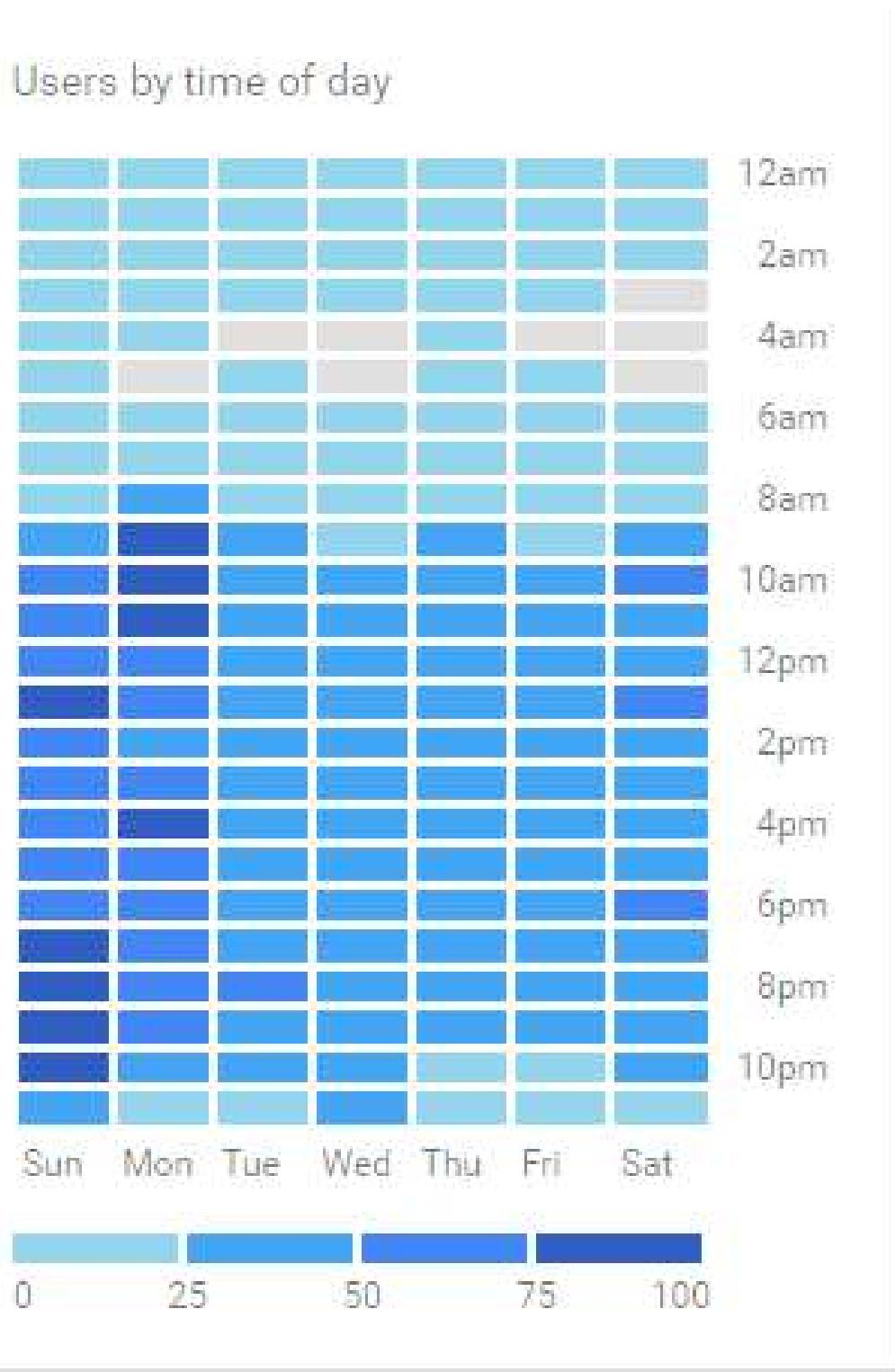
PICTURE 6: THIS IMAGE SHOWS INFORMATION ABOUT THE MOVEMENT OF USERS FROM A SPECIFIC PAGE IN THE COURSE - YOU CAN CREATE A FAIRLY ACCURATE AND ADEQUATE MODEL OF STUDENT MOVEMENT FROM SPECIFIC PLACES ON THE WEB.



Source: Own

The flow of users presents very interesting data about the behavior of users, which can not be obtained by any other commonly available analysis. (Tonyan 2015; Google Analytics Help, 2018) Understanding how students are studying, going through the web, leaving it, and spending time is an interesting data that can once again greatly help with the description of student life and behavior. These data can also be attributed to an analysis of the time students visit the web, or what is the difference between mobile and desktop traffic.

PICTURE 7: TIME AND DAY OF THE WEEK WHEN STUDENTS VISIT THE SITE. BY SUNDAY MIDNIGHT, A HOME ASSIGNMENT IS REQUIRED, SO THERE IS THE HIGHEST ATTENDANCE HERE. HIGHLY VISUALIZED DATA IS OBTAINED IN 90 DAYS. MONDAY'S INCREASED ACTIVITY IS DUE TO THE FACT THAT MONDAY LEAVES INFORMATION MAIL TO STUDENTS WHEN THEY ENTER A TASK OR OPEN A TOPIC. OTHERWISE, IT IS INTERESTING THAT THE COURSE OFFERS A VERY EVEN LAYOUT OF THE STUDIO FROM TUESDAY TO SATURDAY AND FROM 10 AM TO 10 PM. THE TIME BETWEEN 3 AM AND 5 AM IS LOGICALLY THE LEAST USED.



Source: Own

Smartlook allows you to work with user records on the Web, so the researcher can use analytics methods that are well known, for example, with work with vision in learning (Santagata 2007, Goldman 2007, Minačíková 2016, Janík 2013). Thanks to this analysis, it is possible to identify specific users (in the case of large research as well as the entire research sample) and to code their behavior in a good way. It is possible - in the context of previous data - to obtain comparatively comprehensive information about student behavior during study.

What are the strengths and weaknesses of such analysis?

As far as the strengths of such analysis are concerned, it is possible to study the student's behavior in the "natural environment" of his studies. This is not about working in a special LMS, where learning activities can be quite different from normal web site behaviors, but actually tracking how a student works. In this regard, we believe that using web analytics tools offers wider, more valid results than regular learning analytics.

We also consider it valuable that we can carefully analyze student interaction with study materials. Instead of working with learning analytics, we can anonymously monitor student work, what the site looks for and how it works. It is also possible to get relatively good estimates of students' interests or their specific patterns of behavior. Interestingly, it can also be considered that the differences between learning on a tablet or on a mobile phone and on a desktop.

In the classical paradigmatic framework of learning analytics, the biggest disadvantage is that the web analyst does not allow any intervention. It is not possible to help a student who has some problematic behavior because it is not possible to identify him / her directly. This is also related to the fact that these methods can not be easily linked, for example, with interviews or other methods that would assume work with individual users. The reason for this is the impossibility of easily linking individual actors to education with data. In terms of relevancy, it is also problematic that if a student uses multiple IP addresses, which is typical, his behavior can not be testified with sufficient consistency - the data is basically incomplete and the researcher does not know how. For example, creating different conceptual models is problematic for this reason.

We managed to combine the methods to achieve a significant shift in the quality and depth of the students' behavioral observations compared to previously mentioned research. We can not only analyze page-to-page movement, but also track the behavior of a particular student (or entire population) directly on the page. This also allows a deeper and more effective study of students' interaction with the materials they have available during study, and thus the more effective development of online courses or web-based textbooks.

Previous research (Luo 2015; Omidvar 2011; Romanowski 2016) has not even been aimed at the relationship between hobbies and learning or information behavior (which is understandable with regard to the general free implementation of the interest tracking and demography tool). With the

ability to track users' interests, we can design courses with more appropriate examples, and eventually try to engage special user groups. Demographics are then important, for example, for working with sampling for possible qualitative research methods.

Conclusion

In this paper, we attempted to identify a basic methodological approach that will allow us to work with web analytics as a tool for learning analysis. For this purpose, we have decided to offer a brief illustration of the topic on the data coming from the currently running course. His broader and broader case study analysis will be the subject of our publishing activity as soon as the course is completed and we will also be able to use it for feedback from tests or feedback from students.

We believe that both Google Analytics and Smartlook allow a deeper and methodologically different reflection on how students study online and how they interact with learning materials. We hope that the presented text can serve as a basic methodological basis for further research or as help for course designers. It is the creators of online learning that should work as much as possible with the user data as much as possible because they can offer more effective and adequate educational content.

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Others

EDUCATIONAL TRAINING IN THE PREVENTION OF PEDAGOGICAL CONFLICTS AT HIGHER SCHOOL

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Key words: pedagogical conflicts, educational training, emotional burnout, emotional intelligence, higher education, a teacher, a student.

Abstract: Actual ideas about the problem of preventing pedagogical conflicts in higher education have been analyzed. The essence, specifics, principles and dynamics of prevention of pedagogical conflicts between students and teachers have been researched and characterized. Particular emphasis has been put on modern teaching and learning technologies in higher educational institutions. Special attention has been paid to educational training on the discipline "Pedagogical Conflictology". The content, historical aspect, rules, stages, techniques of educational training, which is used for the prevention of pedagogical conflicts in the higher school, has been considered in detail.

In the result of the research there have been made conclusions about the necessity of preventing higher school teacher's "emotional burnout" which is a dominant reason of conflicts (27%) in the disputes between students and educators. In order to avoid it and provide a high level of efficiency for the teacher, it is advisable to use a comprehensive approach, which is based on theoretical researches of modern scientists and empirical experience of the authors of the article (the total sample consisted of 37 teachers and 214 students of the Faculty of Cybernetics, Psychology, Geology, Physics, Radiophysics, the Institute of Philology at Taras Shevchenko National University of Kyiv).

Summing up all the above mentioned, it can be stated that personal (76%) and objective (24%), organizational factors influence on the appearing of the "burnout" syndrome of the teacher. These factors mutually reinforce each other, depending on the mental processes, qualities, properties of the personality of the teachers and experience, conditions of their educational activity.

The comprehensive approach includes taking into account and balanced combination of the fundamental factors of the qualitative harmonic style of life of the personality, in general, and the constructive successful professional work of the teacher of the higher school, namely the physical, mental, spiritual health of the teacher and stimulation by educational training.

As a result of the study, it has been concluded that low level of emotional intelligence of the personality is a reason of conflicts (21%) in the higher education and it is necessary to develop EQ through an educational training that becomes a significant tool in the prevention of pedagogical conflicts connected with unsatisfactory level of application of educational technologies (13%) and other numerous reasons of conflicts (39%).

Thus, the use of educational training improves the quality of mastering not only the discipline "Pedagogical conflictology" and other courses, but also the professional, personal competence, productivity of students and teachers by saving time and resources.

Introduction

Nowadays higher education is actively reformed and needs new approaches to teaching students in accordance with the requirements of modern society. Today the actual problem of training teachers for educational activities involves acquiring knowledge and skills in the prevention of pedagogical conflicts in higher education, which have always been constant companions of social life. New progressive ideas that promote the evolution of higher educational institutions were born due to contradictions and conflict situations.

The importance of the problem of improving the quality of vocational education, improving the practical training of future teachers leads to active searches by modern pedagogues. Partly their researches are connected with the study of resource opportunities and the prospects of using educational training in the studying humanitarian disciplines. One of these disciplines is "Pedagogical Conflictology" - a field of

scientific psychological and pedagogical knowledge about ways and tools of predicting, prevention and overcoming of contradictions, pedagogical conflicts that appears in the educational process of educational institutions.

Pedagogical conflicts are manifested in the interaction of the participants of the educational process (students, teachers, administration) because of the existence of certain contradictions, contradictions in values orientations, views, mutual expectations, intolerance in communication, destructive acts, lack of conflictual culture of individuals (Gryn, Koshechko 2017, 67 -69)

Pedagogical conflict is a normal social phenomenon, in general natural for such a dynamic society as a modern higher educational institution. However, pedagogical conflicts are often destructive, they reduce the efficiency of the pedagogical process and the quality of students' training. We can say without hesitation that a responsible, purposeful activity is needed to develop a system of measures aimed at preventing and resolving conflicts in higher educational institutions.

All of the above mentioned can be corrected due to the discipline "Pedagogical Conflictology" that reveals the main categories, the history of its formation and development abroad and in Ukraine, the theory and practice of effective communication in pedagogical conflicts, methods, technologies of its solution. The course deals with the problems of prevention, typology, dynamics of pedagogical conflicts and provides assimilation of knowledge, skills and abilities, provides recommendations about possible methods for overcoming pedagogical conflicts. And this is extremely important and necessary for a contemporary controversial educational process in higher education.

The necessity of the discipline "Pedagogical Conflictology" is connected with the fact that much attention is paid to communication styles, conflict resolution strategies, mediation, advanced educational technologies, and techniques for solving pedagogical conflicts in the form of educational training that involves the active use of business role-playing games, training exercises, which causes and stimulates a high level of cognitive interest of students, their long-term interest and is one of the most effective interactive tools for a modern teacher's activity.

The purpose of this research is to study the preconditions of pedagogical conflicts and to substantiate the educational training "Effective communication is the best prevention of conflicts!" as an effective modern technology for preventing pedagogical conflicts in higher education.

The developed communication skills are extremely important for the professional activity of the lecturer. They are extremely useful in stressful situations, when they can become a valuable part of making responsible decisions. The teacher must develop communication skills, which is a manifestation of creating favorable relationships between colleagues and students.

Skills to communicate, establish contacts, influence students, speak publicly to staff members and outside educational institutions are essential for every teacher. All this depends on the talent, abilities of the person, the peculiarities of life experience and efforts (Marushkevich 2018, 20-35). A person can become more sociable due to the wide practice of communication under the condition of the purposeful development of these skills. A lot of things depend on the skill of constructing communication: the effectiveness, the quality of students' education, the degree of mutual understanding with colleagues, the clarity of the tasks, the positive socio-psychological climate, comfortable relationships in the team, prevention and constructive resolving pedagogical conflicts in higher education.

Prevention of pedagogical conflicts in higher education is a multifaceted long-term process of continuous predicting and prevention of destructive emotions and behavior in students', teachers' and administration's activity in educational institutions.

Methods

The following research methods have been applied to achieve the research purpose:

1) theoretical methods:

- theoretical analysis of psychological and pedagogical, scientific and methodological literature for the clarification of the essence and specificity of the basic concepts of research;
- comparison, systematization and modeling of information to determine the peculiarities of the prevention of pedagogical conflicts due to the resourcefulness of educational training;
- generalization to highlight the research findings;

2) empirical methods:

- testing (tests "Thomas-Kilmann Conflict Mode Instrument", "Communicative skills by L. Mikhelson", "Diagnostics of the level of emotional burnout by V. V. Boyko", N. Hall's test "Determination of the level of emotional intelligence");
- questionnaire in written form ("Methodology for the diagnosis of communicative social competence" and a questionnaire "Pedagogical conflict by the eyes of students", "Prevention and management of pedagogical conflicts in higher educational institutions", "Effectiveness of educational training");
- methods of quantitative and qualitative data processing;
- method of pedagogical experiment.

The research was carried out within the framework of establishing and forming experiments. The evaluation of experimental work results was carried out on the basis of quantitative and qualitative analysis of changes in the levels of formation of conflictological competence, based on the communicative culture of students and teachers, comparative analysis in the experimental and control groups.

There were such requirements for the research:

- psychological and pedagogical phenomena have been studied in their development, interconnection and interdependence;
- methods of psychological-pedagogical research have been selected accordingly and adequately its subject. The methods revealed essential, rather than random, features of the investigated process.

An experimental study was a thorough, step-by-step system process. His goal was to achieve the purpose and fulfill the objectives.

Results

The research was conducted in Ukraine at Taras Shevchenko National University of Kyiv. The total sample consisted of 37 teachers and 214 students the Faculty of Cybernetics, Psychology, Geology, Physics, Radiophysics, the Institute of Philology. The peculiarities of a sample group: 251 people from 18 to 63 years old, of which 92 people were in the experimental sample, 159 were in the control group (teachers and students together). The research was carried out in 7 stages.

The first stage was preparatory (17.2. 2016 - 27. 4. 2016). During it, an analysis of a great number of literature on the problem of preventing pedagogical conflicts in higher education, the formation of a communicative culture of teachers and students was done. Also, at this stage, there was a selection of methods for the research.

Modern views of scientists concerning phenomenon of communicative culture were taken into account during choosing methodology and tests. Communicative culture is an internal complex psychic personality formation, so this research may have some difficulties due to the difficulty of recognizing the traits inherent in this particular phenomenon. Therefore, we agree with the opinion of many scholars, in particular, the Czech researcher K. Kostkova, who believes that in diagnosing the communicative culture of the personality, one should pay attention primarily to communicative competence, which is an external expression of the internal culture of the person. The level of communicative competence and communicative skills is directly correlated with the level of assimilation of the communicative culture of a certain social environment and social norms associated with the regulation of the communicative process (Kostkova 2012, 40-43).

At the second diagnostic stage (28. 4. 2016 - 30. 6 2016), there were some tests (test "Thomas-Kilmann Conflict Mode Instrument", "Communicative skills by L. Mikhelson", "Diagnostics of the level of emotional burnout by V. V. Boyko", N. Hall's test "Determination of the level of emotional intelligence"), questionnaire in written form ("Methodology for the diagnosis of communicative social competence", "Pedagogical conflict by the eyes of students", "Prevention and management of pedagogical conflicts in higher educational institutions", "Effectiveness of educational training""") in the experimental

and control sample groups. During this stage the relevance of the problem of pedagogical conflicts in the higher education during the development of the communicative culture of students and teachers and the identification of possible factors that affect its level has been done. Particular attention in the research was drawn to the relationship between the type of social reaction and the personal characteristics of the people.

At the third analytical (1. 7. 2016 – 30. 11. 2016) stage, system work was carried out on the processing of tests, questionnaires, methodologies and their analysis. The question was how, with the help of which instrument, it is possible to carry out the prevention of pedagogical conflicts effectively in higher education and raise the level of communicative culture of students and teachers. During the third phase, the analysis and synthesis of literature about the problem of educational training as a technology for improving the skills of interpersonal communication of educators was also carried out.

The fourth creative phase of the research (1. 12. 2016 - 1. 3. 2017) was characterized by the analysis of scientific-methodological literature that is related to the topic of educational training, its specifics, peculiarities of the creation and testing of such training, evaluation of its results. On this basis, the training "Effective communication is the best prevention of conflicts!" was developed. Its peculiarity was to take into account the results of the empirical research of pedagogical conflicts, the communicative culture of students and teachers at Taras Shevchenko National University of Kyiv in the structural elements of the educational training.

At the fifth dynamic stage (3. 3. 2017 - 26. 6. 2017) 92 people (77 students and 15 teachers were divided into 4 experimental training groups) were involved in the training "Effective communication is the best prevention of conflicts!". Each group consisted of 3-4 teachers and 18-20 students. The training (20 hours) consisted of 5 sessions (4 hours each with intervals) and was conducted once a week. Each session is devoted to a separate theme-component of the prevention of pedagogical conflicts by raising the level of the communicative culture of the personality. During every next session, the participants' feedback and their wishes were taken into account. During the training, the goal was not to highlight all aspects of the prevention of pedagogical conflicts in higher education. The material of the training sessions "Effective communication is the best prevention of conflicts!" answers only main questions concerning methods, technologies and techniques of their prevention.

Taking into account the students' lack of time, because the majority of them are studying and working, the training is designed for a small number of hours. In a compact form, this activity is the beginning and basis for further internal work of the participants. Students and teachers will hold a number of trainings on the way of personal growth to the harmony of their own Self during studying in the university. After all, the problems that have accumulated during a lifetime are impossible to solve with only one training. In

addition, the materials of the sessions include big independent work and the possibilities of creative search for the trainers.

The training "Effective communication is the best prevention of conflicts!" in the part №1 "Know yourself in conflict" is aimed at deep study of the personality traits (temperament, character accentuation, self-esteem, social roles, status, image of the personality), learning of the internal world and its manifestations in pedagogical conflicts. The part №2 "Pedagogical conflict by the eyes of a man and a woman" contains informational materials about the specifics, regularities of manifestation of gender in conflict situations. The part №3 "The Art of Expressing Senses in a Pedagogical Conflict" offers effective ways of expressing emotions and feelings in conflict situations. During the part №4 "Effective communication in a pedagogical conflict" the main emphasis is placed on constructive communication, its positive techniques, as a general method of preventing conflicts, which ensures the results of the part №5 "Pedagogical conflict is an opportunity, not a problem" - the formation of harmonious, comfortable relations with society.

During the sixth diagnostic-analytical stage (27. 6. 2017 - 30.6.2017) a feedback form was developed to determine the effectiveness of the training. After completing all training sessions, the participants of the experimental group were asked to complete the questionnaire "Effectiveness of the educational training", as well as the participants of the control and experimental groups passed again the testing "Thomas-Kilmann Conflict Mode Instrument", "Communicative skills by L. Mikhelson", "Diagnostics of the level of emotional burnout by V. V. Boyko", N. Hall's test "Determination of the level of emotional intelligence", the questionnaire in written form "Methodology for the diagnosis of communicative social competence" for identifying the dynamics before and after forming experiment.

The seventh final stage (1. 7. 2017 - 27. 11. 2017) was characterized by the processing of research results about testing carried out at the sixth stage and the analysis of the questionnaire offered to the participants of the training. The review and comparison of the results of the experimental and control groups have been done, the summing up, the development of opportunities for further research about prevention of pedagogical conflicts, the development of the communicative culture of the participants in the educational process have been considered.

Summarizing the results of the previous theoretical and empirical research, we can state that the prevention of pedagogical conflicts consists of recognition, elimination, weakening of the factors of appearing, preconditions, the basics of conflicts of different types in higher education. Conflict prevention is a system of well thought out, well-considered, cautious preventive actions that relieve emotional stress. The main purpose of this process is to create such conditions for the activities and interaction of students,

their parents, teachers, administrations, which would minimize the probability of the emergence or destructive development of contradictions between them.

Ukrainian conflictologists (Beshchuk-Venwerska, Koshechko, Piren, Vaschenko) believe that the basis for successful prevention of pedagogical conflicts in higher education is the teacher's professional responsibility and the following principles connected with it:

- pedagogical *justice* (following normative-legal, moral-ethical, professional norms in the process of resolving pedagogical conflicts);
- pedagogical *reflection* (knowledge of the personality, manifestation of one's properties in a pedagogical conflict, analysis and evaluation of the actions in a conflict);
- pedagogical *empathy* (empathy in the process of a pedagogical conflict);
- professional *observation* (understanding the importance of quickly and correctly fixing the causes of the pedagogical conflict, the student's inner state by the smallest external manifestations to choose the appropriate ways of resolving the conflict);
- *optimistic forecasting* (the belief in the success of solving pedagogical conflicts with the help of diagnosis of its causes in time, conditions of appearing, adequate setting of goals, choice of tools, forms and methods of its solution);
- *creativity* (creative approach to solving pedagogical conflicts on the basis of traditional and innovative methods, search of non-standard constructive decisions).

Measures to prevent pedagogical conflicts stem from discussing the causes of their appearing. To prevent conflicts is important to create a favorable socio-psychological climate in the pedagogical team, in the student group. Unfavorable psychological climate often leads to a decrease in the efficiency of labor, stresses, emotional breakdowns and unconstructive behavior of the worker. To form a comfortable moral and psychological climate and, thus, for the continuous prevention of pedagogical conflicts, students, teachers, administration of higher educational institutions *it is important*:

- to take into account the personality characteristics of the opponent (specificity of perception (visual, audial, kinesthetics), type of temperament, accentuation of character, self-esteem, gender, social roles, motivation, values, status, personality image);
- to maintain the optimal social zone-distance in communication;
- to use naturally "open" gestures, language of the body;
- to adhere to a democratic partner style of communication;
- to apply active verbal and nonverbal communication and active listening;

- to select the correct diplomatic form of statement;
- to use positive constructive statements, which are the result of positive thinking, avoiding negative psychological and linguistic cliches;
- to use adequate and responsible "I-utterances" instead of accusations "You-utterances";
- to carry out constant control of emotions and save own emotional resources;
- to take into account the positive and negative effects, the results of intervention;
- to refuse from threats, psychological pressure;
- to make a constant search for compromises on the basis of empathy, tolerance and reflection.

The following recommendations for students, teachers, administration are very important in the educational process of higher educational institutions:

- to avoid unjust criticism;
- pointing to a person's mistake, it is necessary to begin with praise and genuine recognition of human dignity;
- you must first say about your own mistakes, and then constructively criticize the interlocutor;
- it is better to point out specific errors than talking general phrases;
- to criticize certain actions, but not personality in general;
- to explain how to correct the situation (Beshchuk-Venwerska 2015, 17-20).

The general recommendation concerning prevention of conflict situations in higher education is the constant desire of the teacher to avoid authoritarian domination, demonstration of a democratic partner style of communication in the organization of student activities and the constant emphasis on business interdependence between them, the prevention of turning business conflicts into personal sphere, which gradually, with the accumulation of such contradictions becomes vulnerable to the syndrome of "emotional professional burnout" of the teacher.

In the result of the research it is necessary to prevent the "emotional burnout" of the teacher, which is a dominant reason of conflicts (27%) in disputes between students and educators. In order to avoid it, it is advisable to use a comprehensive approach to maintain a high level of efficiency for the teacher which is based on theoretical studies of foreign and domestic scientists. In particular, in the 70s of the twentieth century, the nature and factors of "emotional burnout" were studied. The research methods were interviewing, case studies and observation. In the 80s of the twentieth century, the methodological phase in the study of the "burnout" syndrome began. The main focus was to assess this mental state. The questionnaires were formulated and the research methodology was developed within the framework of

industrial-organizational psychology. In 1981, Maslach Burnout Inventory was published to measure burnout. The method is intended to measure the main indicators of the burnout syndrome: emotional exhaustion, depersonalization and reduction of professional achievements (Maslach 1982, 93-235).

So, the researches about burnout are based on the methodology developed by K. Maslach, who formulated the burnout not only as a form, but also as a result of chronic stress in work.

Nowadays psychodiagnostic instruments are different. Psychologists assess emotional burnout with several tests: MBI, SBS and The Tedium Scale. The most popular is MBI. However, it is criticized for the fact that it assesses more often personality traits and intentions than situational burnout factors (Koshechko 2016, 22). These disadvantages were taken into account and eliminated in the test of the level of emotional burnout by V. Boyko, which was used in this research (Boyko 2002, 161-169).

Summarizing research results, we state that both personal (76%) and objective (24%), organizational factors influence on the "burnout" syndrome of the teacher, and they mutually reinforce each other, depending on mental processes, qualities, personality traits teacher and experience, conditions of educational activity.

A comprehensive approach to the prevention of pedagogical conflicts, the cause of which is the "burnout" syndrome, consists of the consideration and balanced combination of the fundamental factors of the qualitative harmonious lifestyle of the personality, in general, and the constructive successful professional activity of the higher education teacher, in particular: physical, mental, spiritual health of the teacher and the stimulation by educational training. If the above mentioned is available, so the probability of developing a syndrome is reduced to zero. The basis for these factors is the satisfaction of needs (in accordance with the "Maslow's Hierarchy of Needs"). In addition, the division into factors is rather conditional, because the mechanical delineation can lead to damage of the essence, the dynamics of processes. Therefore, it is necessary to pay a fair attention to the interconnections, the interpenetrability of some factors by others. The authors focus on putting in order, according to these factors, practical recommendations for the prevention of the syndrome of "emotional professional burnout" of teachers.

I. *Physical factor, physical needs, physical health of the teacher.* One of the most important and simplest in the implementation, which does not require special financial resources to implement, is the need in a perfect sleep. Before such a rest, it is desirable to have a calm stroll, breathe fresh air (dog owners always follow this recommendation due to their pets), sleep and wake up at one time etc.

As biologists teach 1) an 8-hour sleep becomes the dominant method of recreation (and hence prophylaxis) of a person inclined to the syndrome of "emotional professional burnout." Everything genious is so simple! Sleep is the most perfect mechanism of universal recovery of the personality. Unfortunately,

modern teachers, checking tests late at night, control papers, preparing for classes, presentations at conferences, reports, creating scientific articles, presentations, etc., underestimate importance and neglects a good sleep. And gradually, with time and biological age, they have irreversible damage, negative habits, which stimulate the development of "emotional professional burnout" (Beshchuk-Venwerska 2015, 19).

In this context, a balanced, "healthy", rich in vitamins and minerals, 2) nutrition in accordance with the regime and the biological rhythm of the teacher becomes very important. Particularly it is useful to take antistress magnesium and vitamin E, which is contained in nuts, sunflower and pumpkin grains, carrots, blackberries, soy beans, olive and linseed oil etc. Bananas, chocolate, dried fruit, honey significantly improves the mood. It is well known that without food, a person can live for several months, without water - about a week (therefore, it is necessary to drink fresh, still water not less than 8 glasses a day), but without a full sleep a person can live only a few days after which the hallucinations, nervous disorders start.

For prevention of emotional burnout of the teacher it is important to have: enough 3) physical activity, sports, morning gymnastics, yoga, fitness, dancing (dance moves to music help to get rid of negative emotions, as well as any work around the house); 4) hobbies (books, films, knitting, fishing, tourism, etc.); 5) massage (both classical massage and massage of biologically active points on the hands and feet can help). Regular physical exercises help eliminate from the body of chemicals that result from stress, make relaxation more profound and improve sleep. Thus, having a healthy lifestyle and avoiding bad habits will reduce the risk of a "professional emotional burnout" syndrome of a teacher (Beshchuk-Venwerska 2015, 20).

It is also desirable to have 6) phytotherapy, 7) homeopathy, 8) aromatherapy (the smell of citrus, bergamot, spices act on the nervous system, excite, there is a feeling of tidal forces, the smells of lavender, anise, sage act soothing, help to get rid of nervous tension); 9) therapy with minerals.

The teacher should do 10) breathing exercises (calm breathing with extended exhalation reduces excessive excitement and nervous tension; mobilizing breathing with increased inhalation helps to overcome sluggishness, drowsiness) and take 11) water treatments (contrasting shower before going to bed will help to remove the fatigue of the day, and in the morning will add vivacity; the water helps to get rid of negative things).

II. Mental factor, appropriate needs, mental health of the teacher.

Exit, anger, discontent, criticism of oneself and others are the most harmful emotion for the body. Our brain throws hormones of stress on any stimuli that threaten our being calm. At the same time, our brain does not care whether they are real or fictitious. Therefore, the organism will respond as if to a real

psychological problem. Because of this it is important for the teacher to control their emotions, "re-programming" them from negative to positive. After all, in the phenomena of the surrounding reality, you can find many useful points. You need only a desire to develop this "profitable and convenient, constructive" psychology and philosophy of life. Its fundamental ideas are: "It is more important how I see it than what I see", "Everything that is happening is for the better", "Everything will be good!".

Therefore, it is important to pay attention to the positive moments of life and be able to be grateful for them. The negative question "Why?" is desirable to turn into a positive "What for?". Why did a certain unpleasant situation appear in my life? What conclusions do I have to come to? What do I have to learn in this situation? If you have such attitudes to life situations, so they stop to be perceived as problems, and the life begins to be perceived as a school, where events and situations are shaped so that we can learn exactly what we need.

Through the prism of this approach and attitude to the life of the teacher, the following things become significant: 12) *positive psychology* (based on positive constructive thinking of the personality, in particular, on avoiding the use of negative cliches and reformatting them into positive ones, aimed at successful achievement of clearly defined productive goals, etc.); 13) *humor* (laughter has a positive effect on the immune system, activating T-lymphocytes of blood; in response to your smile, the body produces the desired hormones of joy; the humor perfectly "recharges" the negative); 14) *time management* (this is a plan of work for a week that is made on Saturday evening, and is corrected within a week, based on the knowledge of the Eisenhower scheme, Pareto and Parkinson's principle to optimize the time that includes "trash time", as well as time on lunch and rest).

It is also useful for the teacher to use 15) *art therapy* (its exceptional value deserves isotherapy, color therapy (green and blue help to calm down, red and yellow energize and gives cheerfulness), *music therapy* (listening to classical music contributes to the harmonization of the psycho-emotional state and helps to get rid of negative emotions), *bibliotherapy, phototherapy, collage creation*); 16) *scientific conferences, events, internships* (they expand the scientific horizons, professional contacts, improving the qualifications of the teacher) and 17) *keeping a diary, self-analysis*.

III. *Spiritual factor, spiritual needs, spiritual health of the teacher.*

To prevent the emotional burnout of a teacher, this factor is desirable to "nurture" by 18) *spiritual practices*. Concerning Ukrainian history and culture, Orthodox psychotherapy can become such an effective restorative resource, as well as others, depending on the religion, worldview, mentality, etc. of the teachers, their ways of spiritual self-development, self-improvement. In this context, meditation and

visualization are very important (for example, imaginary visit a garden in blossom, visit the favorite corner of nature, etc.).

“Burnout” of a teacher can be prevented due to 19) *communication with family, friends, nature, animals* (nature always gives a person a sense of energy, energy recovery, as well as domestic animals); 20) *travelling* (enrich and diversify our lives); 21) *charity, volunteering*; 22) *cultivating* a sense of peace of mind, satisfaction and harmony (Beshchuk-Venhers'ka 2015, 21-22).

In the result of the research, we came to conclusions that low level of emotional intelligence of the person can be a reason of a conflict (21%) in higher education and it is necessary to increase EQ through educational training that is also a significant tool in the prevention of pedagogical conflicts related to the unsatisfactory level of application of educational technologies (13%) and other reasons of conflicts (39%), which will be analyzed and presented to the scientific community in the following publications.

There are some interactive exercises and business role games for the development of emotional intelligence of the person in the format of educational training "Effective communication is the best prevention of conflicts!". For example, an interesting effective exercise on acquaintance, activation and projective diagnostics of personality communication styles "***Greetings of the hands***". Time: 15 minutes. The trainer invites participants to unite in pairs and say hello with hands only. Reflection and interpretation of the exercise: participants remember the positions of their hands at greeting (if the hand was above, below, side by side). These movements in general characterize the internal position of a person and the style of communication.

1. If the hand was given from above, then a tendency towards an authoritarian style of communication is possible. It is well-known that dictate turns one of the participants into a passive performer. The authoritative teacher self-defines the direction of the group's activities. This inhibits the initiative, suppresses students. The main forms of interaction in this style of communication are an order, an instruction, a reprimand. The teacher is intolerant to the objections. All this creates an unfavorable psychological climate. Countering the teacher's power pressure will lead to confrontation.

2. Of course, the authoritarian style of communication must be avoided by replacing it with a democratic one (the hand is given side by side). This style is based on deep respect, trust and orientation on self-organization, self-management of the personality and the team, designed to convey the purpose of the activity to the consciousness of each student and to involve everyone in active participation in the common deal. The main form of interaction are encouragement, advice, information.

3. If the hand was given from below, then a possible tendency towards a liberal style of communication, which is characterized by the lack of a stable pedagogical position, may be possible. It implies

non-interventional behavior of the teacher, a low level of requirements for students. Such a pedagogue is limited only to the teaching function. The consequence is the loss of respect, the deterioration of success and discipline.

The exercise "***Squeeze out the Fist***" is equally informative on the projective psychodiagnostics of prevention and resolution of pedagogical conflicts in higher education. Time: 30 minutes. The coach invites participants to unite in pairs, having defined the first and second numbers. The first numbers firmly grip the fist for 1 minute, the task of other numbers is to open it in any way. Then the participants change roles. Exercise ends with group reflection and interpretation of the exercise. Exceptional attention is paid to the analysis of feelings of participants in an artificially modeled conflict situation. The desire-fantasy of the participants of the training to finish this exercise individually is very important. It is useful to ask participants how they would like to finish it and with what consequences.

Particular emphasis is placed on the fact that the authoritarian style of communication provokes ineffective competing (conflict-handling modes by K. Thomas) and destruction in solving pedagogical conflicts in higher education; democratic communication style is the basis for the desired and useful compromise and cooperation in the management of pedagogical conflicts; the liberal style of communication more often becomes a basis for avoiding and accommodating in resolving pedagogical conflicts.

1. Authoritarian style of communication => competing (rivalry).
2. Democratic style of communication => compromising and cooperation.
3. Liberal style of communication => avoiding and accommodating.

It is necessary to mention that there are five main modes of conflict behavior. They are described and widely used in management education programs based on a system called Thomas-Kilmann, developed by Kenneth W. Thomas and Ralph X. Kilman in 1972. The system allows to create their own mode of conflict resolution for each person. The basic styles of behavior in a conflict situation are connected with the source of any conflict - the divergence of interests of two or more sides that can be prevented due to effective communication (Thomas 2002, 470-476).

TABLE 1. CONFLICT-HANDLING MODES ACCORDING TO THOMAS & KILMANN

A measure in which you try to satisfy your own interests	1.Competing	4.Collaborating	<i>Active actions</i>
	2.Compromising		
	3.Avoiding	5.Accommodating	<i>Passive actions</i>
	<i>Individual actions</i>	<i>Mutual actions</i>	

Source: Own

1. Competing mode is an open active struggle for your interests, defending your position. Personality is not very interested in co-operating with other people, but is capable of volitional decisions. This can be effective if the opponent has little time and resources, enough power and confidence in the correctness of the decision. The motto of this style is "Everything (80-100% of success) for one opponent or nothing for another opponent."

2. Compromising mode is resolving disagreements due to mutual concessions. Opponents are converging on the partial satisfaction of their desires. Such actions are similar to cooperation. However, a compromise is achieved on a more superficial level, because opponents do not seek and analyze hidden needs and interests. The motto of the style is "Success must be divided (50% of success to one side and 50% of success to the other side)."

3. Avoiding mode is an attempt to get out of a conflict situation without resolving it. The person does not defend rights, does not cooperate with anyone to solve a problem, just avoids a conflict. The motto of this style is "Nothing (0% success)."

4. Collaborating mode is a joint long-term, step-by-step development of a solution that will satisfy the interests of all sides: first, the needs and concerns of both people are determined, and then they are discussed. This is a great way to find a mutually beneficial result. The motto of this style is "Everyone is successful (80-100% success)."

5. Accommodating mode is changing of one's position, reorganization of behavior, smoothing contradictions to the detriment of one's interests. This style can be used to get a delay in solving the problem. His motto is "A little (20% success)" (Thomas 2002, 470-476).

Prevention of a pedagogical conflict in higher education is possible due to:

- transformation, change of the objectively existing situation, but it occurs rarely;
- changes in the opponents' attitude towards the situation, and it happens mostly as a result of development of emotional intelligence of the person in the format of educational training "Effective communication is the best prevention of conflicts!".

The person's following these conditions can prevent a pedagogical conflict:

- adequacy of the reflection of the pedagogical conflict;
- openness and efficiency of communication of people that have a conflict;
- creating a climate of mutual trust between people that have a conflict;
- determination of the essence of the pedagogical conflict, the true motives of the opponents behavior;
- the opponents' desire to have a common comfortable result.

Communication is usually worsened in a conflict situation. When the person is shrouded with emotions, it is difficult to express thoughts and listen carefully to the interlocutor. Therefore it is useful to suggest some exercises about active and passive listening.

"**Learn to listen**": • language; • separate words and phrases; • tone, timbre of voice, tempo of speech; • silence; • face, body, posture, clothing.

When I am listened to: • I can express my thoughts; • I can clarify my point of view; • I can express emotions; • I can be supported; • I have value as a person.

It would be good if each of the opponents could at least partly say to their partner the following:

- "What do I want and how can I prevent this conflict?"
- "What kind of reactions do I expect from a partner?"
- "What am I going to do if the partner behaves differently than I expect?"
- "What consequences will we (I) get if agreement is reached?" (Koshechko 2005, 57-62).

The next exercise "**Positive Thinking**" is appropriate for developing of emotional intelligence of a person in the format of educational training "Effective communication is the best prevention of conflicts!". Its purpose is to develop skills of positive thinking, communication and behavior with the use of "constructive cliche without the word "No". It is well-known that according to NLP-psychologists (Bandler, Grunder 1973; Koshechko 2005, 13-18), the word "No" is ignored by our perception. We often do not hear it. And we receive and execute only the command-verb in the negative (" be late", "talk", "disturb", etc.). This, in particular, explains the phenomenon of "child disobedience". It is advisable to avoid psychological clichés with the word "No" ("do not be late", "do not speak", "do not disturb", etc.), and to program the student in a positive way ("come in time", "listen carefully", "pay attention", etc.).

Exercise time: 20 minutes. The coach makes pairs on a random basis. Each participant recalls from the childhood 3 negative cliche-bans with the participle "No" and writes them on paper to the column marked "-" above. Then the person passes this piece of paper to a partner who must correct "-" for the "+" and

re-processes, reprograms them into positive statements. Each cliche is creatively played in a pair, after which the reflection is carried out.

To prevent conflict situations in higher education, when the person is annoyed and dissatisfied, the use of "I-utterances" becomes more relevant and useful instead of negative "You-utterances". They contain awareness of one's feelings, expressing one's attitude to a particular subject without blaming and demanding, so that another person changes his or her attitude. This method helps to maintain one's position without making another person an opponent.

For example, for the development of the emotional intelligence of the personality in the format of educational training "Effective communication is the best prevention of conflicts!" and for the prevention of pedagogical conflicts. There is an effective exercise ""You-utterances" and "I-utterances". Time: 30 minutes. The coach provides brief information about the contents of "I-utterance", "You-utterance". Then the group unites in the group of three - 1, 2, and 3 numbers by the order. The first and the second form pairs, the third must observe the situation. The trainer offers the first ("role of the teacher") to use "You-utterence" and say the phrase "Again you have been late for the lecture!" and get a negative reaction of the second ("student role"). Then, the "teacher" uses "I-utterance" and says: "I feel insulted, irritated, I worry and distract when someone is constantly late for lectures. And I would like, I ask that students come on time" and get a positive reaction of a "student". The first and the second change roles and act the situation again. Then in each mini-group there is a group reflection, in which participants not only analyze their feelings and behavior, but also the corresponding reactions of the partner. At the same time, the participants tend to answer the question "What statements are more constructive (positively affect ...), and which ones are destructive (causing resistance, protection, irritation, anger ...)?". Then the 3rd numbers give feedback.

As a conclusion for the exercise, the trainer suggests sketch out the "I-utterance":

1. Your reaction is "I feel ..." (description of your emotions and feelings);
2. Statement of fact, events "When someone ..." (depiction of a destructive situation);
3. The desirable consequence is "I would like to ..." (Volkov 2008; Koshechko 2005, 44-48).

Thus, the following forms of communication can contribute to the prevention of pedagogical conflicts: • statements that convey how you understand the words or actions of an opponent, attempts to get confirmation that you understand them correctly; • open and personal expressions that are connected with feelings and intentions; • information that has feedback about your partner's perception and behavior; • demonstrating that you perceive a partner as a person, in spite of criticizing some specific actions.

The evaluation of the results of the educational training "Effective communication is the best prevention of conflicts!" was carried out on the basis of a model for determining the effectiveness of trainings developed by D. Kirkpatrick. According to it, the effectiveness of the training can be estimated at 4 levels:

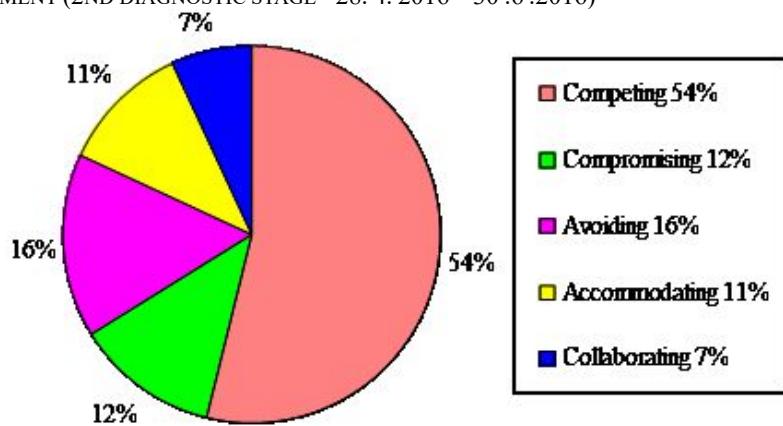
- criterion of reactions (determines the opinion, impressions of the participants about the training, reaching the goal);
- teaching, educational criterion (level of mastering new knowledge by the participants, readiness to apply them in life). Since this training is educational, this criterion is the main one;
- criterion of the behavior of the participants (how much the training changed the actual behavior of its participants);
- criterion of results and their stability (determines how much the achieved results positively influenced the real life situations of the participants of the training) (Kirkpatrick 2006, 21-71).

The developed questionnaire "Effectiveness of Educational Training" allows to evaluate the effectiveness of the training according to the first two criteria. Summarizing the answers of students and teachers to the questions on the criterion of reactions, we have such results: • 53% participants replied that the training had a positive effect on them and admitted that the goal was reached to a large extent at a high level, 26% of respondents - on the average level, 19% of participants noted a low level in reaching the goal; 2% of respondents did not increase their level and assessed it unsatisfactorily; • 87% of the participants indicated that they would like to participate in such trainings in the future. In the column "Your wishes for conducting the training", the most frequent answers were "More training is required", "... to replace lectures and seminars for training ...", "... to conduct such trainings more often ...".

The training has raised the level of knowledge, theoretical conflictological competence, communicative culture of participants according to *educational criterion*: the training information was new and completely unknown at 80-100% for 21 people; the information was just new at 60-80% for 57 people; the information was relatively new at 40-60% for 10 people; the information was new at 20-40 % for 4 people. For the question "What percentage of new information can you apply in higher education?" 78 respondents answered that they can use 60-80% of information, 14 respondents can use 40-60% of information.

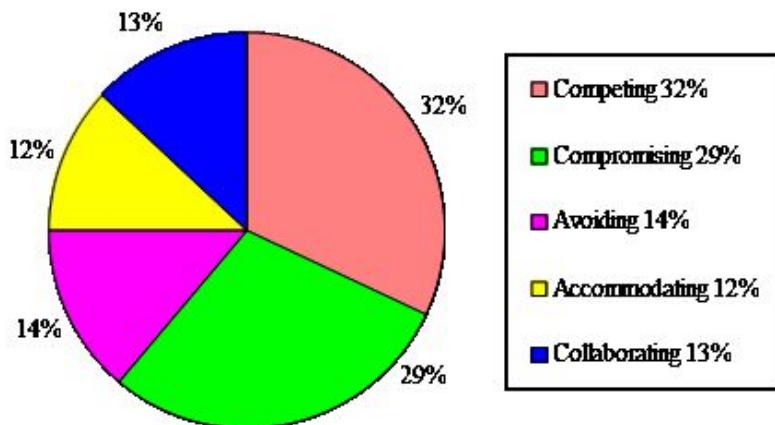
According to the criterion of participants' behavior, the effectiveness of the training was assessed with the help of tests conducted for the control and experimental groups before and after the training.

DIAGRAM 1. PERCENTAGE OF CONFLICT-HANDLING MODES OF PARTICIPANTS IN THE EXPERIMENTAL GROUP AT THE BEGINNING OF THE EXPERIMENT (2ND DIAGNOSTIC STAGE - 28. 4. 2016 – 30 .6.2016)



Source: own

DIAGRAM 2. PERCENTAGE (IN%) OF CONFLICT-HANDLING MODES OF PARTICIPANTS IN THE EXPERIMENTAL GROUP AT THE END OF THE EXPERIMENT AFTER THE EDUCATIONAL TRAINING (6TH FINAL DIAGNOSTIC-ANALYTICAL STAGE – 27. 6. 2017 - 30. 6. 2017)



Source: own

According to the test of communicative skills by L. Mikhelson the type of reaction of a person was determined for different types of situations (negative partner's words, which could lead to pedagogical conflicts). The attention was focused on communicative skills as an integral part of the culture of communication and prevention of pedagogical conflicts in higher education. All reactions were divided into *competent* (positive), *dependent* and *aggressive* (negative). The results of the experimental group for this test are given in Table 2. The indicators in the columns "2016" correspond to the results obtained by this test in 2016, before the experimental group's having "Effective communication is the best prevention of conflicts!", the columns "2017" correspond to the indicators, obtained in 2017, that is after finishing the training in the experimental group (Zozulyak, Koshechko 2016, 83-95).

TABLE 2. RESULTS OF THE EXPERIMENTAL GROUP (IN%) BY L. MIKHELSON'S TEST.

The list of communicative skills	Dependent reactions, %		Competent reactions, %		Aggressive reactions, %	
The year	2016	2017	2016	2017	2016	2017
Reaction to fair criticism	22	19	50	62	28	19
Reaction to unfair criticism	28	15	47	67	25	18
Reaction to provocative behavior	27	24	44	58	29	18
The ability to have contact	26	16	62	72	12	12
Reaction to an external attempt to have a contact	62	42	19	33	19	25

Source: own

Consequently, it can be concluded from the table data that the number of competent reactions to different situations increased by 10-14% after the participants passed training with the improvement of the level of communicative culture. We note the maximum progress in the categories "Reaction to provocative behavior" and "Reaction to an external attempt to have a contact", where the difference in the rates of competent reactions was 14%. This tendency provides resource opportunities for the prevention of pedagogical conflicts in higher education. The results of the control group according to the test of communicative skills by L.Mikhelson did not naturally change. A methodology for diagnosing communicative social competence was used to obtain a broader understanding of the personality under conditions of research, identification of the main factors, causes of interpersonal conflicts of students and, accordingly, methods of preventing pedagogical conflicts in higher education. Its results in the experimental group are presented in Table 3.

TABLE 3. LEVEL OF COMMUNICATIVE SOCIAL COMPETENCE ACCORDING TO THE TEST OF COMMUNICATIVE SKILLS BY L.MIKHELSON

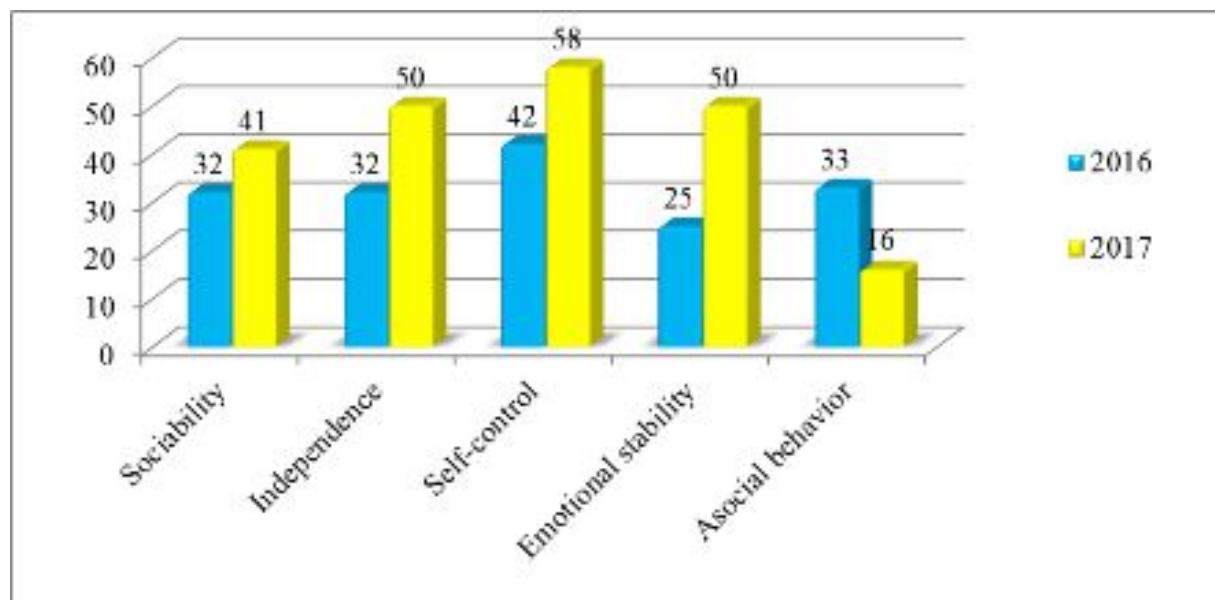
Indicator	Low formation, %		Middle formation, %		High formation, %	
The year	2016	2017	2016	2017	2016	2017
Sociability	18	9	50	50	32	41
Independence	50	16	18	34	32	50
Self-control	8	0	50	42	42	58
Emotional stability	17	8	58	42	25	50
The quantity of participants, prone to asocial behavior, %	2016			2017		
	33			16		

Source: own

Thus, it is clear from the table that the people who participated in the training significantly increased the level of sociability: the number of people with a high level of formation of this quality increased from 32 to 41% (by 9%). The degree of independence of the participants significantly increased: the number of people with low formation of this indicator decreased by 34% (from 50% to 16%), the percentage of middle formation increased from 18% to 34% by 16%, and high formation changed from 32% to 50%

by 18%. The indicators of Self-control became the highest, because after the training in the experimental group there were no people with a low level of its formation. As for emotional stability, the number of people who have a high level of its formation has increased by 2 times to 50%. One-third of people were inclined to asocial behavior before the training, after passing this rate fell to 16%. The control group's level of communicative skills has not changed.

CHART 3. DYNAMICS OF RESULTS (IN %) WITH A HIGH LEVEL OF FORMATION OF EXPERIMENTAL GROUP INDICES ACCORDING TO THE TEST OF COMMUNICATIVE SKILLS BY L.MIKHELSON

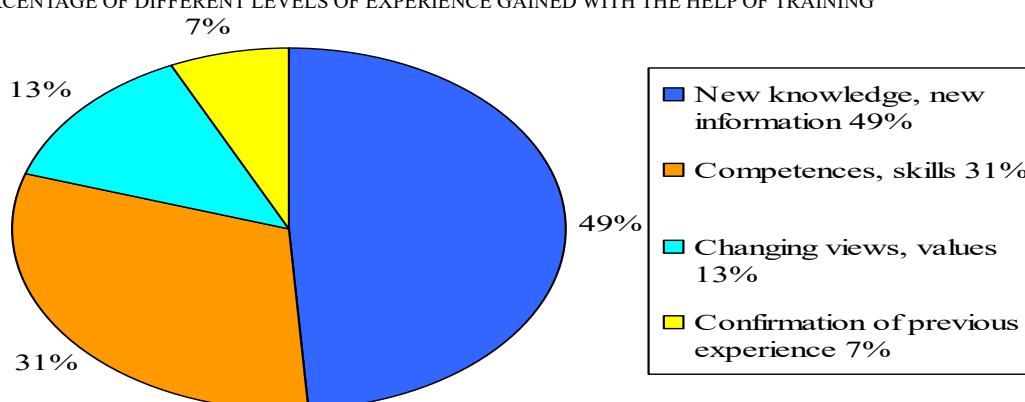


Source: own

The dynamics of the results of the control group remain unchanged.

After analyzing the results of the experimental group concerning the questionnaire "Effectiveness of educational training", it was concluded that the training was necessary for 93% of the respondents. They have testified that the educational training "Effective communication is the best prevention of conflicts!" provided the following experience.

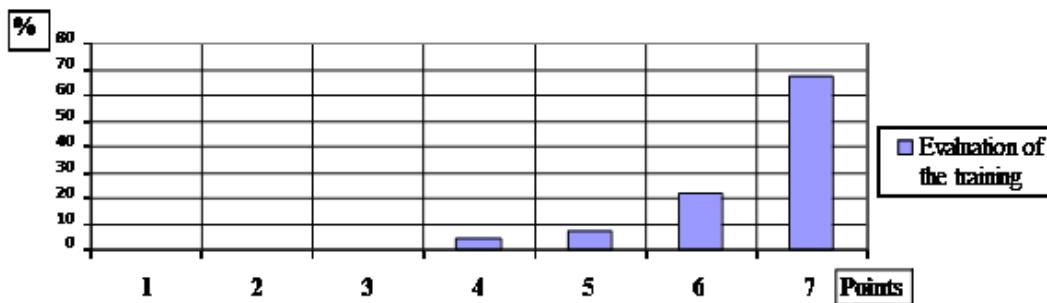
DIAGRAM 4. PERCENTAGE OF DIFFERENT LEVELS OF EXPERIENCE GAINED WITH THE HELP OF TRAINING



Source: own

The percentage of benefit from the training on a scale from 1 to 7 was estimated as follows:

DIAGRAM 5. ESTIMATION (IN%) OF THE USEFULNESS OF THE TRAINING



Source: Own

67% of the respondents in experimental group have noted that after the training "Effective communication is the best prevention of conflicts!" their behavior in a pedagogical conflict has changed in a more constructive direction. 43% of the respondents discussed informational materials of the training with parents, relatives and friends. The respondents (91%) express hope for further positive transformations, new constructive methods of preventing pedagogical conflicts, which will be based on the acquired knowledge. 87% of the participants indicated that they would like to participate in such trainings in the future.

Conclusion

We came to conclusion that such a complex phenomenon of educational life as a *pedagogical conflict* required a *specific complex methodology* for its prevention and overcoming. It consisted of a combination of methods, technologies and techniques of individual psychological counseling (for more effective regulation of intrapersonal conflicts) with training technologies, in particular, the training "Effective communication is the best prevention of conflicts!" (for optimal prevention of interpersonal pedagogical conflicts). Due to this approach, certain positive changes and transformations in the students and teachers consciousness and behavior have been achieved and their effective practical preparation for the prevention of pedagogical conflicts in higher education has been realized.

In this context, exclusive attention was paid to the *development of the teacher's emotional intelligence* and to the *prevention of the syndrome of "emotional professional burnout"*, which is provoked most pedagogical conflicts. The essence of comprehensive approach to the prevention of the "emotional professional burnout" syndrome of the teacher was in the balance combination of fundamental factors, factors of a qualitative harmonious lifestyle of the personality, in general, and constructive successful professional work of the higher education teacher, in particular. These **recommendations** relate to:

I) **Physical health** of the teacher: 1) 8-hour sleep became the dominant method of recreation; 2) nutrition according to the regime and the biological rhythm of the teacher; 3) physical activity, sports, morning gymnastics, yoga, fitness, dancing; 4) hobby; 5) massage; 6) phytotherapy; 7) homeopathy; 8) aromatherapy; 9) mineral therapy; 10) breathing exercises; 11) water procedures. Thus, having a healthy lifestyle and avoiding harmful habits significantly reduces the risk of an "emotional burnout" syndrome of the teacher;

II) **Mental health** of the teacher: 12) positive psychology; 13) humor; 14) time management; 15) art therapy; 16) scientific conferences, events, internships; 17) keeping a diary, self-analysis, reflection;

III) **Spiritual health** of the teacher: 18) spiritual practices (prayer, meditation); 19) communication with family, friends, nature, animals; 20) travel; 21) charity, volunteering; 22) cultivating a sense of peace of mind, satisfaction, gratitude and harmony.

Also, it should be noted that the use of the educational training "Effective communication is the best prevention of conflicts!" increases the quality of mastering not only the discipline "Pedagogical conflictology", other educational courses, but also the general professional, personal competence, productivity of students, teachers by saving time, resources, creative perspectives.

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OPEN EDUCATION IN UKRAINE: A CASE STUDY OF STATE-OF-THE-ART, MAJOR TRENDS AND CHALLENGES	IRYNA ANDRUSIAK Faculty of Foreign Philology Uzhhorod National University, Ukraine
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Key words: open education, open education resources, higher education, MOOCs, faculty's awareness	

Abstract: Adjusting Ukrainian system of higher education and its integration into European higher education and research area is one of the top priorities for reforming higher education in Ukraine. Although the idea of openness in education has a long history in European higher education, it is a relatively new phenomenon in Ukraine. Currently, Ukrainian higher education institutions are responding to this global trend mainly by offering distance learning courses and incorporating key elements of blended learning into teaching. Open education resources (OER) which have become a key source of learning materials for higher education on a global scale, and massive open online courses (MOOCs), which have set a new trend in the world's higher education area, are still making their way in higher education institutions in Ukraine. The present study deals with the state-of-the-art of OER and MOOCs in one of Ukrainian universities (Uzhhorod National University). Based on the survey of the current status of OER and MOOCs in one classic university, the research aims at analysing and defining the main trends and challenges for the development of both elements of open education in Ukrainian tertiary education. Research findings reflect that the major challenges facing OER and MOOCs in Ukrainian universities are faculty's low awareness of benefits they bring for educational practice; faculty's low awareness of the availability of rich pools of MOOCs and OER and the lack of institutionalised strategy towards promoting the implementation of both elements in teaching practice. The findings of the research are also indicative of another issue relating to the development of OER in Ukraine: although Ukrainian academics are eager to become or are already active OER users, a few are currently sharing their intellectual property openly and for free. The study provides a reflection on the steps to be taken to raise faculty's and students' awareness of the advantages of open education area and its two key elements.

Introduction

The biggest challenge most higher education institutions in Ukraine are currently facing is a steady decrease in the number of applicants over the last five years which leads to a considerable reduction in the university staff, faculties and even disappearance of entire universities. The present disastrous situation of Ukrainian higher education is often attributed to the post-Soviet legacy which is mostly manifested in the severe decline of humanities and social sciences, generally poor foreign language skills demonstrated by most university graduates, the absence of culture of academic freedom, and a decline in academic excellence (Dobko 2013, 77). However, in my opinion, the inability of new Ukrainian higher education to respond to the 21st century students' needs and demands and failure to see them as digital citizens in the first place have had the same disruptive effect on higher education as its post-Soviet heritage. Since most Ukrainian provincial universities have persisted in saving money in order to ensure their day-to-day functioning, investing in digitization, appropriate technical support and learning resources has never been regarded as a priority. As a result, most Ukrainian provincial universities with their traditional teaching frameworks, methods and approaches and poor facilities find it difficult to face the competition of big Ukrainian metropolitan universities, not to mention universities abroad.

In this situation responding to a globally dominant trend of openness in higher education may prove to be a good solution. Although, as stated by Syzenko (2016), seen as 'a real disruptive threat that will ultimately eat the universities' bread' (Syzenko, 2016, 208) by many, in my opinion, the implementation of elements of open education practices involving distance learning, OER and MOOCs

may provide the necessary tools for universities to meet the external threats. Adopting them and learning to use them to their own advantage will ‘most probably secure a prosperous and glorious future’ for universities (Syzenko, 2016, 208).

The purpose of this study is to conduct preliminary research into the state-of-the-art of OER and MOOCs in one of Ukrainian universities (Uzhhorod National University). Based on the survey of the current status of OER and MOOCs in one classic provincial university, the research aims at analysing and defining the main trends and challenges for the development of both elements of open education in Ukrainian tertiary education.

Following Butcher and Moore (2015), the present paper, defines OER as ‘those teaching and learning materials that are available either in the public domain or under an open license’ (Butcher, Moore 2015, 8).

Methodology

This research was conducted using quantitative methodology. The present paper reports on responses to surveys on teachers’ and students’ attitude to two key elements of open educational practices, i.e. OER and MOOCs at Uzhhorod National University. Three sets of survey questions were developed which address various issues relating to the use of OER by teachers in their teaching practice and the use and implementation of MOOCs. Data were collected via printed and electronic questionnaires. These questionnaires were sent out to different faculties at Uzhhorod National University. Responses were received from 54 lecturers and 57 students from 11 faculties (Medicine, Foreign Philology, Mathematics, Biology, Economics, International Relations, Chemistry, Physics, Information technologies, Dentistry, and Law). In total, three surveys were conducted: two surveys into the issues of MOOCs and OER involving 54 lectures and one survey into MOOCs involving 57 students.

Findings

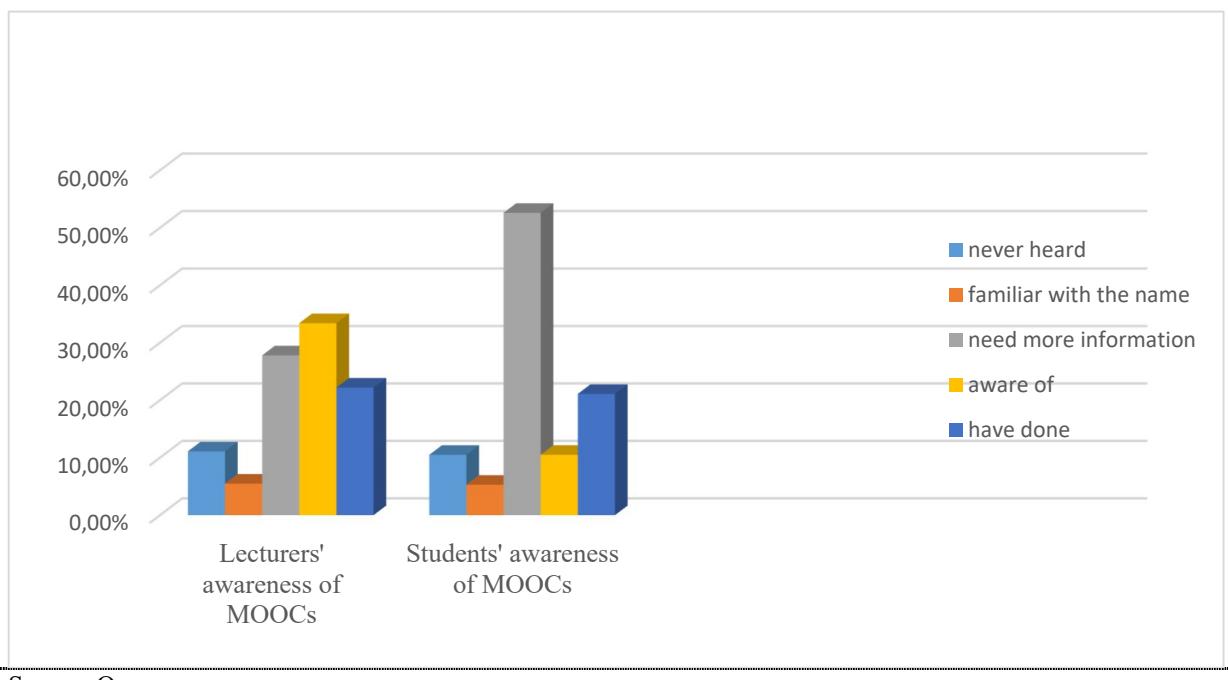
The questionnaire on MOOCs for lecturers included 9 questions which mainly focused on two issues:

- lecturers’ awareness of MOOCs as a concept and MOOCs available worldwide and in Ukraine; and
- prospects of becoming MOOC developers.

The questionnaire on MOOCs for students included 5 questions dealing with students’ awareness of MOOCs.

The chart below (see Chart 1) shows students’ and lecturers’ responses to the first question in our research where they were asked to evaluate how well they are familiar with the concept of MOOCs. The respondents were asked to choose one of the five options ranging from being not aware of MOOCs at all to having experience in doing a MOOC.

CHART 1. LECTURERS' AND STUDENTS' AWARENESS OF MOOCs

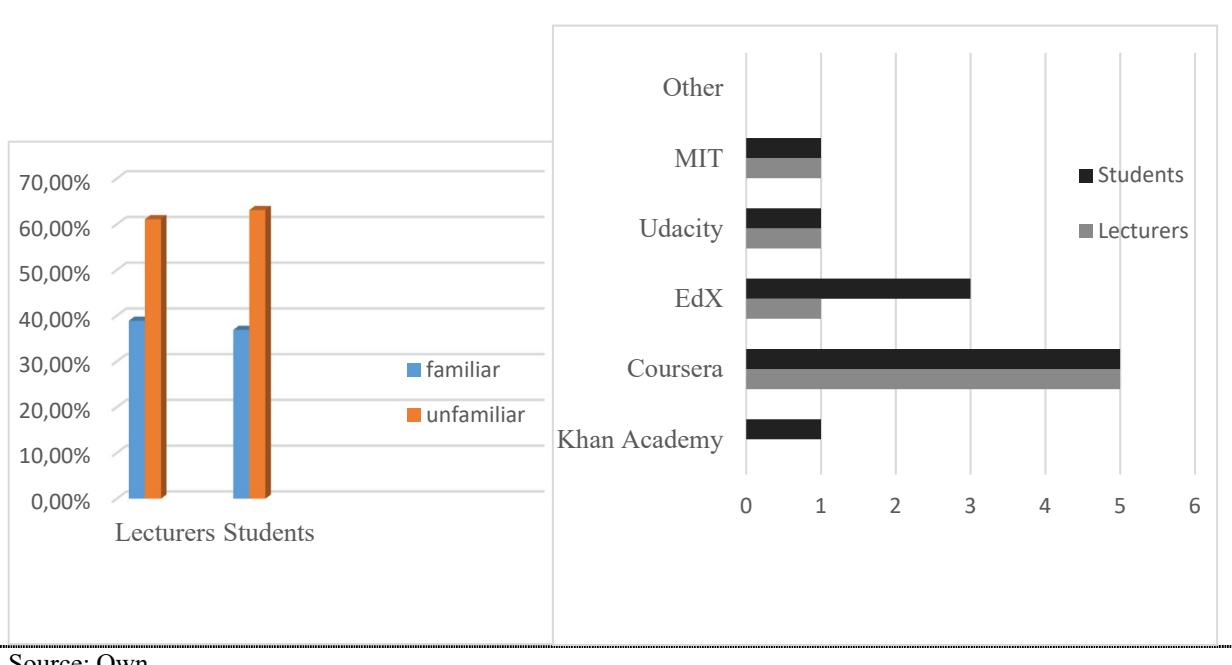


Source: Own

Chart 1 shows that, overall, students are more aware of the concept of MOOC than lecturers. More specifically, the results for the first two response options show that almost the same percentage of lecturers and students are either unaware of MOOCs or are only familiar with the name: 11,1% of lecturers have never heard about MOOCs and 5,5% are familiar with the name, while students' figures for the same response options are 10,5 % and 5,3% respectively. The response option "*I am aware of what the concept MOOC involves*" was chosen by almost three times as many lecturers as students (33,4% of lecturers and only 10,5% of students). However, more than half of the students (52,6%) have heard about MOOCs but need more information, which is almost twice as many as lecturers (27,8%). The percentage of lecturers who have already done a MOOC is almost the same as that of the students (22,2% and 21,1% respectively).

Chart 2 and Chart 3 provide data on students' and lecturers' awareness of world's popular MOOC platforms and their familiarity with Ukrainian MOOC project "Prometheus".

CHART 2. LECTURERS' AND STUDENTS' AWARENESS OF WORLD'S MOOC PLATFORMS

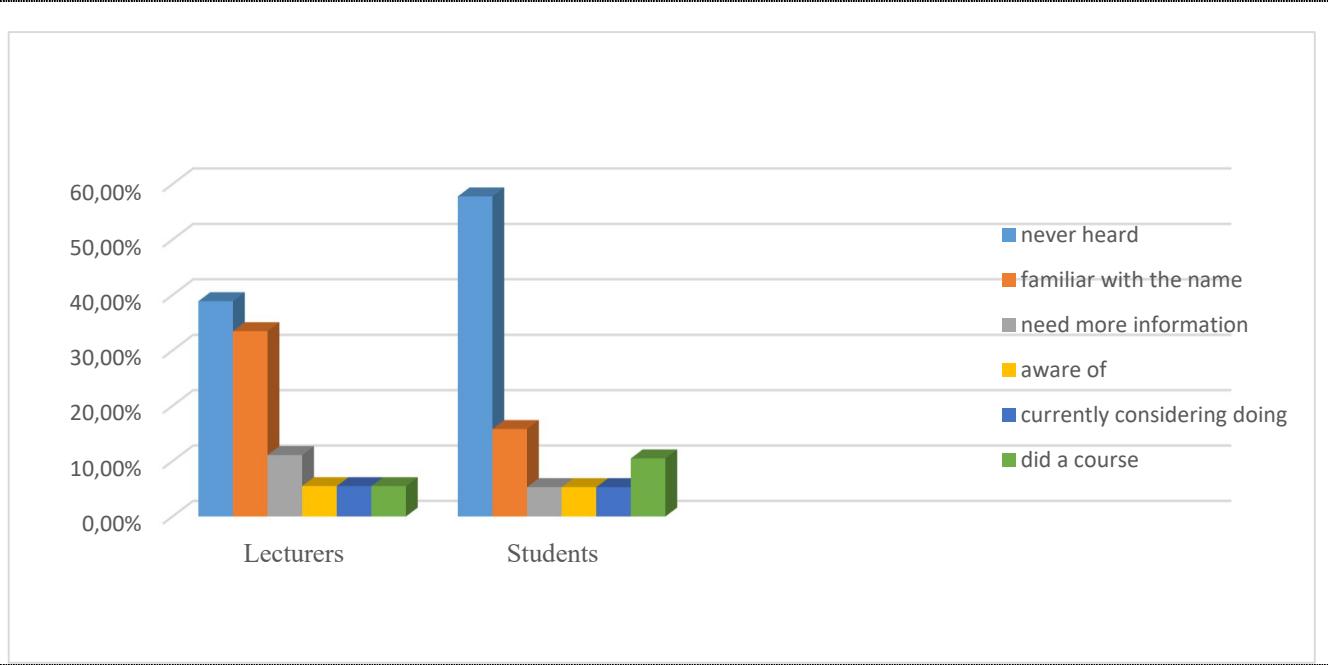


Source: Own

According to the data presented in Chart 2, more than half of students and lecturers reported that they are unfamiliar with any of the world's popular MOOCs platforms (63,1% of students and 61,1% of teachers). Of the suggested MOOCs platform options, Coursera and EdX are the most popular with students, whereas lecturers mostly prefer Coursera. None of the lecturers chose Khan Academy. No other world's MOOCs platforms were provided in the "Other" section by both lecturers and students.

The following chart shows (see Chart 3) that, overall, many more lecturers are familiar with the national Ukrainian platform for online learning "Prometheus".

CHART 3. LECTURERS' AND STUDENTS' AWARENESS OF UKRAINIAN PROMETHEUS PROJECT



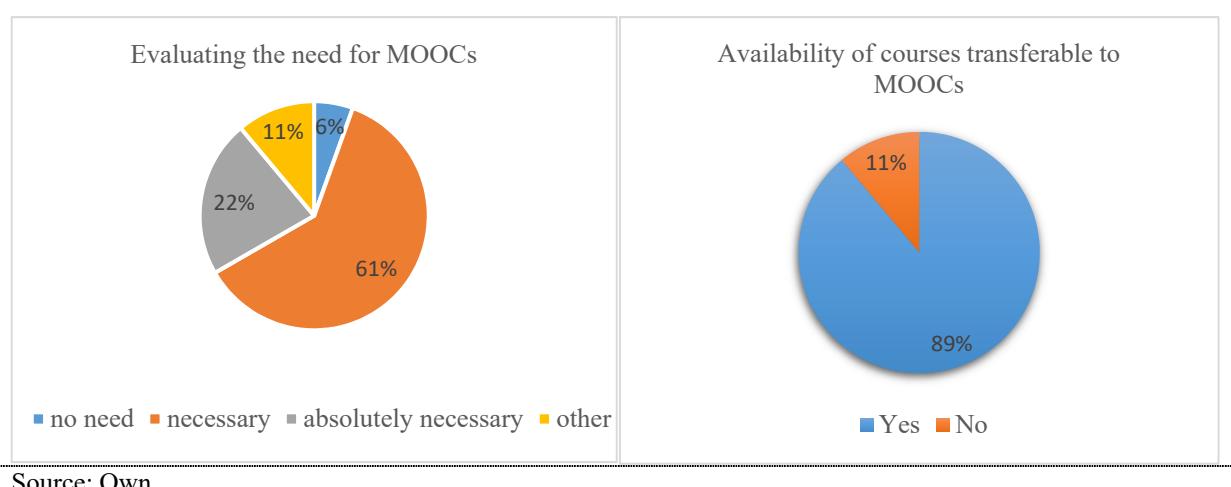
Source: Own

According to the results presented in the chart, more than half of the students (57,8 %) have never heard about the Ukrainian MOOCs platform as compared to 38,9 % of lecturers. This is consistent with

the results displayed for the next two options. Almost half the lecturers are either familiar with the name of the project (33,5%) or have heard about it, but need more information (11,1%). The percentage of the students who chose the same options is smaller; more specifically, 15,8% of students are familiar with the name and 5,3% need more information on the platform. However, twice as many students as lecturers (10,5% and 5,5% respectively) reported that they had already completed some of the courses on the platform and 5,3% of students were considering doing a course at the time of completing the questionnaire.

The questionnaire for lecturers included five questions that focused on the idea of becoming a MOOC developer. The following chart (see Chart 4) shows the lecturers' assessment of the need for and possibility of developing MOOCs at their faculties.

CHART 4. EVALUATING THE NEED FOR AND POSSIBILITY OF DEVELOPING MOOCs

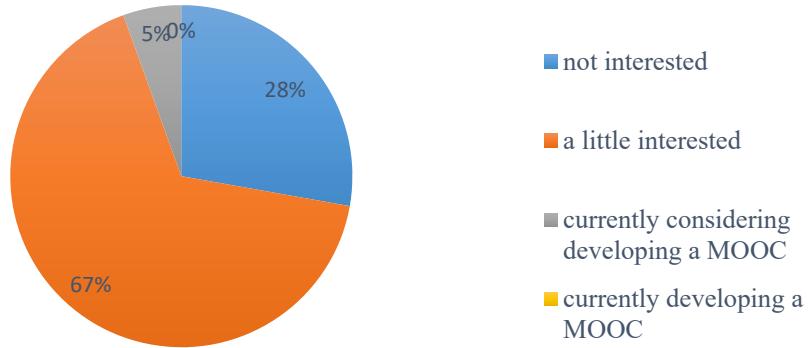


Source: Own

When asked to evaluate the need for developing MOOCs at Uzhhorod National University, the prevailing majority of the respondents reported that developing their own MOOCs were either necessary (61%) or absolutely necessary (22%). Only 6% of the lecturers do not recognize the need for creating MOOCs at present. Those respondents who chose the 'other' option indicated that MOOCs '*should be developed when appropriate*' or '*should be developed in a limited number of courses*'. According to the results presented in Chart 4, most of the respondents (89%) consider that there are courses at their departments which can be converted into MOOCs.

Chart 5 presents the results concerning how attractive the lecturers find the idea of becoming a MOOC developer.

CHART 5. ATTRACTIVENESS OF MOOCS AUTHORSHIP

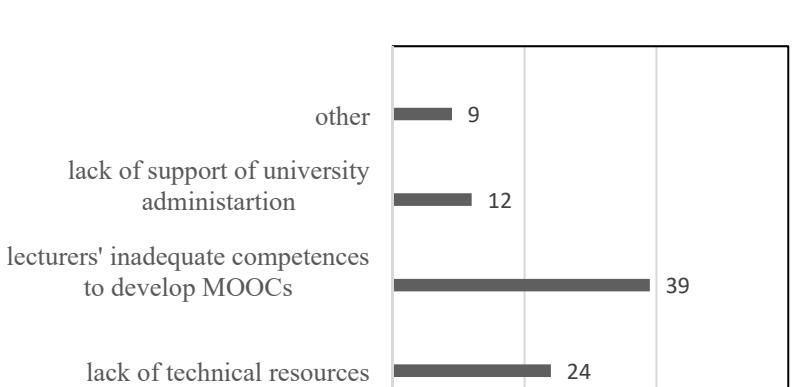


Source: Own

As it can be seen, most of the respondents reported that they were attracted by the idea of the creation of their own MOOC. More specifically, 67% of the lecturers displayed a little interest in the idea, and 5% were already considering developing their own MOOC at the time of completing the questionnaire. 28% of the respondents indicated that they were not attracted by the idea of MOOCs authorship at all.

One of the questions in the questionnaire asked the respondents to choose an option or options which they considered could pose impediments to developing MOOCs at Uzhhorod National University. The respondents could also suggest their options in the ‘other’ section. Chart 6 shows the results of the lecturers’ evaluation of possible barriers.

CHART 6. EVALUATING BARRIERS TO DEVELOPING MOOCs



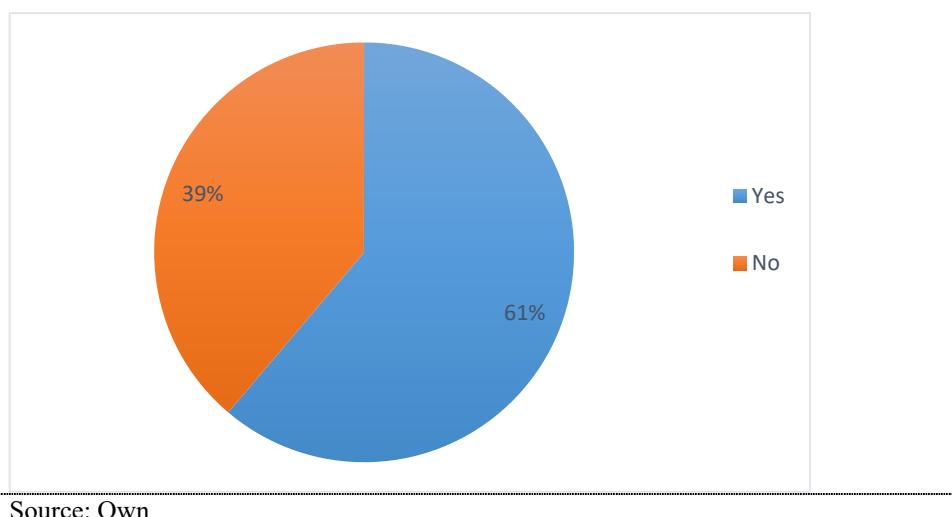
Source: Own

According to the results presented in Chart 6, the respondents defined inadequate level of knowledge and skills of the university staff to develop MOOCs as the most formidable barrier to effective MOOCs implementation at the university. This was followed by the lack of technical resources at the university which are needed to promote the MOOCs development and lack of support from university administration. Most of the responses to the ‘other’ option indicated the lack of

lecturer's motivation as a possible barrier to effective MOOCs development. One of the respondents reported that there are no impediments at all.

In the last question the lecturers were asked to respond whether they were willing to do a course in designing an effective MOOC which may be one of the solutions to the biggest challenge referring to their lack of necessary competences to develop a MOOC.

CHART 7. WILLINGNESS TO DO A COURSE IN DESIGNING AN EFFECTIVE MOOC



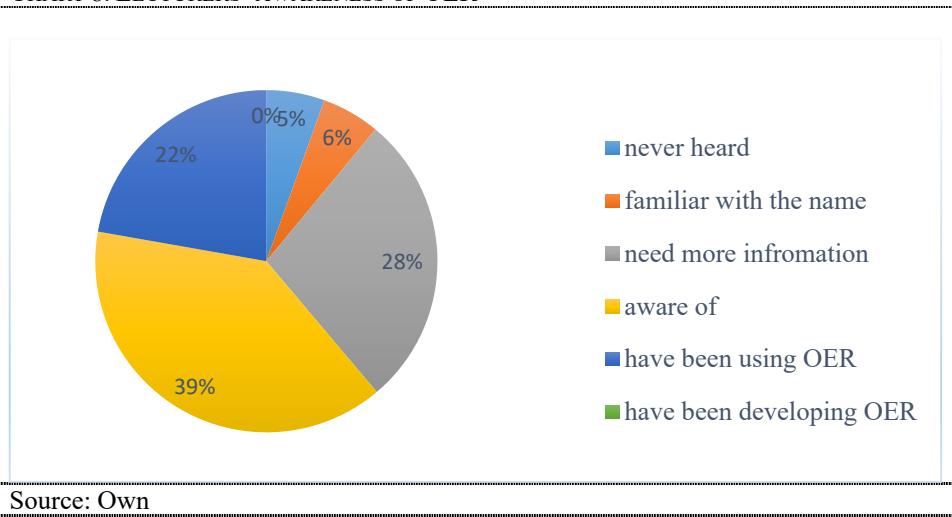
Source: Own

According to the results presented in the chart above (Chart 7), 61% of the lecturers are ready to do a course in order to gain the necessary knowledge and skills in effective MOOCs design.

The questionnaire for the lecturers on OER included 9 questions focusing on a range of issues: lecturers' awareness of the concept of OER, their status in relation to OER in general and to OER authorship in particular, and the implementation of OER at Uzhhorod National University.

Chart 8 presents lecturers' responses to the first question in the survey on OER. The respondents were asked to evaluate how well they are familiar with the concept of OER by choosing one of the six options that range from being unaware of the notion to being either an OER user or developer.

CHART 8. LECTURERS' AWARENESS OF OER



Source: Own

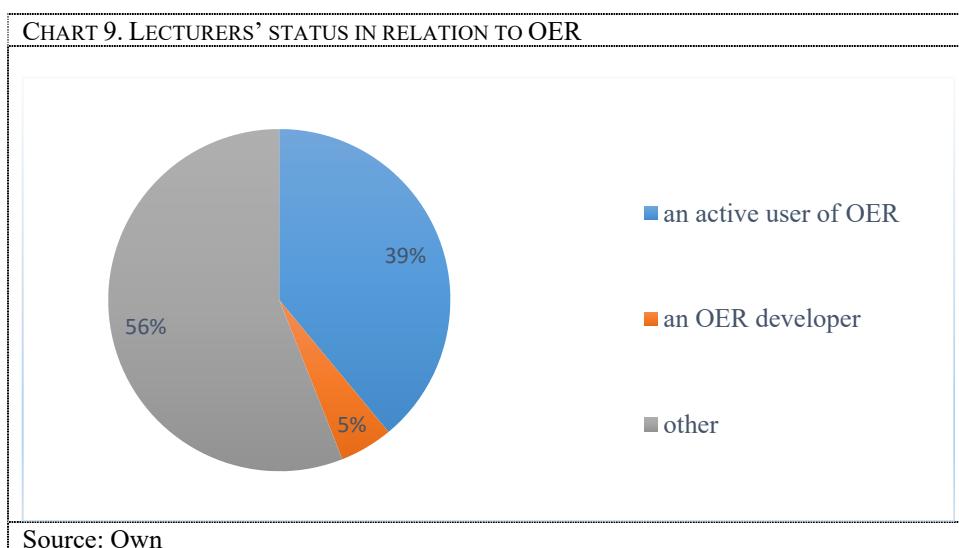
According to the results presented in the chart, most of the lecturers (39%) are either aware of the concept OER or have heard about it, but need more information (28%). 22% of the lecturers reported that they had been using OER. A small percentage of the lecturers demonstrated either poor awareness of the idea (6%) or no awareness at all (5%). None of the respondents reported developing OER.

The set of questions referring to the lecturers' status in relation to OER can be categorized into two groups. The first group deals with identifying the lecturers' status in relation to OER in general, mostly focusing on whether lecturers see themselves as OER users or/and OER developers. The other questions related to the lecturers' attitude and perception of themselves as OER current or prospective developers.

To define the lecturers' current status in relation to OER, they were asked to choose one of three options that best described their current situation:

- an active OER user;
- an OER developer and
- other.

The following chart (see Chart 9) demonstrates the lecturers' responses to this question.

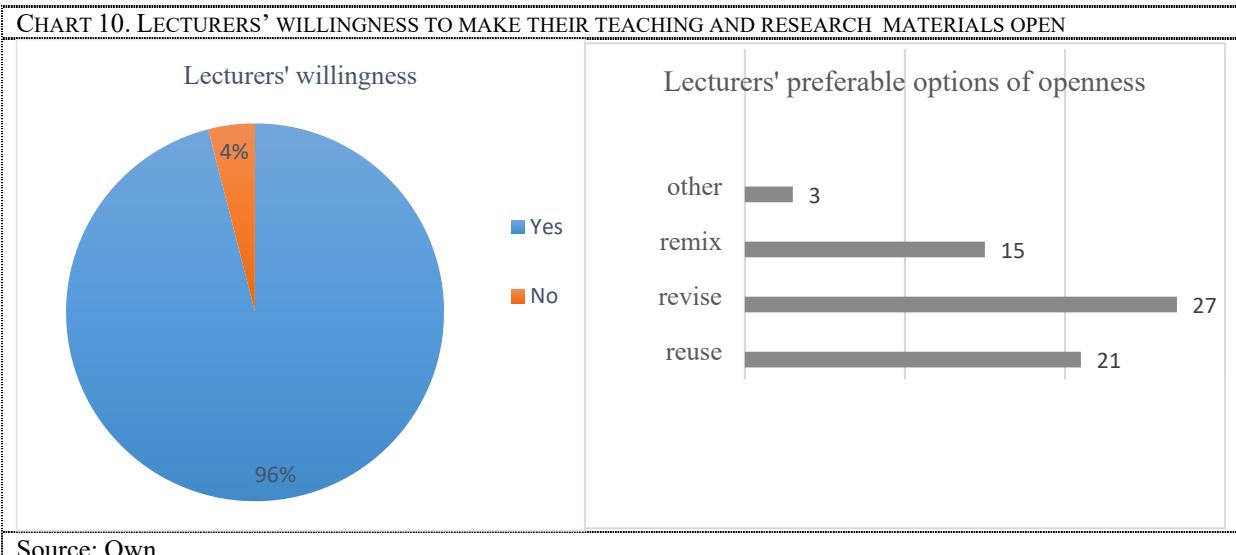


It can be seen that most of the respondents (56%) chose the third option ("other"). Their responses ranged from "*I never use OER*" to "*I would like to become both an active OER user and efficient OER developer*" with "*I rarely use OER*" and "*I am a novice OER user*" in between. 39% of the lecturers identified themselves as current active OER users, while only 5% indicated that they are OER developers.

The responses to the other set of questions show lecturers' evaluation of themselves as current or prospective OER developers. Chart 10 presents the responses to the question whether the lecturers are willing to make their teaching and research materials open and their preferable options for openness in case of a positive response. In the latter case, the respondents were asked to choose an option or options

suggested by Butcher and Moore (2015) which they considered the most acceptable as OER developers from the options below, provided appropriate references are made to them as authors:

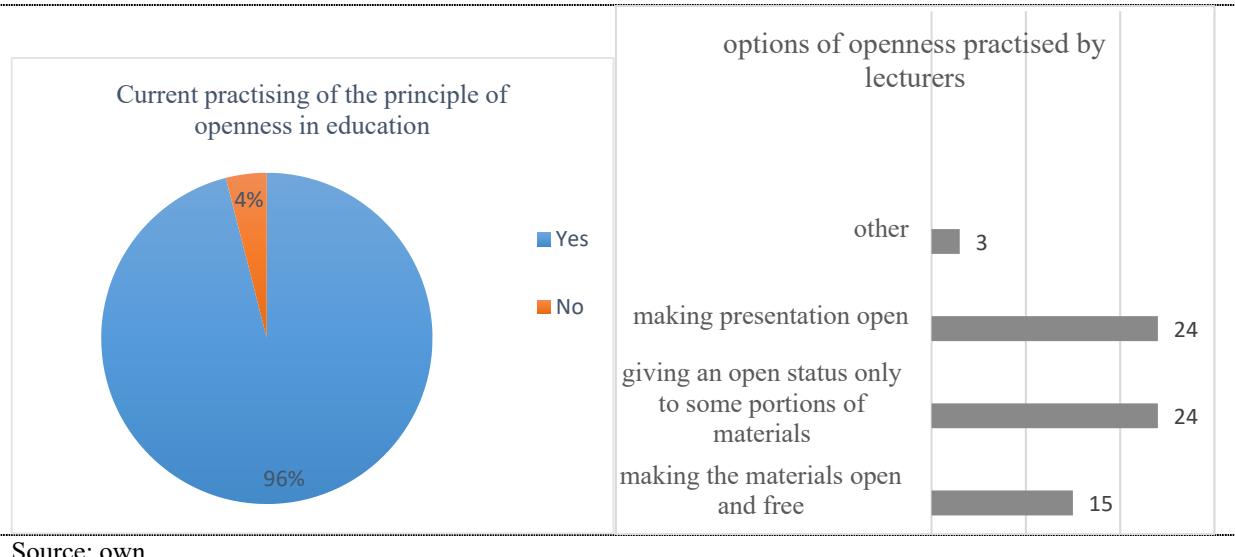
- reuse (to reuse the resource with no change);
- revise (to adjust the resource to a new learning environment);
- remix (to assemble a number of OER into a completely new resource); and
- other”.



In their prevailing majority (96%), the respondents indicated that they are ready to make their teaching and research materials open. What is more, the most preferable option chosen by 27 lecturers is revising, which means that the lecturers are willing to give their permission to introduce necessary changes to their materials to adjust them to new learning environments. The next most popular option (21 respondents) is reusing without changes which is followed by remixing (15 lecturers). Three lecturers chose the ‘other’ option by indicating “*I would allow reusing only portions of my materials containing the results of an experiment or study*”.

The questionnaire included some questions dealing with the implementation of OER at Uzhhorod National University. The responses to the next two questions show the current state of practicing the principle of openness by lecturers at the university. While 96% of the lecturers gave a positive answer to the question whether they are currently following the principle of openness in their teaching practice, most of them give an open status only to some portions of their materials (24 respondents) or/and make presentations of their courses open (24 respondents). Only 15 lecturers chose the option indicating that they make all their materials open and free.

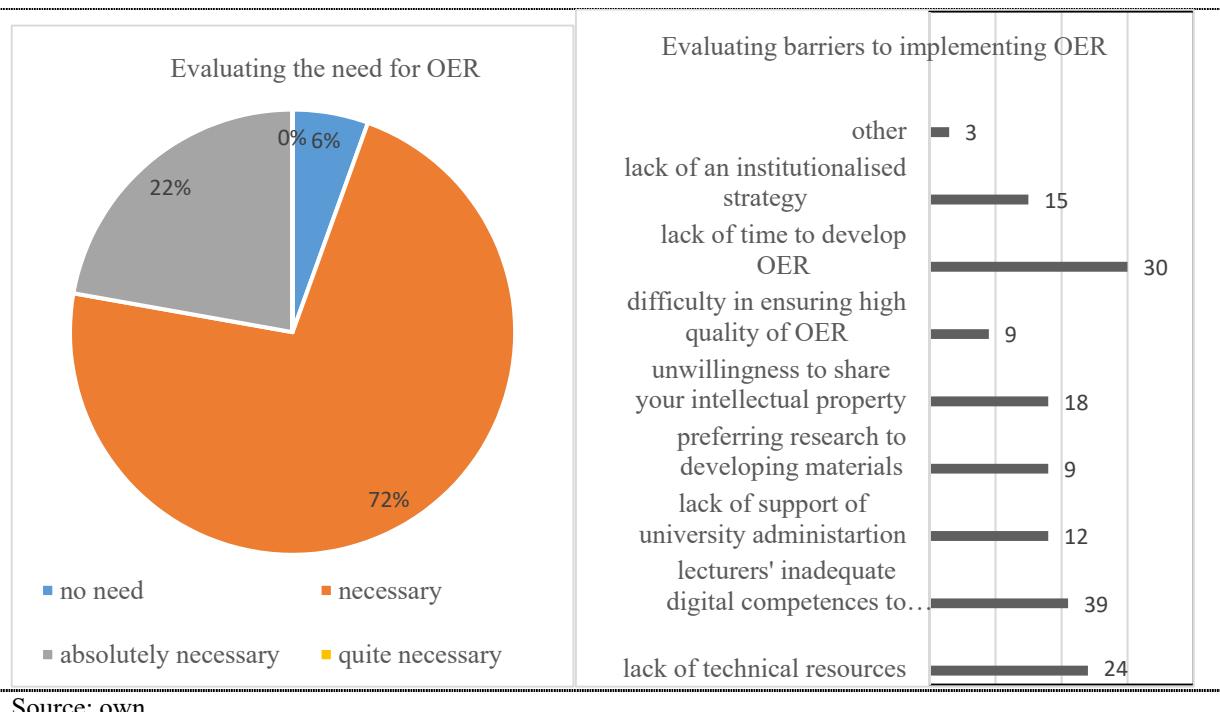
CHART 11. EVALUATING THE CURRENT STATE OF OPENNESS AT UZHGOROD NATIONAL UNIVERSITY



Source: own

In the next question, the lecturers were asked to evaluate the need for promoting the development of OER at the university choosing one of the four options: 1) absolutely necessary, 2) necessary, 3) quite necessary and 4) no need. The other question focused on the possible barriers to the effective implementation of OER at the university. Chart 12 shows the respondents' responses to both questions.

CHART 12. EVALUATING THE NEED FOR AND BARRIERS TO IMPLEMENTING OER



Source: own

According to the results presented in Chart 12, most of the respondents (72%) evaluated the need for promoting the development of OER at Uzhhorod National University as necessary. Only 6% consider that there is no need in implementing the OER policy. Most lecturers (30) indicated that the biggest challenge they are or might be facing is the lack of time to develop OER. Other serious impediments to the implementation of OER were indicated as follows (in most cases two or more options were chosen by the same respondent): the lack of technical resources (24 respondents), inadequate level of digital competences of the staff to develop OER (21), devoting most of the time to research rather than to

developing materials (18), unwillingness to share their intellectual property (18) and the lack of support from university administration (18). The lack of an institutionalized strategy was also identified as a serious barrier to effective OER implementation.

Trends and challenges for the development of OER and MOOCs in Ukrainian tertiary education

The three step-survey into the state-of-the art of OER and MOOCs in Ukrainian higher education sampled by Uzhhorod National University aimed at defining general trends and challenges present in tertiary education in relation to two key elements of open education. The present study is part of wider in-depth research into the possibilities of effective implementation of open education policy in Ukrainian higher education. The findings of the three surveys conducted with lecturers and students at Uzhhorod National University are indicative of some of the tendencies displayed by higher education institutions in relation to OER and MOOCs. To start with, the exploration of the students' and lecturers' awareness of MOOCs (both as a concept and as available courses) contributed some valuable ideas for discussion. As results demonstrate, overall, students appear to be better aware of the idea of MOOC and possibilities MOOCs provide for person's education. Although lecturers and students seem to be displaying almost the same results as students concerning MOOCs, it is obvious that balancing with students is not enough for teachers to retain their roles of facilitators, guides and leaders. To be able to attract students, to provide guidance, encourage and boost their academic rigour, teachers need to be steps ahead of the students. What is more, enrolment on MOOCs and completing them seem to be highly beneficial for teachers themselves. Apart from gaining new knowledge and skills relating to the content, doing a course enables them to get acquainted with the way the course is built and delivered and develop transferrable skills concerning the MOOC development and running. In my opinion, MOOCs offer valuable opportunities for teachers to enhance the development of skills associated with the 21st century teacher roles: those of course designer, interpersonal skills, networker and practical researcher (Badley, Habeshaw 2006).

The results of the survey displayed some of the positive tendencies in relation to Ukrainian teachers taking on the roles of OER and MOOCs developers. The facts that teachers displayed interest in designing MOOCs, reported the availability of the courses that could be converted to MOOCs, demonstrated their readiness to give an open status to their teaching and research materials and are currently practising some of the elements of openness show that the good stage has already been set for introducing elements of open education in teaching practice.

The research findings show that challenges connected with OER and MOOCs implementation can be grouped into those relating to personal attitudes and perceptions and those relating to university administrations. More specifically, personal group of challenges are indicative of the fact that there are still teachers who are not attracted by the idea of open education. This can be accounted for, first of all, by their poor awareness of the benefits OER and MOOCs offer for universities. Both OER and

MOOCs have enormous potential for higher education in terms of creating opportunities for making use and updating relevant content provided by the global resources, which can be easily adjusted to suit learners' needs and fill in the gap in the available quality resources (Dumbraveanu 2016, 185). In my opinion, a good awareness-raising campaign focused on the possibilities OER and MOOCs provide for higher education can solve the problem.

The results of the survey also demonstrated that the introduction of open education in Ukrainian higher education is still at its initial stages and mostly manifests itself in the personal initiatives of individual enthusiastic teachers. The effective implementation and promotion of OER and MOOCs require some serious efforts on the part of university administrations that should undertake the task of developing a sustainable open education strategy which will involve the participation of all the stakeholders, on the one hand, and the provision of the necessary technical support and resources, on the other.

Conclusion

The present paper presents an attempt to explore the state-of-the art of OER and MOOCs in one of Ukrainian universities (Uzhhorod National University). Research findings show that the introduction of the elements of open education in Ukrainian higher education is still at its initial stages. The study identified low awareness of benefits OER and MOOCs offer for higher education, teachers' low awareness of the availability of rich pools of MOOCs and OER and the lack of institutionalised strategy towards promoting the implementation of both elements in teaching practice as major challenges facing Ukrainian universities on the way of adopting open education policy. Serious efforts need to be taken by all the stakeholders in order to implement two key element of open education in Ukrainian tertiary education.

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Key words: eportfolio, Mahara, aims and outcomes, learning, student teacher training programme.

Abstract: Portfolio, as a tool of professional autonomous development, plays an important role in the college training of not only student teachers, but also other future professionals. Based on the principles of social constructivism and reflective approach applied in student teacher training programmes, it represents a unique collection evidencing the process and outcomes of learning. Moreover, it may also provide wide opportunities to form and evaluate components facilitating students' professional development for tutors (university teachers), involved in teacher training programmes. To integrate it meaningfully and appropriately into the curriculum of English Language Teacher Education study programme (including bachelor degree – English for Education) of the University of Pardubice (Department of English and American Studies), the eportfolio format, namely Mahara, was selected as it reflects in its technological perspective the above mentioned theoretical framework enriched with a technological dimension. As the process of eportfolio integration is gradual and longitudinal and has not started in the full extent yet, in the paper, only the initial phases of the process are described and further implications suggested. The paper focuses on the analysis and evaluation of the formal curriculum of the programme (aims and expected outcomes of the selected subjects from all the disciplines; approaches, methods and techniques used to support autonomous learning and self-reflective processes in those subjects and disciplines) and suggests possible ways of integrating Mahara into the curriculum.

Introduction

The integration of (e)portfolio into education and its advantages for autonomous and self-regulated learning has been widely discussed for many years not only in the context of the Czech Republic, but also abroad (e.g. Píšová 2007, Lukášová et al. 2014). In general, portfolio is a collection of works and materials of the particular person, which are selected, shared and reflected according to the external criteria of the educational institution and internal criteria of that individual, and which can be used for various purposes, e.g. for documenting learning of the individual and their professional development, to demonstrate their level of proficiency in the specific area, to represent achievements and outcomes of the individual in that area, and so on.

Theoretical framework

Since the paper focuses on disseminating eportfolio in the context of pre-service teacher education, hereinafter the meaning and function of eportfolio is discussed in relation to learning and teaching processes in that context of education only.

Currently, the most influential trend in teacher education is the constructivist concept (Spilková 2007, 10, see also Dysthe and Engelsen 2011, 65). Based on that concept, the learner, student teacher, is perceived as an active constructor of their conception of teaching (Spilková 2007, 11), or their professional self (see e.g. Korthagen et al. 2006 and Korthagen et al. 2013) in the process of becoming the teacher. Experiencing various pedagogical situations and interacting with other participants of educational communication, the student teacher may explore, discover and construct new concepts based on their own activity and thus deconstruct their intuitive, naive and implicit pre-concepts they have about teaching to explicit, theoretically sensitive, and rational reconstruction of those concepts (Spilková 2007, 12).

The process of deconstructing through experiencing may be supported by reflective strategies, as some authors claim (e.g. Strudler and Wetzel 2011-12). In the reflection process, the experiences are analysed, discussed and linked with theory “to help investigate the gestalts that student teachers have developed in experiences earlier in their lives” (Korthagen and Wubbels 2001, p. 45). The reflective model (see also Schön’s reflective practitioner, 1983, or the science-based practitioner) and linking theory to practice, so called realistic approach (Korthagen et al. 2001), (see also Píšová et al. 2013) represent other significant attitudes applied nowadays in teacher education.

As the underlying principles of portfolio philosophy “are often related to a constructivist approach to knowledge and learning” focusing “on the student teachers’ learning process and knowledge production” (Butler 2006, in Granberg 2010, 310), such a learner-centred pedagogical device can and has been used not only in teacher education for decades. Depending on the purposes for which portfolio is used in education, we can identify different types of portfolios. In general, we can distinguish between process (learning) and product (assessment) oriented portfolios, whose functions can be also combined for different reasons in teacher education. In the paper, we refer to the Granberg’s typology (2010) and complement it with the definitions provided by Píšová (2007) to comprehensibly synthetize the discussion of the pedagogies reflected in teacher education with portfolio role and functions (cf. Lukášová et al. 2014), and the student teacher and the teacher educator’s roles in the process of learning encouraged by the concept of portfolio. Based on that, portfolios can be categorised into three types:

1. process, reflective and learning oriented portfolios that help student teachers reflect on their learning; such portfolios document cognitive changes of the student teacher with the support of the formative assessment usually provided by the teacher educator and/or student teacher peers;
2. credential/accountability portfolios also help to document the changes in learning and may be used for summative assessment of the student teacher, thus may be referred to as product or assessment portfolios;
3. marketing portfolios/showcases, or product/summative/assessment portfolios used for representing professional strengths, attained goals, etc. of the student teacher. (Granberg 2010, 310 and Píšová 2007, 42)

Different portfolios can be used for multiple reasons in education and thus their meaningful integrating into teacher education programmes may be quite complex, complicated and long-term. Regardless of that, there are many advantages why to employ the portfolio concept in teacher education. One of them may lie in fact that it might help synthetize student teacher’s knowledge in individual professional disciplines. The synthesis, linking of content may prevent student teacher’s fragmentation in knowledge, which according

to Píšová (2007, 49) still represents a big problem in the teacher education programmes in the context of the Czech Republic. Student teacher's content acquisition documented in portfolio is also perceived, e.g. by Shulman (1998, 31-32) as its distinctive advantage because it may contribute to student teacher's development of knowledge base of teaching, namely their pedagogical content knowledge (Shulman 1987, 8-9). Moreover, in Píšová's opinion (2007, 49), portfolio may act as a link of not only content and pedagogy, but also of theory and practice, and especially may support linking of teacher educators representing the individual content components of pre-service teacher education. Next reason why to use portfolio in the context of teacher education is explicitly expressed by Korthagen et al. (2006, 1036), who say that "learning about teaching is enhanced when the teaching and learning approaches advocated in the program are modelled by the teacher educators in their own practice". Because portfolio "is widely acknowledged...as an educational concept [that] covers a wide array of learning and assessment tools and practises" (Dysthe and Engelsen 2011, 63), it may represent a challenge for teacher educators because it offers conditions for them to take professional risks and think beyond their held pedagogical boundaries in different situations to develop new approaches, which is an essential part of teachers' professional development (Korthagen et al. 2006, 1036). Therefore, the portfolio concept may bring contemporary pedagogical beliefs and assumptions discussed in the paper to life.

Due to its wide possibilities, pedagogical and ideological reasons it is necessary at first "to define what kind of portfolio should be used before the implementation process is initiated" (Granberg 210, 311) and "what, why and how' questions need to be answered" in the process of planning (*ibid.*). Concerning the format, the teacher educators may choose from paper or electronic portfolios. If the programme had already worked with the paper format of portfolio, the moment of introducing eportfolio may be seen as a chance to reflect and revise the portfolio concept experience. Strudler and Wetzel (2011-12, 164-165) summarize factors that teacher education programmes should consider when integrating the electronic portfolio into their curriculum as follows:

1. clear vision or purpose for eportfolio implementation
2. the clarity of guidelines
3. the faculty feedback on student teachers' portfolios
4. the amount of time and effort involved to manage the electronic portfolio process

The process of implementing eportfolio into teacher education may and will affect all participants of learning/teaching processes since "a common understanding of the purpose and design of e-portfolios needs to be established" (Granberg 2010, 311).

Aims and research questions

The aim of the study is to identify how eportfolio can be integrated in pre-service teacher education courses of the particular study programme(s). The questions arising from the study are as follows:

1. Is the role and functions of eportfolio in agreement with pre-service teacher education aims and outcomes?
2. How to describe and communicate the design of eportfolio to teacher educators to support understanding and integrating eportfolio into their courses?

Methods

Research methods used, such as group discussions, interviews and content analysis of programme syllabi were designed mainly as qualitative to provide a deep and holistic view of the role and functions of eportfolio in the teacher education programmes and its perception and understanding of the teacher educators. However, to ease comprehension of the context which the eportfolio is employed in, descriptive, quantitative data were also collected, namely in the process of analysing content. 41 compulsory subject syllabi divided into communicative, linguistic, literature and culture, and profession modules oriented in the bachelor English for Education programme were analysed.

To identify the role of portfolio in the teacher education programmes, it was necessary to investigate at the context in which the portfolio is (to) be used. At first, the content, aims and expected outcomes of the selected subjects from all the disciplines were discussed and analysed from the perspective of the theoretical framework described above, i.e. subject matter of the individual courses and their interrelation; approaches, methods and techniques used to support autonomous learning and self-reflective processes in those subjects and disciplines, learning through reflection, feedback, and assessment in those subjects and disciplines. Explicit (direct reference) and implicit (content reference) formulations of the links relating content and theory-practice link of individual disciplines were analysed in the categories of aims, outcomes, feedback and assessment within individual modules and between them. Second, different types of portfolio in the selected courses of teacher education were identified and their functions were described.

Next, understanding of the teacher educators' portfolio concept was discussed. Finally, based on the outcomes of content analysis and interviews with teacher educators, possible ways of redefining the portfolio concept and ways of eportfolio integration in the teacher education programmes of the institution were proposed and communicated to teacher educators.

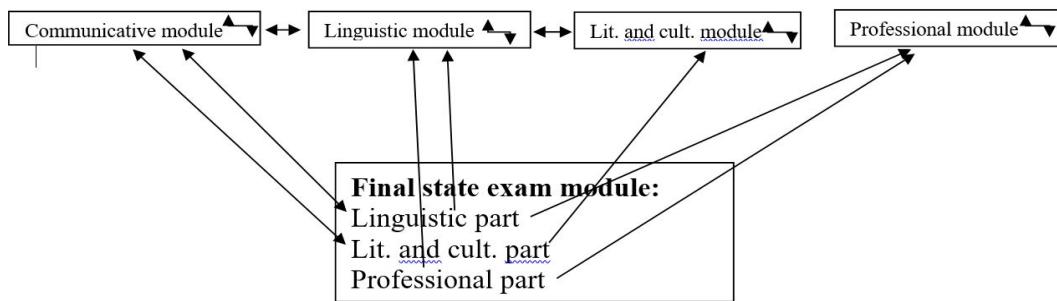
Results

The history of teacher education is relatively long in the Department of English and American studies and can be traced back to 1992, when the English language teaching programme, Fast-track educating teachers of English was established (Bitljanová, et al. 2003) and the concept of portfolio has been playing

an important role in English language teacher education in the institution for more than 14 years. Fast-track was transformed into a five-year master study programme, later due to the impact of European Union legislation (the Bologna process), teacher education was structured into two study programmes, a bachelor programme, English for Education and a master programme, English Language Teacher Education. In that period, the aims, content and structure of teacher education have been changed and keep changing significantly depending on the policy and context changes in pre-service teacher education (e.g. the accreditation process at present). Therefore, the urge to reflect these changes in pre-service teacher education in this institution resulted in the revision of the study programmes and we decided to start using eportfolio as a pedagogical device that might be a tool for performing those changes in practice. For these reasons, it was necessary to evaluate the quality of the present teacher education programmes and suggest possible ways of its redesign.

Content analysis of the selected courses syllabi (aims, outcomes, reflection, feedback, assessment within individual modules and between them)

PICTURE 1. LINKING OF CONTENT



Legend:

The lines indicate where the information about linking is given and whether the linking between modules is mutual (\longleftrightarrow) or not (\rightarrow). The linking within the module (a subject linked to another subject of the module) is designed as arrows within the frame (\curvearrowright).

Based on the evident, explicitly made cross-references in the syllabi we found out that the content of subjects within and between individual modules is interrelated with other modules both explicitly and implicitly (i.e. through using English as a communication tool in almost all subjects and during the final state exam in some disciplines). The links within and between content oriented disciplines (communicative, linguistic, literature and culture) are explicitly and openly declared and as such may help students become aware of their relation and mutual dependence, however, the links to profession oriented disciplines are mainly implicit, they are made in the profession oriented syllabi only, except for the linguistic module. That might imply that students tend to apply mainly analytical approach in their professional development and their ability to synthesize the knowledge of all the individual disciplines may lag behind.

Portfolio types and understanding of the teacher educators' portfolio concept

Concerning feedback and assessment, it must be admitted that ongoing feedback and assessment criteria supporting formative assessment are not mentioned neither clearly defined in the course syllabi and (self)reflective strategies are explicitly formulated in the profession oriented subjects only (see Table 1).

I. PORTFOLIO TYPES				
Module	Reflection	Feedback	Assessemnt	Portfolio design
Communicative	---	---	summative	collection of materials
Linguistic	---	---	summative	---
Literature and culture	---	---	summative	collection of materials
Professional	yes	---	formative, summative	multipurpose
Final state exam	yes	---	summative	product oriented, summative, linking theory and practice

Source: Own

In content oriented disciplines, only a product oriented type of portfolio is used, being only a sum of materials submitted for the purposes of final, summative assessment. Nevertheless, group discussions and interviews revealed that teacher educators provide reflective feedback in their lessons, e.g. in the courses of cultural studies. As “feedback has the most critical influence on students learning” (Hattie and Timperley 2007 in Granberg 2010, 311) and may support the development of awareness of student teacher’s cognitive learning processes in wider context, we can believe that such feedback, may, implicitly, form knowledge base of teaching in student teachers.

The courses of profession oriented disciplines were the only ones, where multipurpose portfolio design is used, supporting the development of the professional self through formative assessment, ongoing feedback and also used for summative assessment, e.g. final state exam, PRX3.

Describing and communicating the design of eportfolio to teacher educators to support understanding and integrating eportfolio into their courses

Eportfolio is “interpreted and socially constructed by teacher teams”, Granberg (2010 311) claims. Without identifying the team vision, attitude and opinions, it would not be possible to (re)define the purpose of portfolio in teacher education programme. For these purposes, team discussions of portfolio understanding and vision were arranged and portfolio concept and vision were discussed. Based on the results of those discussions and the analysis and evaluation of the portfolio concept in the courses, we decided to integrate an eportfolio Mahara into teacher education as it reflects all the underlying pedagogies discussed in the paper and adds a technological/digital dimension to pre-service teacher education. To support its meaningful integration, it was necessary to identify and describe a new eportfolio concept and

communicate the vision and purpose for eportfolio implementation to teacher educators. For these purposes, a methodology on the implementation of eportfolio Mahara to study programmes in the Department of English and American Studies of the Faculty of Arts and Philosophy, University of Pardubice was created. The methodology is communicated to teacher educators as a guideline in form of the document, which summarizes and describes the concept of eportfolio evolved as team effort, namely its functions in teacher education programmes:

- *to prevent fragmentation and strengthen integration of individual pre-service teacher education components*
- *to support autonomous learning of student teachers*
- *to develop technological competence of student teachers*

and accents the principle of learner-centeredness in that vision (describes eportfolio functions from the perspective of abilities student teachers are supposed to acquire, e.g. self-reflective strategies, identification of their strengths, cooperating with peers).

It was also agreed that in order to integrate eportfolio to teacher education meaningfully and appropriately, it is also necessary to provide support to teacher educators, especially in terms of their technological competence (e.g. in form of trainings in technological and pedagogical aspects of eportfolio, institutional coordinator for both student teachers and teacher educators) to prevent forming negative attitudes toward eportfolio.

Conclusion

To integrate the multipurpose eportfolio to teacher education, it is necessary to do that systematically, provide purposeful and clear guidelines in terms of technology and pedagogies to all participants of English language teacher education, technological and pedagogical support for both teacher educators and student teachers. The content analysis results may contribute to revise aims of teacher education courses and standardize teacher education. Nonetheless, the group discussions and interviews revealed that there are certain concerns related with the process of integration (it affects all participants, concerns about technological aspects, pedagogies, it might increase communication with students, time and effort needed, etc.). The process of integration has just started and we will see what results that implementation will bring not only to student teachers but also to teacher educators, whether they will be able to change their own practice.

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**PRESCHOOL IN SERVICE TEACHERS'
OPINIONS ABOUT THE USE OF DIGITAL
MEDIA IN EARLY CHILDHOOD EDUCATION**

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Key words: Preschool education, Digital media, ICT in early childhood education, Kosovo.

Abstract: Digital media has been shaping individuals and communities around the world in recent years. It has impacted our lifestyle and the way we do things, including the way we learn, or how we seek and where we find the information and the knowledge.

While digital media has become an integral part of our life there is still hesitation and reluctance on whether we should use and the amount of usage of Digital media in the early childhood education.

Even though we have children who at their early age become gurus of online games and other entertainment tools/apps from digital media, it is arguable whether we should use it in the contexts of education, particularly when working with children in preschool.

In Kosovo, the situation regarding of the usage of digital learning in education, among teachers is very similar to the rest of the world. There is no general consensus over the topic. There are those who consider the multiple benefits of the planned and programmed usage of digital learning in preschool education and there those who oppose to any usage of digital media in early childhood setting.

While there is an ongoing debate in this regard among academia and education policy makers, those teachers who do integrate the usage of digital learning in their work, show remarkable results in educational work, in children's' achievements and their future progression. In addition to this, digital learning provides a great opportunity to turn education process into a game and play thus making the whole preschool education more contemporary and attractive.

Introduction: Digital media at Early Childhood-literature review

Nowadays we live in a digitized world where almost all aspects of life as individuals and as societies are influenced and shaped by digitalization. According to business dictionary “Digital media is a digitized content (text, graphics, audio, and video) that can be transmitted over internet or computer networks” (Business Dictionary 2018). There is an ongoing debate in this regard among teachers, academia and education policy makers regarding the usage of digital media at early childhood education.

While we live in the era of digital media and the massive usage of handy ICT, i.e. smart phones, ipads/tablets, etc., the usage of digital media is increasing its usage in education as well, particularly in higher education and Lifelong learning, as well as in the scientific research. ‘By introducing the new era of technology like smart phones, tablets and other digital media, our lives, our communication and networking with one another has changed dramatically’ (Beka 2014).

According to a report that was conducted in seven European countries shows that: “Children grow up in media-rich homes. They are daily in contact with a wide range of digital tools however this rich-media context does not lead automatically to high use from the children” (Chaudron 2015).

Although it seems there is a general consensus about the integration of digital media widely focused on higher education on one side, it seems that on the other side there is still reluctance on whether we should use the digital media in the early childhood education. There are pros and contras in regards of using digital media at early childhood setting.

Sanchez et al in their article “In Service Teachers’ Attitudes towards the Use of ICT in the Classroom” state that: “There are those who consider that this can be beneficial for children and their teachers. But there are those who consider that there is no beneficial use of digital media at early childhood setting”. (Sánchez et al., 2012). In similar way there are teachers who welcome the use of new media (Galloway 2009), and those who consider the use of new media and ICT unsuitable to children (Miller 2005).

While there is an ongoing dispute over the use of digital media in early childhood education, there is a general understanding of its presence in the childhood setting at different forms. “Movies, television and video games reflect the tensions around childhood and adulthood in contemporary Western cultures” (Carrington and Robinson, 2009).

Therefore, technology and digital media can be effective tools in early childhood education when used intentionally and appropriately, taking into consideration each child’s age, developmental abilities, as well as social and cultural life context. Under optimal circumstances, technology and Digital media should be used when the content can enhance other activities, such as “creative play, exploration, physical activity, outdoor experiences, conversation and social interaction.” (Vandewater et al. 2007)

On one side we have children who at their early age become gurus of using online games. “Children are digital natives, but only to some extent. Most children acquire easily and quickly basic operational skills. Some have acquired also more advanced online competencies. Few use digital technologies not only as passive consumers but also in a creative way (Chaudron 2015).

Digital media helps children to form different sets of skills while they are playing. In digital play, children are able to adopt new kinds of roles, experience adventures, and expand their imagination in a new way, because the digital games offer possibilities and guidance for this in their layout. Moreover, digital play is at many times social: the children play together, create solutions, construct knowledge, and create their own, unique digital play culture. (Kankaanranta et al. 2017). Based on the outcomes of this research we are reminded that games, including learning games can be an inexhaustible source of pleasure. They help burn excessive energy, giving us peace in which to reflect and integrate learning, encourage the development of team spirit and sound team working habits, increase concentration and recall, refresh and inspire the mind, stimulate logical, creative and critical thinking, and motivate us to achieve complete more with better and more lasting results (Beka 2013).

While there are observations that children use digital technology individually rather than socially. (Chaudron, 2015). However, Chaudron considers that: “This general trend is nevertheless contrasted in some context”. In Finland, in general the use of digital technology seems much more a shared activity among family members and friends. In other countries, the shared activity resides more in communicating via online video conferencing software when members of the family are distant. (Chaudron 2015).

Countries where the usage of Digital media and ICT has been integrated within the education system have gone further in identifying the areas of development of skills rather than just mentioning the general benefits of usage of the digital media. In UK for instance: “The curriculum document (Department for Education 2013) itemizes six main areas to be taught:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions;
- create and debug simple programs;
- use logical reasoning to predict the behaviour of simple programs;
- use technology purposefully to create, organise, store, manipulate and retrieve digital content;
- recognise common uses of information technology beyond school;
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the Internet or other online technologies. (Manches and Plowman 2017).

Studies have shown that ICT, when used responsibly, can provide significant tools to support self-regulation, social interaction, sustained shared thinking and symbol manipulation in early childhood (Siraj-Blatchford and Siraj-Blatchford 2006).

We have also found that ICT can provide significant support to educators in terms of their pedagogic knowledge. The following account of some recent use of an ICT phonics programme is provided to illustrate its value. (Siraj-Blatchford & Parmar, 2011). In their research Manches and Plowman consider their work a contribution to understanding how early years computing activities relate to other learning, from cognitive skills such as self-regulation or planning to scientific experimentation and communication skills. (Manches and Plowman 2017).

But this requires a great degree of knowledge of use of digital media from teachers as well. In this way they will be able to help children as well as being able to understand and better assess children while using the digital media. An important role in teacher education in Kosovo or any other country is developing the key competencies for the teacher educators and student teachers (Beka 2015). “Teachers’ professional development needs to balance a desire to promote reflection on the role of computing in children’s everyday lives, including the need to foster thinking skills, with recognition of the need to provide non-specialist teachers with off-the shelf tools and activities to address specific curriculum objectives, recognizing that this is about more than developing competence in orchestrating children’s step-by-step activity with particular tools. (Manches and Plowman 2017).

In Kosovo we now have two standards to measure and compare the development of educators' competences. While the KCF clearly emphasizes what competences are expected for children according to their age and their development, educators' competences in the other hand shows what the competences are that educators are to develop in order to get the best for the children they work with. Faculty of Education is working in implementing both documents by preparing the future educators to be up to the task, competent and that help children develop their competences as they grow in maturity and knowledge. (Beka 2017)

Based on the research conducted in 2016 regards to teachers' use of e-portfolios, it was concluded that teachers have begun to apply formative assessment, by using portfolios and electronic portfolios. Although the percentage of teachers is not very high, the fact that they have started to apply portfolio assessment form is very encouraging (Beka & Gllareva 2016). This has shown that teachers have begun using digital tools, i.e. e-portfolios in their daily work especially in assessments. Researchers document that in-service teachers believe in the potential of technology to enhance students' learning (Yeung et al. 2014).

An important role in teacher education in Kosovo or any other country is developing the key competencies for the teacher educators and student teachers. There is an ongoing debate among scholars around the world about what those key competencies are that we aim to develop in teacher education. (Beka 2016)

Literature has shown a connection between educational technology and positive outcomes for children; however, it has also indicated that the technology must be developmentally appropriate, include tools that help teachers implement technology successfully, and be integrated into the classroom and curriculum. (McManis, Gunnewig, 2012). Technology and digital media can be effective tools in early childhood education when used intentionally and appropriately, taking into consideration each child's age, developmental abilities, and social and cultural life context (Vandewater et al.2007).

At early childhood, 0–3 years children don't need just "baby care", as that has been proven to not be enough. Child development at this age is more meaningful and educators should work closely to enable that the child gets the best of physical, social, emotional, cognitive development that will help them in the future that will help them grow or expand in the future (Beka2017).

Digital media provides a great opportunity in turning education process into a game and play while at the same time making the whole preschool education more contemporary and attractive.

Digital media at Early Childhood in Kosovo setting

In Kosovo, similar to other parts of the world there is no general consensus among teachers over the use of digital media in early childhood education.

“Kosovo’s institutions have worked hard to improve their legislation in accordance with the contemporary trends of the western hemisphere, particularly base upon European Union (EU) guidelines and regulations, as part of their commitment to be part of the EU in the future. In this manner they have made changes in the education system aiming to improve the quality of education and reform the whole education system (Beka 2015-b).

Kosovo has developed a new National Curriculum Framework for pre university education in 2011. According to the Kosovo Curriculum Framework, the education system in Kosovo enables individuals to become independent, able to fulfil their personal life and to contribute to the continuous progress, prosperity and welfare of Kosovar society (MEST 2011).

According to this relevant document, Kosovo Education should strive toward becoming a “knowledge society”. Therefore, the Kosovo Curriculum Framework has envisaged those key competencies that derive from the general aims of pre-university education in Kosovo and define the main learning outcomes that learners need to achieve in a progressive and consistent way throughout the pre-university educational system (Beka 2017).

Among other aims of the curriculum some of them are: Preparation for life and work in the context of social and cultural changes; development of entrepreneurship and the use of technological skills. (MEST 2011). So, there is a general objective of education in Kosovo to prepare the young generation for life and work including development of technological skills, i.e. digital media and ICT skills. Certainly, the developments in technology have influenced the education field as well, particularly in teaching and learning. Easy access to information which is available in modern world is a privilege that past societies lacked. Today with the technology development and globalization impact, people from all over the world have access to information almost in real time (Beka 2014).

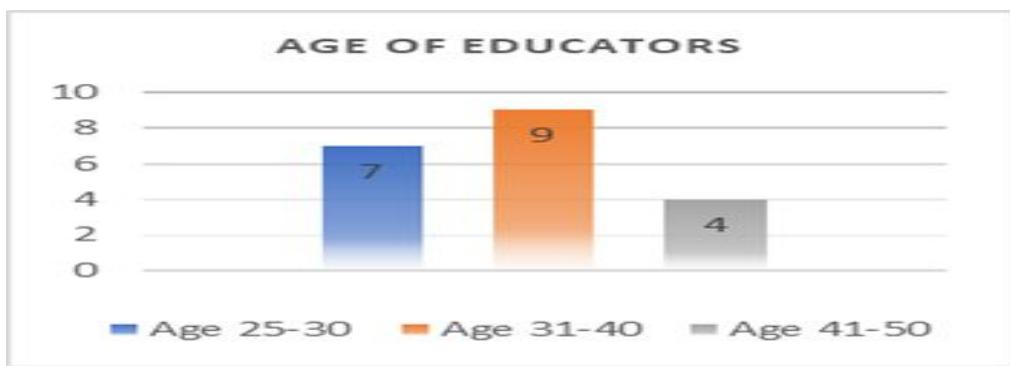
However, a difficult challenge is to overcome remains on the implementation of the curriculum remains of the methodology of teachers’ work in classrooms (Beka 2013).

In Kosovo, too, there are those who consider the multiple benefits of the digital learning in preschool education along with the preschool teachers who oppose any usage of digital media in early childhood setting. Teachers who do integrate digital media in their work show remarkable results in children’s’ achievements.

Research methodology

Research was conducted according to qualitative methodology. Semi structured interviews were organized with educators of different preschool institution in Kosovo. In total 20 educators of different age were interviewed (Chart 1).

CHART 1 AGE OF EDUCATORS



Source: Own

Research questions

This research aimed finding data by answering the following research questions:

1. What are teachers' opinions in using digital media in teaching and learning process with preschool children?
2. What are the benefits of integrating digital media in teaching and learning process with preschool children?

Research data

The results of this research survey- educators' responses are grouped into three different categories, depending on the responses they have provided. The first group included the responses of educators who did not support the integration of Digital media into early education. The second group includes the responses of educators who have had a positive attitude towards using Digital media but who have not practiced working with children for various reasons. The third group includes educators' answers that support the use of digital media and that apply it in their work with children (Graf 2).

CHART 2 SUPPORT OF DIGITAL MEDIA



Source: Own

It should be noted that educators who disagree about the use of Digital media in working with early childhood aged children are 40-50 years old, educators who support the use of Digital media but who do not practice it with early childhood aged children with are aged 31-39, while educators who support and practice the use of Digital media in working with early childhood aged children are 25-30 years old.

From this overview, it is clear that the age of educators who used Digital media in working with early childhood aged children are mainly educators who are also using Digital media for their professional development and that its usage is not fun but it's considered by them to be a necessity for the development of children.

Mostly in the first group, the educators have been shown to be very convinced to not apply Digital media to their work with children. Their decision mainly relied on the early childhood aged children. Because of the age, they consider that Digital media application at this point negatively affects the children and therefore they do not agree to support their educational activities in the use of Digital media. For this category of educators, the use of Digital media is a waste of time and very damaging to the development of children. To the question of how much you personally use technology, they said that they use very little. The use of technology by them is very challenging because they do not know English and because they do not possess necessary skills for the use of technology. One of the educators said she was forced to use the computer because she was asked by the parents to use email for communication but found this parents' request to be unreasonable because we can make the communication in person as often as we can.

According to them if we start using the Digital media with early childhood aged children then this generation of children will have weak or bad linguistic skills

From these answers, it is noteworthy that this category of educators is not clear about the importance of using Digital media by themselves and the importance of developing this competence when preparing children for life. It is not clear to them that the use of Digital media is a very important 21st century competence and that through it children can achieve much more for their academic and social life.

The second group educators have been shown to be more flexible in terms of children's usage of Digital media. For them it is important that children are able to use Digital media because it is very much sought today. But they are not likely to include the use of Digital media in activities with children because they are largely reasoned that they do not have enough conditions for this type of access to education. Some of them have stated that to use Digital media in working with children they should first "... be trained to be competent to use Digital media..." in educational activities. Selecting programs, or "... preparing educational activities for children of young age groups requires a lot of time ..." another educator said.

To the question of how much you personally use technology, they said to have been forced to use it, "... at the beginning when it was required that all the planning we make through technology, I had to spend a lot of time preparing it in the way right. I have also done various forms of assessments where children will use technology; I have found many resources for the activities I have planned to implement. But to apply Digital media in activities with children, this really will take a lot of time and effort. Maybe I will start to use Digital media in the future ..." said one of the educators.

Therefore generally, because they consider that the use of Digital media requires a lot of time, they still do not apply even though they are aware of the benefits that Digital media usage brings to the development and education of children. For these educators it would be good, if they are encouraged and practically helped to organize any activity with children through Digital media. At a time, these educators would find it easier to integrate Digital media into their daily working plans with children.

Unlike the first two groups, the third group has a completely different mentality. Even during the interview, they proved that the concept of using Digital media in their work with children is considered necessary for the development and the education of children. Helping children develop this skill is considered necessary by them. Their arguments on the use of Digital media in activities with early childhood children are "Integrating a lot of learning games through digital media, so that children's activities are as attractive as possible."

According to them Digital media activities are more creative, children are having fun, children are learning faster, children are more critical thinkers, children are able to solve the problems, children are able to search for learning games and that children are learning a lot of important thinks is easy way.

To the question of how much you personally use technology, they have declared to have been involved in various projects that have been integrated with Digital media and technology use particularly. "For me the use of technology is indisputable. Technology is part of my job. Project implementation has been a challenge in the first year of studies, but now I cannot imagine my work without technology or Digital media", one of the interviewees said.

"In the 21st century, talking about professional development and integrating Digital media into day-to-day work with children is similar to using a boat to navigate the ocean ... We must keep up to date with contemporary teaching and learning trends and Digital media is a part of the child's life, so we are obliged to include it in our professional work. This not only helps us gain professional skills, but also helps children benefit from Digital media, "said another educator.

Conclusions and recommendation

From the data of this research it is noticed that educators who are ready to use Digital media in their work with children are acquainted with the English language, clearly understand the importance of child education in the way that is best suited to them. Also, educators who apply the use of Digital media also possess the competence of using technology and Digital media in general. They are also active in the use of technology for their professional development. An important role in the creation of the professional competence of using technology has also been the program of their studies within the Faculty of Education. According to their answers given during the studies, all of their projects in different subjects have also been supported in Digital media therefore these educators have created the skills for the use of

Digital media when working with children. It should also be noted that the age of this category of educators who support and apply Digital media in educational activities with children, is 25-30 years. Given the importance of Digital media application to child education, educators have also listed numerous benefits for children to get through Digital media.

Educators who are against the use of Digital media are mainly older (40-50 years old). For them the use of technology is a great challenge. Likewise, the acquisition of English language in their ages is difficult, so they have abandoned the use of technology for their professional development. This implies that the integration of Digital media into working with children is not desirable and is not applied at all, precisely because of the lack of commitment of professional competencies for the commitment of technology. According to this category of educators, the Digital media application does not bring any benefits to the development of children. Their attitude is built based on their experience and professional development, which is not in accordance with the requirements of the Curriculum Framework and with the development of the professional competences of educators.

While educators who have positive attitudes but for different reasons do not want to apply Digital media in their work, it is necessary to be helped and encouraged to start Digital media integration. The support that should be given to these educators will help them to advance in this aspect. They need training that would develop their competence of using technology. This can be achieved if there is the determination of pre-school institutions, and other factors involved in the education system.

Based on the theory and research, the conclusions are that the use of technology and Digital media has become part of each child's life. Almost most of their free time passes using technology, applications, and games. Since they, through Digital media, tend to have fun they are not aware of the the dangers that can come with it if they do not care about the use of Digital media. Therefore, in order to help children understand and use Digital media correctly, we should plan and control the Digital media through the educational activities.

This would help them familiarize themselves with the Digital media, to use it to solve various problems, for different research projects that are very fond by them applications that really bring benefits to their cognitive development, critical and creative skills, different language communication skills and many other benefits.

In the world that we are living, to be successful as individuals, we must be familiar with the use of technology and the Digital media in general. It is essential for our individual members to develop critical and creative thinking skills, solving various problems, developing professional ongoing projects, and so on. All these skills begin to develop at the earliest childhood age. Therefore, the good preparation of educators implies the education of young generations for different professions.

If teachers include Digital media in their programs they will help children to use Digital media in proper way.

They will use Digital media for the right purpose/to learn new things.

There can always be socialization opportunities children can get from using Digital media (playing with one another, discuss things with each other, they use to be more tolerant etc.)

If they are taught how to use Digital media, they will not hurt themselves by using it the wrong way

Using Digital media doesn't take a lot of time, teachers need to make a good plan and apply with children

To integrate more learning games through digital media for children to benefit

Activities always are more creative

Children will have more fun if they learn how to use Digital media

Children will learn fast, they can become more intrigued to do new things, they can think more critically.

Children will use it to solve the problems

Children will be able to search for learning games

Children will learn a lot of important thinks easily. And most important thing is that children can build their mindset.

If we are thinking of creating well-rounded adults...), then we need to work hard to teach children at early age about the importance of using Digital media.

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**PEDAGOGICAL CHALLENGES AND
BARRIERS DURING THE TRANSITION FROM
FAMILY AND KINDERGARTEN TO PRIMARY
SCHOOL**

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Key words: Adaptation crisis, Pedagogical measures, Parents, Preschool and School teachers.

Abstract: A child's transition from family and kindergarten to primary school is the matter of interest of numerous scientific studies. Many of them indicate that starting primary school is one of the most important events in child's life, but also the turning point when a conflict might occur between primary school norms and expectations on the one hand and the child's habits and behavior gained in the family and kindergarten on the other hand. To avoid this adaptation crisis to primary school and prepare children for school, but also school for children, theorists suggest implementation of certain pedagogical measures by preschool teachers, parents and school teachers. This way they could get closer to the concept of open education, where the parents and experts are partners who learn and act together. Given that in Bosnia and Herzegovina there were not any recent researches related to this matter, in the period from January to April 2016, we conducted a research on the sample of 594 subjects: parents, preschool and school teachers who evaluated pedagogical measures that can make the transition to primary school easier. The scaled data was processed by one-way analysis of variance (ANOVA) with additional comparison. Statistically significant differences in arithmetic mean of evaluation were recorded between parents of the grade-schoolers and their preschool teachers, between preschool teachers and parents of the preschool children and finally, between school teachers and grade-schoolers. Research results show important pedagogical implications: it is necessary to intensify the partnership between family and educational institutions, the experts need to start action research with parents, the creators of the educational politics need to think about obligatory implementation of the instruments of monitoring child's development in kindergarten and in primary school.

Introduction

The transition from family environment or kindergarten, and encounter with primary school, is by rule a „painless“ experience for children. Some overcome this experience with more or less adaptation difficulties which can be neutralized by satisfactory preparation for school in both family and kindergarten environment. Balance between conditions in all environments where children spend time before starting school, as well as preparations by parents, preschool and school teachers, are some of the preconditions that can secure getting closer to the concept of open education, because open educational resources are „a modern way for education, learning and cooperation“ (Zhornova 2017, 113).

Life in the XXI century imposes need for intense collaboration between family and educational institutions with the goal of providing adequate support for children development in a delicate period of their growing up and education. That way, open education system is established where parents and institutions have active role in children education and improvement of their pedagogical competences, because open education concept does not only imply technical abilities but also the ability to apply functional pedagogical knowledge (Iiyoshi and Vijay 2008).

Many authors point out that the transition from family or kindergarten to primary school is very important event in children's and family life which can be at the same time very stressful (Hirst et. al. 2011; Rosier and McDonald 2011; Lee and Goh 2012; Greubel 2014). Given that, preschool education in our country is carried out independently on two levels - in family and kindergartens. Preschool children who do not have conditions and possibilities to attend kindergarten are in a disadvantageous position when

starting primary school is concerned. Since the coverage of the institutional preschool education is not higher than 18% due to socio-economical situation in our country, this can cause difficulties in adjustment school regime for preschool children who do not attend kindergarten.

Between preschool and school education there should be a firm connection and partnership relation with the development of child as their primary goal. However, the different researches have shown that differences existing in child's education on different levels stand as a barrier when moving from one level of education to another (Cleave, Jowett and Bate 1982; Curtis 1986; Korać 1983; Stanisavljević Petrović 2011). The biggest differences between preschool and primary school education which can lead to occurrence of adaptation difficulties when starting primary school are: differences in approaches, philosophy, pedagogical organization, methods of work etc. (Curtis 1986; Peters 2000). Plenty of works dealing with differences between kindergarten and primary school notice that kindergarten is entirely adjusted to preschooler's age and affinities and the early studying process is appealing to children. Beside this, the environment in kindergarten and school, as well as conditions set towards the children in these institutions, are significantly different (Andrek 2004); activities in kindergartens are focused on every aspect of child's personal development and they encourage their further learning and development, while the activities at school are equal and obligatory for all children since their function is acquiring knowledge and further education (Kopas-Vukašinović 2010). In world literature we find more similar viewpoints and authors who mention other great challenges and barriers in transition from family and kindergarten to primary school, such as the following: higher expectations set in front of children, more complex learning demands, different child's status within the family, kindergarten and school, etc. (Hirst et. al. 2011).

In regard to areas where children can suffer difficulties in the transition from family and kindergarten to primary school, there is some evidence that the biggest difficulties appear in the socio-emotional development sphere. In the research (McIntyre, Blacher and Baker 2006), it is pointed out that successful child's adaptation to school depends on socio-emotional, intellectual component and the behavior of the child. This finding implies that it is necessary to start with the preparations for successful children adaptation to primary school in family and kindergarten with adequate pedagogical measures, in order to avoid visible consequences in the sensitive, socio-emotional sphere of the child's development. At the same time, the school should give institutional support to the families trying to overcome the challenges and obstacles that starting primary school can cause.

Many authors have emphasized a need for connecting preschool and primary school education and learning or suggested some of the pedagogical measures and actions to decrease or ease the transition from one level of education to another (Crone and Malone 1979; Kamenov and Spasojević 2008). Even in the 1980s, the authors suggested the following measures: gradual introduction of new experiences in a child's

life, caution while introducing changes, as well as care that new people, places and situations do not appear completely strange to children so that they could experience the sense of safety in the new environment (Cleave, Jowett and Bate 1982). Some of the possible solutions for overcoming the challenges and barriers when transitioning from family and kindergarten to primary school are also: taking pedagogical measures close to children, their experience and specificities, training and employment of adequate staff in the first grades of primary school, providing better resources for supporting children who have problems in learning etc. (Woodhead and Moss 2007). The attempts in providing measures for overcoming discontinuity between kindergarten and primary school have also been recorded in the neighboring countries; suggested measures are: revival of the pedagogic role of schools and its canalization toward the child's personality aspects, a training of preschool and school teachers on possibilities of their mutual pedagogic influence on children, etc. (Kopas-Vukašinović 2010).

Methods

The research subject. Continuity in acquiring knowledge, skills and habits, as well as child's social experiences is important precondition that can ease a "painful" transition from family environment and kindergarten to primary school. Even though these are inevitable "steps in development" which await every child on their way of growing up, transitions from one level of educational system to another can represent a difficult period full of demands for better adaptation to these institutions since, first of all, children are not mature enough and also since not many attempts are made by *school itself so as to better adapt for children*. Some schools still practice outdated paradigms that show no respect for children, their personalities and their capabilities, but force them to follow the programs usually based on ideas of overcoming chosen obligatory learning contents, suited for adults and equal to all. Besides, the environment is also in favor of school experience where "there is no place for childhood", in the real sense of expression, and which represents a painful and long learning process. For this reason, it is necessary to "moderate" the contrast between the early childhood and school programs, as well as harmonize the influences of different environments where children spend their time, develop and learn, so that each of them could provide support to child's development which, in a broader sense, also represents a way towards an open education. The subject of this paper is the study of pedagogical measures that can make the transition from family environment and kindergarten to primary school easier.

Research goal. Based on the theme of the paper, the goal of the research is to verify estimates of the most important factors from the social environment of preschool and younger schoolchildren: parents, preschool and school teachers concerning pedagogical measures which can make the transition from family and kindergarten to primary school easier.

Research task. Starting from the subject and the goal of the research, research task is to determine if there are any differences among the estimates of parents, preschool and school teachers concerning pedagogical measures that can make the transition from family and kindergarten to primary school easier?

Research hypothesis. The main hypothesis of the research is: There are not any differences among the estimates of parents, preschool and school teachers concerning pedagogical measures that can make the transition from family and kindergarten to primary school easier. Our assumption is that parents of preschool and younger schoolchildren, as well as preschool and school teachers have equal estimates, and that they, according to their beliefs, uniformly act and prepare children to school and school to children alike. In this way, an idea about the open education is being realized as well as the idea about a society where parents learn from professionals which are the best and most useful ways of preparing children for one of the most important events in their lives. On the other hand, these professionals cooperate with parents and have identical perceptions concerning the best possible choice in preparation and adaptation of children to primary school.

Research variables. Parents, preschool and school teachers, included in this research, represent independent variable, whereas their estimates concerning pedagogical measures which can make the transition to school easier as well as adaptation in general, represent dependent variable.

Research procedures, methods, techniques and instruments. Methods used are theoretical analysis and synthesis, as well as descriptive method. Research technique is scaling. The scalar “Pedagogical measures that make the transition and adaptation to primary school easier” (Table 5), whose abbreviation in our research is PMT, consists of 13 points and was borrowed from Alexandros Kakavoulis (1998). Alternatives for the answers concerning estimation of pedagogical measures which make the transition from family and kindergarten to primary school easier were offered to the respondents on a Likert Scale (0, 1, 2, 3).

Population and research sample. Population is made of all parents whose children attended kindergartens and younger classes in primary schools (the first and second grade) in the eastern part of Bosnia and Herzegovina (Zvornik, Bijeljina, Doboj and Brčko), then preschool and school teachers employed in kindergartens and primary schools in the above mentioned places between the period January – April 2016. Total sample was 594 respondents, or to be more precise: 150 parents of preschool children, 200 parents of younger schoolchildren (one of the parents, either a mother or a father), 150 teachers in the first and second grade in primary schools and 94 preschool teachers. The sample was chosen by random choice and it is representative of the related population.

Research organization and progress. The research was conducted during the period between January and April 2016 on the sample of parents whose children attended kindergartens and younger classes in

primary school (the first and the second class), preschool and school teachers working with children of preschool and younger school age in the eastern part of Bosnia and Herzegovina.

Data processing. Data were processed using one-way variance analysis ANOVA with additional comparison, as well as Levene Statistic. In order to determine statistical significance of the gathered results we used degrees of freedom (df), significance level (Sig.) and indicator of size differences, that is the impact of the independent on dependent variable (η^2). Research results are given in the diagram (*Scree Plot*).

Results

Research results about the estimates of parents (of preschool and younger schoolchildren), preschool and school teachers concerning pedagogical measures that might make easier the transition to school and adaptation in general are showed according to data received by one-way analysis of variance ANOVA with additional comparison.

According to obtained significance of size differences in Levene's test (0,073), it can be concluded that the assumption on variance homogeneity was not violated and that it was justifiably used by F-test in the continuing data process and interpretation (see Table 1).

TABLE 1. TEST OF HOMOGENEITY OF VARIANCE					
LEVENE STATISTIC	df1	df2	Sig.		
2,332	3	590			,073

Source: Own

The value of F-test ($F=7,486$) at three degrees of freedom ($df=3$) is statistically significant ($p=0,000$) (see Table 2) which shows that the result of some of the groups is statistically significant.

TABLE 2. ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2964,975	3	988,325	21,007	,000
Within Groups	27757,464	590	47,047		
Total:	30722,439	593			

Source: Own

Data showed in Table 3 reveal that the preschool teachers group ($M=54,03$) has the highest approximate value (M) with standard variance ($SD=4,714$) and standard mistake ($\sigma=0,486$). This group is followed by school teachers ($M=49,28$, $SD=7,398$ and $\sigma=0,604$) and then parents of preschool children ($M=48,48$, $SD=8,078$ and $\sigma=0,660$). The lowest approximate value was calculated in the group of parents of school children ($M=47,34$, $SD=6,266$ and $\sigma=0,443$). This variance analysis shows that total difference significance is 0,000 (see Table 2) and that the results of the groups are statistically significant. Impact indicator is $\eta^2=0,09$ which is considered as medium impact, according to Cohen's criterion (Cohen 1988), and it reveals that real difference is between medium values of the medium size groups. In order to determine which groups have significant differences, the Tukey's HSD test was used.

TABLE 3. DESCRIPTIVES

Respondents	N	M	SD	σ	95% Confidence Interval	
					Upper Bound	Upper Bound
School teachers	150	49,28	7,398	,604	48,09	50,47
Preschool teachers	94	54,03	4,714	,486	53,07	55,00
Parents of preschool children	150	48,48	8,078	,660	47,18	49,78
Parents of schoolchildren	200	47,34	6,266	,443	46,47	48,21
Total:	594	49,18	7,198	,295	48,60	49,76

Source: Own

Additional comparisons by the Tukey's HSD test show that foremost difference was between parents of schoolchildren and preschool teachers ($I-J-(6,692^*)$), significance being on the level $p<0,05$ ($p=0,000$). Then, the difference between preschool teachers and preschool children was determined ($I-J-(5,552^*)$); its significance level is $p<0,05$ ($p=0,000$). The following difference was between school teachers and preschool teachers ($I-J-(-4,752^*)$), with the significance level of $p<0,05$ ($p=0,000$). Statistically significant difference was also determined between teachers and parents of schoolchildren ($I-J-1,940^*$), its statistical significance being $p<0,05$ ($p=0,045$). Significant difference was not determined only between two groups of parents (of preschool children and young schoolchildren).

TABLE 4. MULTIPLE COMPARISONS

(I) Respondents	(J) Respondents	Mean Difference (I-J)	σ	Sig.	95% Confidence Interval	
					Upper Bound	Upper Bound
School teachers	Preschool teachers	-4,752*	,902	,000	-7,08	-2,43
	Parents of preschool children	,800	,792	,744	-1,24	2,84
	Parents of schoolchildren	1,940*	,741	,045	,03	3,85
Preschool teachers	School teachers	4,752*	,902	,000	2,43	7,08
	Parents of preschool children	5,552*	,902	,000	3,23	7,88
	Parents of schoolchildren	6,692*	,858	,000	4,48	8,90
Parents of preschool children	School teachers	-,800	,792	,744	-2,84	1,24
	Preschool teachers	-5,552*	,902	,000	-7,88	-3,23
	Parents of schoolchildren	1,140	,741	,415	-,77	3,05
Parents of schoolchildren	School teachers	-1,940*	,741	,045	-3,85	-,03
	Preschool teachers	-6,692*	,858	,000	-8,90	-4,48
	Parents of preschool children	-1,140	,741	,415	-3,05	,77

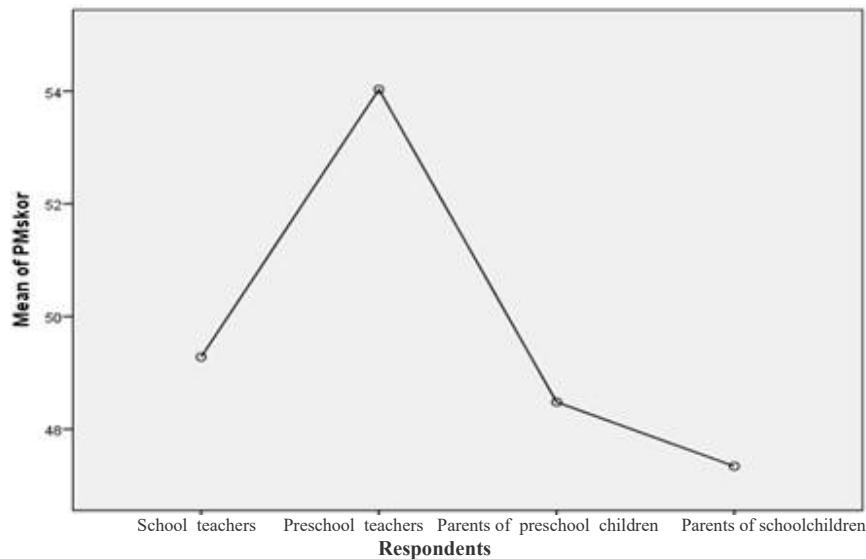
Source: Own

Note: * The mean difference is significant at .01 level.

Diagram 1 shows incidence of a broken line between four groups of the respondents: school teachers, preschool teachers, parents of preschool children, and parents of schoolchildren. Based on the chart, it can be concluded that the highest difference is between preschool teachers and parents of preschool children,

then between school and preschool teachers, and the least difference being between parents of preschool children and parents of schoolchildren.

DIAGRAM 1. SCREE PLOT



Source: Own

Data showed in Table 3 reveal that the first determined difference was found between medium values of the groups: preschool teachers ($M=54,03$; $SD=4,714$ and $\sigma=0, 486$) and parents of schoolchildren ($M=47,34$, $SD=6,266$ and $\sigma=0,443$), which can be interpreted as a consequence of a poor background knowledge about the topic among the parents of schoolchildren. Conversely, preschool teachers, in accordance to their profession, and as defined by the Program of preschool education (Spasojević, Pribišev Beleslin and Nikolić 2007), prepare children for primary school. In line with their role, preschool teachers expressed in their estimates significantly greater trust in the „power“ of pedagogical measures, by comparison with parents. So, perceived difference, medium size, can be explained by different roles in the lives of children. Preschool teachers approach this question professionally on the assumption that they are familiar with basic theoretical precepts about the transition and adaptation to primary school, while parents estimate measures that can make the transition and adaptation easier according to their own experience with children who recently started school.

The following established difference is between preschool teachers ($M=54,03$; $SD=4,714$ and $\sigma=0, 486$) and parents of preschool children ($M=48,48$; $SD=8,078$ and $\sigma=0,660$), who presently prepare children for school, which is a significant and often crucial event in their lives (Hirst et. al. 2011; Rosier and McDonald 2011; Lee and Goh 2012; Greubel 2014). Is the difference in estimates a consequence of different roles in the lives of children, a lack of thematic conversations, parent meetings, workshops and other forms of partnership related to the subject, or of parents being under the influence of the experiences in their environment (other parents, older children etc.): these are questions for future research. When this

difference is concerned, the theoretical thesis that one of the biggest problems of the contemporary family is institutional support (in this particular case, preschool teachers in kindergartens) was affirmed once again. With their help and support, parents of preschool children can acquire important information and knowledge about the pedagogical measures that can make the transition and adaptation to primary school easier, because preschool teachers approach this problem from the professional standpoint and parents intuitively or under the influence of the traditional views of the environment.

Especially unsettling data from our research is that preschool teachers ($M=54,03$; $SD=4,714$ and $\sigma=0,486$) and teachers ($M=49,28$, $SD=7,398$ and $\sigma=0,604$), both experts in the work with preschool and schoolchildren, estimate differently pedagogical measures that make starting primary school easier. If we take into consideration that preschool and school teachers during the course of their faculty education have common subjects such as pedagogy, family pedagogy, or pedagogical psychology, then theoretical knowledge about this topic, as fundamental in their practice, should be equal for all of them. The question remains if these people encounter in their practice with obsolete attitudes and traditional heritage that regard roles of kindergarten and school separately, so that maybe this could be the reason for the difference in their estimates? Although, at the beginning of the paper, we underlined that preschool and school teachers, as factors from social surrounding, have crucial role for the development of children and their learning process, our research revealed that preschool teachers show more faith than school teachers in the pedagogical measures that make the transition and adaptation to school easier.

Statistically significant difference between medium value estimates of teachers ($M=49,28$, $SD=7,398$ and $\sigma=0,604$) and parents of younger schoolchildren ($M=47,34$, $SD=6,266$ and $\sigma=0,443$) points to a conclusion that teachers and parents estimate measures that make the transition from family or kindergarten and adaptation to primary school differently. School teachers and parents underwent this period recently, together with children, and is still a new experience for them, but obviously they had a different experience of the event based on their roles. While parents experience a child's transition from family or kindergarten to primary school less times, school teachers are in a much better position to estimate the pedagogical measures and procedures that make the transition to school easier since their working career is much longer. This could be the reason why teachers in their estimates showed more faith and optimism concerning the pedagogical measures that make the transition from family or kindergarten to primary school easier, in comparison to parents of children who recently underwent this life phase.

Results gathered in our research differ from those gathered by Kakavulis (1998). Possible cause is the difference in time as well as social context, better rights for both children and parents and therefore different expectations by parents regarding kindergarten and school, as well as educational system as a whole. Also, preschool teachers and teachers, being the experts in the education of preschool and younger

schoolchildren, are not legally bound to form better partner relationships between themselves – these are formed exclusively on a voluntary basis. Many authors (Krstić and Zuković 2017; Rosier and McDonald 2011; Polovina 2009; Woodhead and Moss 2007; Geiser, Horwitz and Gerstein 2013) indicate that forming partner relationships between family and educational institutions is a necessary step that benefits children. In this way, it would be possible to get closer to the concept of the open education, learning society, different subjects exchanging useful information with the same goal – to help and support children in a more successful adaptation to primary school.

Latest research that focuses on the perception of parents, preschool and school teachers concerning the transition from kindergarten to school points to a conclusion that parents and school workers are aware of the significance and difficulties in transitioning from family to primary school, but that nobody among them implements appropriate methods for providing adequate support to children (Urbina-Garcia 2014). Therefore, we believe that strivings to make the transition to school easier by preparing parents for this important event were previously recorded in theory. Polovina (2009) thinks that the goals of the program intended for parents should be: supporting children adaptation to school; strengthening parent competences for this role and harmonizing the effect of social factors, parents and teachers above all, in order to form a constructive partnership and provide support for children in their educational process.

Apart from preparing children for primary school, we are deeply confident that it is necessary to prepare a school for child as well. This is also confirmed by some other authors who believe that all institutions (family, kindergarten, school) have a task to realize sufficient and intensive communication and favorable conditions for the successful start of a child's education and his future learning accomplishments (Greubel 2014).

Implementation of pedagogical measures that make the transition and adaptation to school easier should start in the family because, as research shows, a family and responsible parents are key figures for children's mental health. Parents' actions and quality parent-child relationships have direct implications on a child's development in early and preschool age, as well as their learning accomplishments and school behavior. This is why it is so necessary to provide information to families about starting primary school because it improves parents' confidence in this institution and also contributes to children's better results in this and later periods (Woodhead and Moss 2007).

Conclusion

The research on children's transition from family or kindergarten to primary school has been the center of attention of the scientific public for a long time. Its focus is on finding new methods and actions that could make the transition to school easier and which would also redefine the role of parents, preschool and school teachers in preparing children for school but not preparing *school for children*. With this as a

starting point, this paper establishes the connection between theoretical approach to the problem and its empirical part. The existing theoretical knowledge on pedagogical measures which make starting primary school a lot easier for children was used as guidance for understanding the situation in practice. Respondents who have participated in our research showed that one of the obstacles on the way to the open education is a different perception of family and experts on such an important issue as children's transition from family and kindergarten to primary school. Therefore, our starting hypothesis has been rejected.

Harmonizing estimates between parents and experts on this issue is important since many authors find a direct link between children's socio-emotional development and their behavior when transitioning from family and kindergarten to primary school. There, it is emphasized that parents, preschool and school teachers should provide children with necessary social skills needed for successful transition and adaptation to primary school. Preschool period is of a special importance for developing social competences which will enable children to successfully overcome intellectual challenges when starting primary school.

The results of our research refer to several important conclusions, but also pedagogical implications important for parents, preschool and school teachers who prepare children for primary school. These are:

- It is necessary to harmonize estimates and opinions from educators and parents of preschool children concerning pedagogical measures which can make the transition from family or kindergarten to primary school easier because they are the most important factors from social surrounding which affect children and prepare them for the most successful start of school as possible. It can be achieved by intensifying mutual contact, organizing information-advisory dialogues, organizing panels or parents' corners, or providing parents with useful information via didactic printed materials.
- Preschool teachers need to be initiators of the action research where they, while preparing children to kindergarten, would gather information from parents on what to expect and what sort of professional help is needed to prepare children for school. On the basis of these findings, they could take concrete steps and actions in practice and work with both children and parents as well as prepare them for this important event.
- Preschool and school teachers should be acquainted with pedagogical measures which facilitate starting primary school even during their academic education for future profession. This can be achieved by introducing new areas into the syllabus that deal with preserving continuity of children development and learning when transitioning from family environment or kindergarten to primary school. The second possibility is organizing mutual programs on professional training for preschool and school teachers,

organizing panel discussions among the staff, their mutual attendance at the professional and scientific conferences and being up to date with the scientific periodicals on the related subjects.

- Creators of educational politics should consider obligatory introducing observation protocol and similar instruments into kindergarten and primary school whose goal would be to monitor child's development and progress firstly by preschool and later by school teachers. A special emphasis in monitoring should be on transition from kindergarten or family and adaptation to primary school.

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Key words: LMS, eLearning.

Abstract: The basis of most elearning systems is software that represents the interface between users and elearning courses. This kind of software is referred as the Learning Management System (LMS). The todays' well-known LMS is Moodle software. This software is used not only in many universities, but also often in the manufacturing sphere for basic or further training of employees. In addition to LMS Moodle, there are currently many other LMSs that offer different options for all elearning activities. These activities include, in particular, the administration of courses and users, the creation of courses and the interaction between the tutor and the student. This article aims to compare individual alternatives to LMS Moodle. The first part of the article will focus on common and distinct features of different LMSs. In particular, the difficulty of installation LMS will be assessed. The second part of the article compares the functionality of individual LMSs. In this section, LMS control will be evaluated from user and course administration point of view. Also the options and ways of creating courses will be evaluated. The last part of the article compares the LMS from the point of view of the students of the courses. Finally, a practical example of LMS selection will be introduced. In this example, the LMS will be used for elearning courses at the small Aviation School. Conclusion of the article can serve as a guide in deciding which LMS for elearning to use with regard to the projected range of the entire distance learning system in an organization.

Introduction

Many of today's users and elearning course makers are likely to have met with LMS Moodle. This LMS is used in a variety of organizations and educational institutions regardless of the field of education. Aeronautics and training of airline workers (pilots, technicians and others) is no exception (see, for example, Janiga, Rojček, Černak 2017). LMS Moodle is a very comprehensive system that offers a tremendous amount of opportunities to create and manage elearning courses and carry out all the activities that are necessary for the proper functioning of distance learning. However, in some cases, especially in small institutions, LMS Moodle may be too robust. Although it is possible to use it, many of its functions remain unused. For many small organizations that use elearning in some form, for example, the number of users is not high, nor is the amount of available courses high. In addition, the number of lecturers is very small, in many cases it may be only one or two lecturers. Therefore, it is possible that such an organization will want to choose another LMS. According to (Ingwersen 2017 or Capterra Inc. 2018), a variety of different LMSs is available with different properties and offered under different types of licenses. The question is what criteria to take into account when choosing an LMS.

It is quite clear that there can be many criteria. It is probably not possible to give an accurate list of all possible criteria which have to be taken into account when selecting an appropriate LMS. For generalization, it is possible to divide them into several groups, for example, according to the following questions (Ingwersen 2018):

- Why do you need an LMS?
- Which LMS features are essential for your training needs?
- Who is your audience?

- What is the skill level of your admins?
- What is your budget?
- What expectations do you have?

Not all criteria common to most organizations will be equally relevant to all organizations. For some organizations, one of the criteria may be crucial, while others may have very little or no weight at all. The selection of criteria for this article corresponds to the view of a small Aviation school with a small number of instructors and not too high number of students (future pilots). All students of this Aviation school are motivated to study by acquiring a pilot license or by retaining it. These are lower types of pilot licenses which students (pilots) use for leisure activities rather than as a source of income. In addition, the involvement of instructors is on a voluntary basis. Instructors prepare for teaching or teach in their free time, and their potential income from this work is not essential for them because they have a different main job. The Aviation school budget is often greatly influenced by the number of students enrolled. For financial reasons, this type of organization cannot afford to hire a full-time IT specialist who will be responsible for hardware and software side of the whole elearning. From these input conditions, the following main criteria were set for the selection of LMS:

- License type and price;
- Installation;
- Setup difficulty;
- Restrictions;
- Community support;
- Technical difficulties of course development;
- Description and explanation of criteria

License type and price - As with other types of software development, LMS is developed by a number of developers. In some cases, LMS developers work for a software company (full-time job), in other cases it may be an association, or an open community that develops LMS in their free time. The way LMS is developing corresponds mostly to the type of license under which LMS is offered. There may be the following types of licenses:

- Free and open source LMSs;
- Freemium LMSs;
- Paid LMSs;

In the first case, LMS is distributed, for example, under the GNU license or under any of the Creative Commons licenses. Some of these types of licenses give the user (in our case the Aviation School) the right to freely use the LMS without paying any license fee. However, some licenses may be restricted for commercial use (for example, CC BY-NC - Creative Commons Attribution Non Commercial Use). These kinds of licenses cannot be used for LMS in our case, since education of pilots is paid and is therefore a commercial activity. The source codes of LMSs are available for many LMSs that are distributed under these licenses. This enables to modify selected LMS precisely for the needs of the organization. In our case, however, this is not important, as there will probably be no software developer in the aviation school who would do the adaptation.

The second type of licenses for LMS is the so-called freemium license. In this case, the LMS is usually also available for free, but the number of LMS courses or the number of users who may have an LMS account is limited. The number of unpaid users or courses is sufficient for a simple deployment, but in the case of aviation school this number will not be enough. Extending the number of users or courses is available after payment of license fee. The license fee mostly depends on the number of users or courses added. For some LMSs with this license, the number of users or courses may be unlimited, but only basic features are available in the LMS. To access more advanced features (such as exporting test results, creating user groups or courses, etc.), you must pay the applicable fee. In addition to providing advanced features, this fee often includes user support, that is, help with setting up and managing the LMS.

The last type of LMS license is a paid license. LMS is therefore not available for free but only for a fee. This fee may be one-off or periodic. In the case of a one-off fee, it is not necessary to pay additional money for using LMS. This license may or may not include an upgrade to a later version of LMS. For a periodic fee, it is necessary to pay regularly for the use of LMS. The pay period is very often one year. Periodic payment usually includes upgrading to the latest current version. The amount of the fee may be dependent on the number of intended LMS users, or may be independent of that number.

From the perspective of a limited-budget of Aviation school, a criterion will be chosen for the type of license, which excludes LMSs or set the criterion as highly disadvantageous for LMSs which cannot be used free of charge.

Installation requirements

- Another possible criterion that affects LMS selection is the way how it is installed and the location of the installation. There are two options to choose from - installation on an own (or leased) server or cloud based installation. Cloud based installation means that an LMS server is run by an independent company that offers to users the possibility to use LMS services. The user (Aviation school) does not have to deal with the installation of LMS or does not have to deal with the maintenance of hardware needed for LMS

operation. It only focuses on creating and managing courses and LMS administration associated with students. This way of installing and operating LMS is almost always paid depending on the number of users or LMS functions. The advantage is that it is not necessary to invest money in the purchase of the necessary hardware or in its maintenance and repair and in the staff who maintain the hardware for the LMS. Another advantage is the fact that the latest version of LMS is always available for the cloud based installation. Moving to a newer version of LMS is done automatically from the user's point of view without causing it. A limiting factor is the fact that a very small amount of LMSs is provided in this way and that the features offered by the LMS may not meet all requirements of the Aviation School.

If, for any reason, an Aviation school chooses the installation on its own or leased server, it is necessary to pay special attention to server services and server software, which must meet the LMS installation requirements. Most LMSs use an installation scheme called LAMP (sometimes supplemented with the JAVA technology). This abbreviation originated from the words Linux, Apache, MySQL and PHP, that is, the designation of the operating system and software used. For the Linux operating system, any free distribution (e.g. openSUSE, Ubuntu, CentOS) with the appropriate minimum kernel version and versions of some libraries can be used. Likewise, paid distributions (such as Red Hat Enterprise Linux, SUSE Linux Enterprise Server) may also be used. However, there is no need to waste money on a paid distribution, because the free distributions are absolutely sufficient for the majority of LMS.

Because students are accessing the LMS remotely, it is necessary to have a Web server running on the operating system. Linux distributions include the Apache HTTP server that can be used for LMS. For LMS running, it is also necessary to have a database containing user data and all the contents of the individual courses. For this purpose, the MySQL database environment (or MariaDB) is very often used on Linux servers. For some LMS, another database environment, such as PostgreSQL, is required. Both of these database environments are available free of charge, and it only depends on the requirement of a specific LMS environment which one has to be installed. The activities and requirements of LMS users (students and administrators) are handled through PHP scripts. PHP module needs to be added to the Apache HTTP server or to or other HTTP server. However, the requirement to install PHP is not unusual, and it is already prepared when installing the Linux operating system. The LAMP installation scheme can be used for LMS without any license fee, which is its undisputed advantage.

In addition to the LAMP, Microsoft-based solutions can be used, specifically on the Windows Server operating system, along with IIS (Internet Information Services). However, this solution may not be appropriate for some LMS. In any case, this is a solution to which you need to purchase the appropriate software license, which is extra cost compared to the LAMP scheme. However, if an organization (Aviation school) for some reason is running Windows Server and the license is purchased, it is not

necessary to purchase additional hardware for the LAMP scheme. In addition, it is not necessary to buy any new hardware for LMS. It is possible to use so-called web hosting service, in which the content of the web server is user-controlled (by Aviation school) but the hardware is owned by the company providing the web hosting. When using a web hosting for LMS purposes, it is necessary to compare the offered web hosting services with LMS installation requirements. Not every webhosting offers all services needed for proper LMS functionality. When deciding whether to purchase your own hardware or how to use a web host for LMS, it is necessary to compare the purchase price of the hardware (including its maintenance and renewal) and the price for web hosting. Where an Aviation school already owns the hardware for some reason, it will be better to run LMS on this device. In other cases, it may be more convenient to use webhosting services.

Setup difficulty

For installation of LMS, however, only the installation scheme (e.g. the already mentioned LAMP schema) is not important. It is also important to know in advance whether any additional libraries or utilities are required for the functionality of a particular LMS. Some specific libraries may only be available for some Linux distributions. The installation itself can take place in automatic or manual mode. When installing LMS automatically, a setup script runs, which takes the necessary steps to install the LMS, and then sets all the necessary parameters that are required for LMS running: This installation method is very convenient and many LMSs offer it. The manual installation process requires more experience with installing the software on the server. However, it can offer more control over the setting of LMS parameters and LMS integration on the server. If possible, it is more convenient to use the automatic installation method. The method of installation should also be included among the LMS selection criteria, although its weight may not be of prime value.

After installing and launching the LMS, the next step is to set up the LMS work environment (e.g. selecting the appearance of an environment, organizing items on the main page and on the courses pages) and other administration of the environment (adding and administering users and courses, creating courses templates and so on). Some LMSs provide an intuitive interface for managing user accounts and managing courses, others can be a bit confusing. Similarly, it is the case with other activities. It is not easy to set the value of this criterion for each LMS, as the user can easily judge the installation until the installation itself. The only guideline can be user documentation, from which he can try to estimate how challenging the LMS setting is after installing it. Documentation is usually available without LMS installation. The value of this criterion will also be highly dependent on a particular evaluator, because one way is very simple and easy to understand for someone, and for others the same way can be difficult or complicated.

Restrictions

Another set of LMS selection criteria is the assessment of the various limitations that occur in LMS. When using LMS for users from the Czech Republic, it is desirable that LMS is localized to the Czech language. Not all available LMSs have this localization available. Another requirement for LMS features can be, for example, its connection to social networks such as Facebook, Twitter and others. This connectivity is not offered by all LMS. However, it is important to be aware of what the LMS users will be, and whether the requirement for social networking is crucial, or whether it will only complement other features without frequent use. However, it may be important to have a link with e.g. Google docs. This feature allows you to access shared documents that can be accessed by other non-LMS users. The limiting factor may also be the maximum number of users or courses that can be managed by LMS. This limitation may be based, for example, on the type of license (as described above) or on the LMS system architecture. Similarly, some more advanced administrative features, such as grouping users into classes, and so on, may be available to a limited extent. These restrictions may not only have the origin in the license type. It can be a simpler and less sophisticated LMS, which, however, for its simplicity can attract some users. Other complementary features that are not necessary for LMS functionality include, for example, user chat, whiteboard, etc. These features are not likely to be used by all students involved in LMS, but they can make it easier for them to communicate with other students. However, there are several ways to solve the unavailability of these features in the LMS (e.g. creating a closed Facebook group).

Community support

LMS ratings should also include a measure of community support for LMS deployment problems. In this case, the community is a group of experienced users who have extensive experience with a specific LMS and can help those who are just starting to implement LMS. By supporting community, there are various discussion forums where a less experienced user can write their problems and more experienced users can advise them. Discussion forums mainly concern LMS administrators and tutors who are creating and preparing courses. However, support of the community may also include the creation of various add-ons to LMS (especially when it is an open source LMS). Such add-ons can suitably extend LMS functionality, for example, when creating courses. In addition, there may be different templates for new courses, which will greatly facilitate the work of just starting tutors. Also the video tutorials created by other users of the LMS are very useful. While community support is not critical to LMS selection, it can be very helpful when working with LMS.

Technical difficulties of course development

The last set of criteria refers to how to create training courses. When looking at the LMS from this point of view, it is necessary to have an idea of how the courses will look. Obviously, if the courses are for example only with text supplemented with pictures, development of the course will probably not be a

problem. A worse situation can occur if we plan to add different interactive elements to the course. Their creation in different LMSs can be very different and in some cases not intuitive. In addition, it is necessary to pay attention to the formats in which different multimedia content can be inserted into the course. Generally, video support is good. However, the problem may occur with Flash content (this technology is already in decline, but older media content has not yet been converted to a newer format), interactive SVG (scalable vector graphic) or if Java applets are used.

It is also important to export and import courses in LMS. In addition to this option, it is also necessary to monitor the formats in which courses can be exported or imported. A similar situation is in tests where you should not miss the possibility to import or export test questions in any of the standardized formats (e.g. Aiken, GIFT, QTI, XML, etc.).

Working with criteria

Previous paragraphs have described areas that can greatly influence the choice of LMS. From the described areas, various criteria are created depending on user preferences (Aviation school). However, the LMS selection procedure does not end. The user must assign the appropriate value to each of the selected criteria. In some cases, determining the value of the criteria is easy because it is a comparable numeric value (e.g. the maximum number of users). For other criteria, it is first necessary to develop a rating scale and then set the value of the criterion for each LMS. Determination of the assessment scale is performed in a standard way, which is described in detail in many sources of multi-criteria analysis (e.g. Department for Communities and Local Government. 2009). Also, when setting the weight of the criteria, we proceed in the usual ways.

Once values and weights have been assigned to all the criteria, the LMS can be evaluated and the most appropriate one can be selected. It is possible that the differences between the resulting criteria values will be very tight for several LMSs. In this case, you can proceed as follows. In the case of unpaid LMS, virtualization software (such as Virtual Box) can be deployed on a regular PC with a virtual server where the LMS can be installed and can be compared to a practical comparison. Although the virtual server will not have the necessary computing power, LMS can be tested and compared in all of the above areas. Other workers who will be able to create elearning courses can participate in the evaluation.

Conclusion

When creating this article, it was found that there are more than 50 different LMSs. In many functions, LMSs are very similar, but many also have different specificities and differ from others. In the article, LMSs are not compared, because many criteria depend on the purpose for which the LMS will serve. Even though the model case for which the LMS is to be selected, it is not possible to specify specific criteria values. Each evaluation is burdened by the evaluator's individual view, so it is generally not possible to

decide that an LMS is better for the particular case than the others. It is only possible to state that there are many high-quality LMS available. Setting criteria in an organization is not usually the decision of just one worker, but is based on discussions of a wider work team. This is the only way to achieve a truly high-quality choice of LMS that will then be used for elearning.

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LUDIC METHODOLOGY AND ITS APPROACH IN ALBANIA	KOZETA NOTI
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Key words: ludic methodology, satisfaction, teacher, participation

Abstract: The great radical changes in the Albanian society after the 90s, changes that brought not only a new approach to social developments and new models of country development, defined necessarily a new approach of the Albanian school to new models of educational and teaching .In general, Albanian society found itself unprepared and catapulted into a new reality that faced new ways of thinking, i.e. new *formamentis*, a process that requires a long way, new forms and models of collective consciousness development, accompanied by collective cultural, social, and naturally political catharsis. The Albanian school has made great efforts and concrete steps for an adequate approach to the new social, economic and political reality open to the world, to multiculturalism. The topic of education as a play is an actual theme since 20 years in the pedagogical models of the Albanian school after the 90s, which is incorporated into the great topics of the pedagogy of the play through the continuous training of the teachers, through special attention dedicated to faculties where new teachers are being prepared in. All this new journey started with the invitation that the Council of Europe made to Albania in the 96s to review the Albanian curriculum in order to enable the transition from total centralization to decentralization; the introduction of new teaching models for contemporary teaching and learning. This study focused mainly to see the progress of the ludic methodology, education as play in lower secondary education, was applied in 37 schools in the major cities of Albania. The quantitative and qualitative research method was used in this paper, through the questionnaire distributed to 1517 pupils and 14 focus groups with teachers and 9 with school headmasters. According to the results, it was noticed that students prefer this approach, and even in those rare cases it is applied, they feel themselves included and appreciated by their teachers. On the other hand teachers, though theoretically, recognize the value of ludic methodology, but in fact they are still far from its frequent application and rarely use—especially in chapters' review or free classes.

Introduction

Our children still go to school because they have a duty to go to school. They study because they have a duty to study. They answer in class because they have a duty to do it. However, in today's world, in today's school, when more and more young people are expected to know their value as small citizens, when more and more are expected to know their rights, they are less and less responding "blindly" to what is the 'duty' if it does not correspond also to what is satisfactory, to what is pleasant, to what is playful. Increasingly in Albania teachers like 'complaining' that today's boys are no longer 'those of yesterday, that "today's classes do not follow you like yesterday's," that "there is no longer pleasure of being teachers ". The drop-out data for active and mostly passive school drop-out increased. The secret of bringing them to school?! Will it be pleasure?!

Indeed, the change took place: the Albanian society has changed. At least constitutionally, the decisions seem to be collegial. The institution of the family has been transformed: the patriarchalism has given way to smaller and more collegial nuclei. Often in young families, those who decide are also the children. The school, as an integral part of the social triangle, seems that it has also changed: in the curricula, in the syllabuses, in the theories of learning. The teacher, in most cases, remains what s/he was: the one who talks constantly, the one who questions, the one that does not motivate but only orders and wants to be followed. But the boys, the students are those who already live in the schools of the future. They are those who do not follow you if they are not convinced of the need for action. They are the ones that do not

answer you if the question is not engaging or stimulating. They do not react anymore as far as they do not care of something!

The answer to today's 'inconveniences' in the school world remains the motivation. However, their motivation of going to school is no longer a duty but interest, stimulation and need, and why not even pleasure. *The duty* that is the obligation to learn produces in the student learning but not acquisition: the contents are in fact stored in the short-term memory and soon forgotten. *The need*, motivation linked to the left cerebral hemisphere. The student is aware that he needs to develop specific knowledge to achieve a goal. *Pleasure* is "motivation essentially linked to the right hemisphere, but which can also involve the sinister becoming, in this way, powerful" (Balboni 2002: 38).

Pleasure at school or "Friendly school", the place where we learn to be entertained, is not only one of the main objectives of the changes in Albanian education but also the celebration of all the training of recent years where Albanian teachers have been involved since the 90's. The approach of alternative texts to totally renovated curricula requires Albanian teachers a completely new approach to classroom models and teaching methods. The curricular objectives cannot be achieved if we continue to treat the class with archaic models and if there isn't inclusion of the pupils in the first person, in the teaching. Students are the first and foremost people who need to be considered and valued for their peculiar characteristics, to make them unique and different from each other, then we must necessarily think of a didactic methodology that can adapt the operational proposals to the various "identities" of individuals and of groups in different contexts. Therefore, it is necessary to call on the teachers to their first responsibility, which in our opinion is to adapt the methodological proposals to the classroom contexts, to re-elaborate the indications on their personal characteristics, their teaching style and the learning styles of their students. So, if the pleasure at school and not only is totally connected to play (the game), then the ludic method is the answer.

In pedagogical discussion and realistic and successful practices since the 1970s in Central Europe and American countries, it seems that play, such as meaningful learning, seems to be a complex and engaging experience not only because it activates the pupil globally, but above all because it allows the student to participate, to be protagonist, to learn through practice, in a constant and natural way, by increasing their knowledge and skills.

There is, therefore, a dual form of involvement of the learner in play: on the synchronic level (during the game) s/he is motivated and involved multisensory; on a diachronic level (in the game's repeating - and innovation) his/her skills are constantly evolving and motivation is renewed as they tend to constantly overcome the limit. (Dynamic Learning Character).

Then there is a third factor that is particularly relevant for our perspective: play, if it is perceived and experienced as such, engages and entertains at the same time. The harmonious union of commitment and fun thus recalls the intrinsic pleasure of the activity without denying the cognitive or psychophysical effort. Although much has been discussed, even if nowadays friendly school is one of the curricular objectives, even if the values of the use of play in learning are widely recognized, there are still a couple of 'barriers' and distrust. There is distrust in that it clearly separates the school - synonymous with effort and commitment - from play - intended as recreation. In addition, erroneously, the game is identified as a child-only activity. "*It marks the whole span of human existence, even with differentiations that vary to "the game". It is rich in the noblest qualities that someone can recognize things and express himself.*" These are models fed by the family and the school itself in which we do not fail to underline how much the game belongs to the "recreational" sphere. (Caon, Rutka,2004: 39)

The subject of this study is to verify the positive incidence of the ludic methodology in the scholastic performance, as perceived by the students. How much teachers are attached to this methodology, and what application tools are used. To implement the study, we conducted questionnaires and focus groups using the quantitative and qualitative method of scientific research. It was considered appropriate in this study, in the first part of it, that quantitative methods can be measured by observing the questionnaires as perceived by the pupils of the 9-year school system in Albania, the lesson with ludic teaching methodology. Whereas the focus groups, qualitative approach elements, help us understand how much teachers and school directors know and accept the values of using the methodology of play. They also help us understand what essential elements are in use today in the Albanian school by teachers.

How much are teachers affected to this methodology and which instruments are used to organize focus groups with teachers and school directors.

The questionnaire was used to collect data so that we have the opportunity to review the attitudes, opinions, behaviors, and feelings of the sample to be examined for the 'play approach'. At the same time, the questionnaire helps us to study the impact of play/ ludic approach on the motivation and excitement of learners to prove this hypothesis and to answer research questions.

The population that served for conducting the questionnaire was pupils of 9-year schools, 2016-2017 school year, 37 schools in the largest cities in the country where the number of public schools is even higher. 1517 questionnaires were distributed and filled in order to do this paper.

The questionnaire was distributed in the 9-year schools of Tirana, respectively in 12 schools in urban and rural areas; it was also distributed in 5 schools of the main cities of the country: Shkoder, Durrës, Vlore, Korce, and Elbasan. The most comprehensive representation of the pupils in the country is intended

to have a full picture of the reality of the progress of education reforms in Albania where one of the most important factors of change is precisely the use of modern methods in teaching.

Focus groups with teachers were done in the same districts and schools where the questionnaires were conducted. We have provided an even clearer picture of what the teachers know, in what way they prefer and how they use their new teaching models in their classes, focusing more specifically on the play methodology which is the focus on this study. Through the questions of focus groups, we have taken into consideration to highlight the element of pleasure, motivation and efficiency of the students themselves, whether in their pupils. As far as focus groups are concerned with school principals, discussion questions were intended to clarify the situation of leadership recognition with new teaching models and especially how these leaders are at the same level of preparation as their teachers, knowing them the necessity and value of new teaching models, what tools they make available to their teachers for the best achievement of the goals for a friendly school.

Instrument and its reliability

A Pilot test was conducted in advance for the questionnaire. The analysis done at this stage had to do with Cronbach's alpha and resulted to be in acceptable levels. (0.7 permitted limit). The result of the pilot test showed that questionnaires were formulated correctly and clearly.

The questionnaire used in this study was to identify the pupils' perception of the lesson orientation. This questionnaire contains 45 questions on a Likert-type scale, through which the learner can assess autonomously the teaching style. Assessment is presented in the form of points (1 = never, 2 = rare, 3 = sometimes, 4 = often, 5 = very often) and shows how often the use of the play methodology is consistent with satisfaction and motivation and positive learning outcomes.

An important part of the statistical analysis of the information obtained from the questionnaire is also factorial analysis to analyze more in detail the main factors affecting class motivation and satisfaction and to proceed further with the construction of the multiple linear regression equation. For this we have grouped the factors that appear to us as independent and dependent variables.

Independent factors related to the classroom teaching style are measured in total with 12 questions, while dependent variables that explain the motivation and satisfaction of the classroom pupils are measured with 15 questions in total, so it is necessary to analyze each of the two groups of variables initially, calculating the Cronbah's Alpha reliability coefficient, which for variables in total has a value of $0.871 > 0.7$ (permitted limit) showing that the reliability of all these questions together is high. While the dependency coefficient for dependent variables has a value of 0.888, too, a high reliability coefficient. If we have a look at the Cronbah's Alpha coefficient and the factorial weights of each of the independent

variables, we emphasize that the limited value of the factorial weights which allows the factors to continue the further analysis is 0.4.

Focus groups

There were 14 focus groups with 112 teachers of 9-year schools in 6 Albanian cities; respectively 8 teachers in a focus group. 4 focus groups were organized in Tirana where there is the largest number of schools, and in the other five cities, respectively, were conducted 2 focus groups per city. There were held 9 focus group with school directors; 4 were conducted in Tirana and one focus group in other cities.

In the organization of focus groups with teachers and school directors, 4 stages of focus group organization were respected. The two focus group organizers (an animator and the other observer) were taken away from the many moments of openness of teachers to the education system, to the gaps and needs by trying to analyze answers through points of interest of this research.

In order to avoid theme outgrows and prolongations, the animator took care to keep the discussion at concrete points and in relatively short responses. We took care of the atmosphere in the way that it was friendly and motivating. They were never told either their answers/opinions were right or wrong. Thus, we believe coming up with sincere, direct and fruitful answers to the research question of this study.

Data analysis

After data collection was completed, a database was created with the collected data as well as their processing and analysis. In accordance with its descriptive, correlational and predictive nature, data from this study were analyzed through software packages SPSS 17.0 and Excel. The type of analysis applied in this study has followed these steps:

Initially, it was extracted the factorial's structure of the instrument and then Cronbach's alpha coefficients were measured to see the reliability of the internal consistency of the scales used in this study. Factorial analyzes highlighted the one-dimensionality of each scale that is introduced below.

Scale for motivation measuring. The results of the Kaiser-Meyer-Olkin test highlighted the adequacy of the sample for the factorial analysis KMO = .71. The spherical Barlet test ($\chi^2 (3) = 1039,865$, $p <.001$) showed that the correlations between the variables (questionnaire statements) were appropriate for conducting the analysis of the principal components (factors). The factorial analysis showed only a factor with factorial loads above .80 that attests an one-dimensional scale and which explains 80% of the variance. Table 1 describes the contents of the statements in the scale composition and the factorial loads.

TABLE NO. 1 COMPOSITION AND FACTORIAL LOADS OF SCALE FOR MEASURING MOTIVATION.^a

Statement	Whole statement	Factorial 1.
q.7	Teachers in my school encourage me to attend school	.925
q.14	My school teachers push me to get more involved	.917
q.19	My school teachers push me to love education	.856

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Alfa Cronbach's for this scale resulted .88

Source: Own

Scale for the efficiency of teaching measuring. The results of Kaiser-Meyer-Olkin test outline the adequacy of the sample for the factorial analysis KMO = .848. The Barlet'ssspherically test (χ^2 (6) = 1704.970, p <.001) found that correlations between variables (questionnaire statements) were appropriate for conducting the components (factors) analysis. The factorial analysis revealed only a factor with factorial load over .80 that attests a one-dimensional scale and explains 79% of the variance. Table No. 2 describes the contents of the constraint statements and the factorial loads.

TABLE NO.2 COMPOSITION AND FACTORIAL LOADS OF THE SCALE FOR MEASURING THE EFFICIENCY OF THE TEACHING HOURS

Statement	Whole statement	Factorial 1.
q. 5	I take part actively in the classroom.	.913
q. 11	I do not get tired much at home with my assignments.	.910
q. 16	I do not feel tired at the end of the classroom.	.875
q. 21	I can overcome the tasks assigned to me.	.875

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Cronbach's Alfa efficiency measuring scale resulted .91

Source: Own

Scale for measuring the overall welfare climate within the class ("Pleasure"). The results of the Kaiser-Meyer-Olkin test highlight the adequacy of the sample for the factorial analysis KMO = .753. The Barlet's Spherically test (χ^2 (3) = 1532.753, p <.001) found that correlations between variables (questionnaire statements) were appropriate for conducting component (factor) analysis. The factorial analysis revealed only a factor with factorial load above .80 that demonstrates a one-dimensional scale and explains 88% of the variance. Table no. 3 describes the description of the statements in the scale composition and the factorial loads.

TABLE NO. 3 COMPOSITION AND FACTORIAL LOADS OF SCALE FOR MEASURING THE OVERALL CLIMATE WITHIN THE CLASS.^A

Statement	Whole statement	Factorial 1.
q. 3	I get entertained in the classroom	.754
q. 12	I get bored when the bell rings	.738
q. 19	I am delighted working with my friends.	.724

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Cronbach's Alfa resulted .73

Source: Own

Focus groups analysis

Focus groups organized with teachers aimed to answer the question of how much they knew the methodology of play (ludic methodology) and through which instruments they applied it. It resulted that 68% of participating teachers in focus groups think that classroom activities are complementary but not primary. They think that they are used for entertainment but little or nothing in teaching the new topic or controlling knowledge. Classroom games serve to improve the atmosphere, raise classroom enthusiasm, and remove pupils' boredom when they show signs of fatigue. Only 32% of teachers think that the play methodology is fruitful, that it is not only efficient and helps memorization but also motivates pupils. They believe that in activities where games are included, didactic games do not end with the game, the end remains outside play and normally it is decided by the teacher. For them, the activities of the balls are "built intentionally to give a fun and pleasant form to certain learning."

87% of the teachers struggle with the noise of the game. 11% of them say that when using game methods in teaching, it increases pleasure either to the pupils or to the teachers. 6% use little or no games in the classroom, but suggest them as outside activities, 12% of them use only energizing games, 22% use them as a theater game, 16% use jeopardy games, 24% of them use fast facts games, and 20% of them use the entire spectrum of games during the teaching classes. 91% of teachers believe that pupils are fully committed and take very seriously their participation in games during their classes. 73% of teachers feel that their school directors do not understand them concerning this issue.

Focus groups with the school directors aimed to analyze and understand how much teachers are assisted in their work by the leading instances, how much these instances recognize, support and aim at the implementation of the ludic models in the school and ultimately through them it is understood how much our schools use game/ play (ludic) methods. From the focus groups it turned out that school directors are not inclined to apply ludic method since most of them, around 80%, consider it an out-of-class entertainment activity in school but not in the classroom. These school directors do not recognize the didactic values of the game but only recognize its entertaining values. These school directors do not believe that pre-teens' age (who attend the last 3 grades of the 9-year system) will have to play because

they consider it only as the attribute of the younger ages. 13% of school directors recognize the values of the ludic methodology. They believe it's good to be part in the system, believe it's best suited to lower school age. Only 7% of school directors believe in "the school of friendship", one of its foundations, is exactly in the ludic methodology, believe that all ages, not just school age, but all the phases of mankind have as a description the game/ play as when playing a person is himself. They encourage their teachers to use ludic methodology.

70% of school directors claim that during the trainings, they have heard about the methodology of play (ludic methodology). 30% of them have participated in trainings for their teachers with a focus on ludic methodology. 100% of them believe that specific and concrete trainings, far from the theory, would probably be the way to improve the situation. 63% of them think that the best teacher is the one who makes the pupils work independently and not in the position of the game. Only 37% of them think that innovative teachers are the teachers of the future, which means that they have knocked on their school doors. Only 24 school directors believe that changes in classroom infrastructure, i.e., the flexibility of pupils' movement during the classroom to make learning with ludic methods is fruitful.

The way this research was carried out intended to minimize non real results. However, like most of the studies made in the field of the education and teaching, even this one is self-report based. As a result, the findings depend even on the pupils' acquisition of the questions in the survey as well as on the degree of sincerity they have completed the instrument with.

During the implementation of this study, all the stages of research ethics have been followed. It has firstly been taken the permission of the respective structures in charge where the instrument was conducted. Subsequently, a sensitization of the research and its goal was done to the participants (teachers, pupils, school headmasters) before they filled the instrument. They were guaranteed anonymity and asked whether they wanted to participate voluntarily in the study. Furthermore, participants who did not want to be part of the study did not meet the instrument.

Conclusions and discussions

The quantitative study was of a correlational type, conducted with 1517 pupils, aimed at analyzing how the pupils of the 9-year school system in Albania and teaching with ludic methods, showed that there was a positive substantive relationship between motivation and pleasure ($r = .52$, $p < 0.01$).

From the regression analysis, it resulted that the ludic methods are statistically valid predictors of the pleasure and motivation of the pupils during the lesson. There is a moderate positive relation ($r = .36$, $p < 0.01$) between the ludic method and the satisfaction that this method provides while learning. There is a moderate negative relation ($r = -.39$, $p < 0.01$) between the pleasure of classroom teaching and the traditional methods used in teaching. There is a substantial negative relation between classroom

satisfaction and traditional methods of teaching ($r = -.57$, $p < 0.01$). Meanwhile, between the classroom satisfaction and ludic methods used during the teaching hours, there is a statistically significant positive substantive relationship ($r = .66$, $p < 0.01$).

Furthermore, research questions of this study find answers through detailed data analysis of the focus groups and help us understand how much teachers and school directors know and accept the values of using ludic methodology. After these data were processed, it resulted that teachers considered the game/playas an important element in the life of their pupils. They know the pleasure and worth that game has but they are still far from frequent application and use of ludic methodology, rarely do they use it when there is a chapter review or free classes.

Thus, school directors are not yet a significant and positive "push" in supporting teachers in applying ludic methods in their classrooms. Most of them still believe that game belongs to the entertainment sphere and teaching in the lower classes. School directors, in their skepticism, are often not only helpful but are also an obstacle to the application of the ludic methodology in these classrooms.

What remains totally out of teacher focus is that ludic model/methodology is therefore an interdisciplinary laboratory, in which the various specialized skills must find ways of collaborating in a common path towards a common goal. With this, it is not enough that every time, some teachers use the game as a didactic purpose and "the game is done". If it does not become a daily practice of many teachers and in all subjects where the game is used as an educational tool that improves learning while having fun, we cannot achieve our goals and we cannot approach the friendly school.

Therefore, achieving through a renewal of teaching the possibility of educating to traditional subjects using the registers of the game, thus activating the student's interest in learning remains one of the challenges to be faced in an Albanian school. The new horizons proposed by the models to do school, all the experiments that use a method that must properly define play, for its being autotelic, constituting laboratories that practice the interconnection of subjects, the media in teaching in all their range, because their language is as playful as content is often but it can be aimed at other meanings. Therefore for the Albanian school it would be desirable to renew the teaching of the subjects suggesting the modalities of use of a play method. As Kornesky said "Teaching well is to make one learn quickly, pleasantly, solidly".

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e-mail of corresponding author: stepanka.hronova@mail.vsfs.cz, stepa_00@yahoo.com**Key words:** Customization, Education, English as a Foreign Language (EFL), Teaching and learning materials, Technologies.

Abstract: Being an educator and a language lecturer for about a quarter of a century, the author has come across a wide variety of styles, approaches, tools and platforms enhancing foreign language acquisition, English in particular. Achieving outstanding results is a challenging issue for EFL teachers all the more that technologies, materials, aids and even the content supporting EFL acquisition face obsolescence after certain period; their lifecycles inexorably come to their end. Apart from stimulating background and intrinsic and extrinsic motivations of students, customization of EFL materials can offer a partial solution to the problem. Here, educational concepts and goals may merge with theoretical marketing concepts. The objective of this paper is to identify, explore and evaluate the educational potentials of state-of-the-art methods of changing an English class into a more intellectually stimulating and more engaging place where students are willing to immerse into learning due to meaningful customization of EFL materials. Simultaneously, the necessary skills of teachers for successful customization of EFL materials are explored as well, especially in view of dynamic technological advances. The paper is complemented by the results of an exploratory probe focused on the university teachers and their current practice and experience in EFL materials' customization. In this survey, a special attention is given to customization of learning materials with the help of new technologies, especially mobile video and audio formats, communication platforms of social media, incorporation of mobile apps, and blogging/vlogging. It is the aim of the author to open a discussion on EFL customization methods and suggest professional sharing platforms varying from international conferences and seminars to information sharing platforms. A dynamic approach to EFL materials' customization represents a significant contribution aiming at boosting genuine interests of students in learning English while acquiring real life English language communication skills.

Introduction

As an educator and a language lecturer for about a quarter of a century, the author has come across a wide variety of styles, tools and platforms enhancing foreign language acquisition, English in particular. Various teaching approaches, types of materials and aids used to teach English as a foreign language (EFL) have been utilized and backed by the state-of-the-art communication and/ or audio-visual technology of each period. However, such technologies, materials, aids and even the content supporting EFL acquisition face obsolescence, may suffer from fatigue and their lifecycles inexorably come to their end.

There has also been a significant shift of teaching platforms from strictly face-to-face in class instruction through their gradual blending with computer-based learning (or any electronic device-based learning) with or without the use of the learning management systems into fully electronic ways of instruction in open education. The teacher is no longer the bearer of all knowledge to be transferred, he/she is considered a facilitator of the learning process. As such, educators frequently face the necessity of adjusting not only the methods but to a certain extend also the educational content. Here, the author sees a link with the marketing concept of customization within the educational service the lecturers actually provide their students/ customers with. The research probe viewing inside the issue of EFL (and other foreign languages) instructional materials' customization brings insight into the work of language specialists.

Theoretical concepts and literature review

In this section, several theoretical concepts are described and the method of research is introduced in order to deal with the issue of the customization of EFL (or another foreign language) materials. Firstly, this part of the paper looks at the fields of language teaching and teachers' skills, motivation to learn a language and corresponding marketing concepts. According to multiple authors (Osmani et al. 2013), the above areas are interconnected. Secondly, the section describes the methods of research and data collection.

Theoretical concepts

a. **In language teaching**, achieving outstanding results has always been a challenging task for foreign language teachers. It is even more demanding at present when technologies, materials, aids and the content supporting EFL acquisition is changing with a very fast pace. What was once prepared and tested in practice becomes obsolete after certain period. Language teachers have to learn and develop constantly hand in hand with the shifts in technology and innovation. Multiple researchers increasingly focus on EFL teachers and their development. De Laurentiis Brandão (2018) mentioned two reasons why the interest arose: “*(1) sociocultural and sociopolitical dimensions of teaching began to be valued, and (2) language teachers began to be seen as knowledgeable professionals instead of technicians* (Varghese et al. 2005 in De Laurentiis Brandão, 2018). Consequently, *EFL teacher development became a matter of professional identity formation* (Gimenez 2011 in De Laurentiis Brandão, 2018).”

b. *State-of-the-art methods used for EFL teaching and newly acquired teachers' skills help* changing an English class into a more intellectually stimulating and more engaging place where students are willing to immerse into learning due to meaningful customization of EFL materials. Finding the right blend for an individual but rather and more frequently for a particular group involves mastery and experience. Traditional use of coursebooks and their accompanying materials such as CDs and DVDs, reading comprehension texts, grammar worksheets and skills practice via various class activities are more frequently supplemented by electronic or online materials of instruction. The latter is also called Open Educational Resources (OER).

c. Access to the open educational resources can be obtained, for example, via Top Hat website. This platform comments on OER as follows: “*Professors and schools have been slow to adopt OER for a variety of reasons: the first generation of OER was hard to find; quality was uneven; and there was no way to customize content specifically to a course. Most of it came in static PDFs that were hard to read on a smartphone and were difficult to adapt. But those early perceptions are changing. As the next generation of OER becomes more engaging, interactive and customizable, the OER movement is gaining momentum in higher education.*” (Top Hat website 2018)

d. Stimulating environment can enhance *students' language acquisition and so does their motivation to study foreign languages*. Knihova and Hronova (2015) showed in their previous work that motivation is often divided into internal (intrinsic) and external (extrinsic). The first type of motivation is based on the individual, it is guided by their own interest, the desire to learn foreign language. The second type is based on external motivators influencing the individual who responds to them in order to gain a reward (e.g. getting good marks and receiving some treats for them, winning the competition, etc.), or to avoid a certain negative impact. The UCLA professor John Shumann claims that motivation for the acquisition of a foreign language varies among individuals, their talents and opportunities. For this reason, we do not find a single successful script for learning a foreign language. This author mentions two types of motivation: instrumental and integrative the latter being used in early childhood while learning a mother tongue because of the need to integrate with other people. Instrumental, on the other hand, means learning the language from more practical and pragmatic reasons (fulfillment of school duties, career progression, etc.). Schumann refuses, however, to admit that the integration orientation of motivation has completely disappeared while teaching a foreign language, but, on the contrary, he argues that there is a mix of both influences on motivation to learn a foreign language. (Razavi 2014)

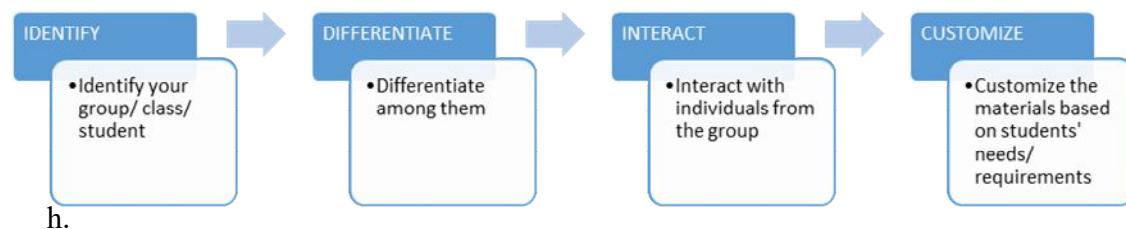
e. In order to boost intrinsic and integrative types of motivation within language learners, customization of EFL materials can thus offer a partial solution to the problem of EFL, especially when the result of the process brings stimulating and immersive learning environment.

f. *Marketing concepts and language teaching and learning* are continuously being more and more interconnected as modern educational institutions regard their students as customers and they try their best to satisfy their clients' needs. Some institutions even provide courses for corporate sphere where many organizations may already have a well-developed systematic approach to training. Continuous reinforcement of the customer focus accordingly permeates many of their activities. In general, it can be inferred that educational concepts and goals may merge with theoretical marketing concepts. In particular, it can be said that the process of customization thus applies to educational as well as business spheres. According to the online Cambridge Dictionary, customization is "*the action of making or changing something according to the buyer's or user's needs.*" (Online Cambridge Dictionary 2018)

g. Customization is typical for the area of Customer Relationship Management where organizations are treating and approaching their clients flexibly with great emphasis on meeting their customers' educational needs and wants; in this era more frequently with the use of the newest information technologies. ... "*many institutions are taking this opportunity to use technology in achieving their objectives. One of the most popular strategies that has been accepted and confirmed by researchers and many organizations is Customer Relationship Management (CRM).*" (Osmani et al. 2013) One particular concept to be applied to

language teaching and learning is the world-renowned and marketing literature based IDIC concept developed by Peppers & Rogers Group for their business partners. On their website, the company describes itself as the one who ... “provides the people, processes and technologies needed to make organizational knowledge a competitive advantage through cutting-edge knowledge bases, communities of practice and other strategic deployments.” (Peppers & Rogers Group website 2018) Their IDIC process model (Picture 1) consists of four phases called: *identification*, *differentiation*, *interaction* and *customization* and its main goal is to achieve satisfaction and loyalty of clients with a focus on long-term relationship.

PICTURE 1. THE IDIC MODEL



Source: Own based on Peppers & Rogers' Model

i. Language teachers can be considered experts in the field called customization of instructional materials. This paper brings results of an international research probe on this topic further on. Professionals instructing foreign language, English in specific, make a special community of people truly and deeply devoted to their professions with a strong passion, understanding and great involvement in cooperation, creating and adjusting materials for language learning and teaching.

Research methods

The paper is complemented by results of an exploratory probe focused on foreign language teachers (with close attention to university teachers and EFL) and their current practice and experience in instructional materials' customization. In this survey, a special attention is given to customization of learning materials, reasons for adjustment and customization of instructional materials. The research probe further asks teaching professionals about their use and its frequency of traditional teaching and learning aids such as coursebooks and their complementary materials (eg. audios and videos prepared by the publisher), other printed materials and worksheets and also about more modern forms of instruction such as other electronic and/or online formats: school platforms, specific LMS, video and audio formats, social media communication platforms, incorporation of mobile apps, blogging/vlogging or virtual reality in their process of foreing language tuition.

The research probe brings fresh data from May 2018. It was designed by the author as an electronic self-administered questionnaire with 7 multiple-choice questions on a Surveymonkey.com platform and distributed via e-mail to language teachers and partner universitites across Europe. The contacted persons

were asked to distribute the questionnaire further. Some questions carry the format of a bipolar scaling method – the five-point Likert scale. Originally, the author had considered removing the middle option as it is sometimes called the neutral option and can be questionable. (Armstrong 1985) However, it was finally decided for the item to stay in the questionnaire as it proved necessary and does not mean “undecided” in this particular form. Below, **questions 1-4** are presented in the questionnaire form and questions 5-7 are introduced in the text below (from the space reasons). This thorough description of experimental design is intended to provide sufficient details so that it allows for potential future replication of the research probe by other researchers in larger volume or more depth.

PICTURE 2. QUESTIONS 1-4

1. The language I teach is ... / Jazyk, který vyučuji je ...

- | | |
|--|---|
| <input type="radio"/> English / angličtina | <input type="radio"/> Spanish / španělština |
| <input type="radio"/> German / němčina | <input type="radio"/> Russian / ruština |
| <input type="radio"/> French / francouzština | |

Other (please specify)

2. I teach ... / Vyučuji ...

	Never - nikdy	Rarely - zřídka	Sometimes - občas	Frequently - často	Always - stále
pre-school / předškolní	<input type="radio"/>				
elementary school / první stupeň ZŠ	<input type="radio"/>				
junior high school / druhý stupeň ZŠ	<input type="radio"/>				
high school / střední škola	<input type="radio"/>				
university, college / vysoká škola, VOŠ	<input type="radio"/>				
corporate courses / firemní kurzy	<input type="radio"/>				
language courses, summer schools / jazykové kurzy, letní školy	<input type="radio"/>				
private tuition / soukromá výuka	<input type="radio"/>				

3. I adjust and customize learning materials ... / Upravuji a přizpůsobuji učební materiály ...

- | | |
|---|--|
| <input type="radio"/> Never - nikdy | <input type="radio"/> Frequently - často |
| <input type="radio"/> Rarely - zřídka | <input type="radio"/> Always - stále |
| <input type="radio"/> Sometimes - občas | |

4. The reason I adjust and customize is ... (choose the rating power: from 1 NEVER to 5 ALWAYS) / Důvodem úpravy a přizpůsobení je ... (vyberte sílu hodnocení: od 1 NIKDY až po 5 VŽDY)

⋮	technology obsolescence / stárnutí technologie
⋮	necessity to innovate the content / nutnost aktualizovat obsah
⋮	level of students / úroveň studentů
⋮	mixed ability classes / skupiny se smíšenými úrovněmi
⋮	ESP - English for specific purposes (occupation, profession) / angličtina pro specifické účely (zaměstnání, povolání)

Source: Own

Question 5 “Materials I use for classroom instruction or recommend to students (no online materials) are....” offered respondents the Lickert scale 5-point options of *never*, *rarely*, *sometimes*, *frequently*, *always* for the items of: coursebook (no change), coursebook additional materials (CDs and DVDs),

coursebook materials adjusted, own grammar worksheets, own materials to practice skills, professional articles/ texts, and stories/ jokes.

Question 6 asked about the use of “*Electronic or mobile teaching and learning materials....*” providing the five-point rating for frequency of the following materials’ use: link to online audiovisuals materials, link to online grammar exercises, link to online EFL teaching platforms, own electronic materials (e-learning), social media – posts/ discussions, blogging, vlogging, mobile apps and virtual reality.

Question 7 asked about the nationality of respondents with the offer of 50 European countries.

Results

The research brought the total amount of 55 respondents from 11 European countries with the highest response rates from the Czech Republic, Hungary and Belgium.

The research tended to focus on ELT and university lecturers but did not want to exclude other languages or levels of education. The research sample thus included instruction of foreign languages in the following amounts and percentages: English 42 (76.4%), German 3 (5.5%) , Spanish 3 (5.5%), French 2 (3.6%), Dutch 1 (1.8%), Portuguese 1 (1.8%), Italian 1 (1.8%), Chinese 1 (1.8%), Swedish 1 (1.8%). The respondents came from the following institutional background, sometimes overlapping (See Picture 3):

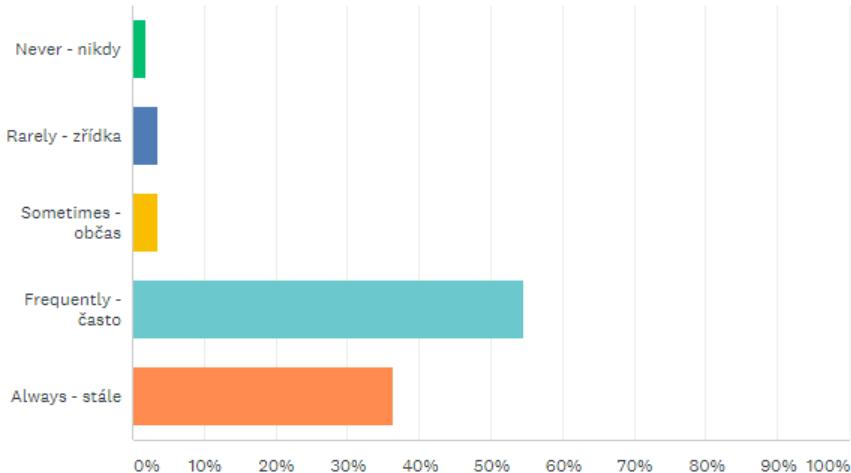
PICTURE 3. FOREIGN LANGUAGE INSTRUCTION AND INSTITUTIONAL BACKGROUND OF RESPONDENTS

	NEVER - NIKDY	RARELY - ZŘÍDKA	SOMETIMES - OBČAS	FREQUENTLY - ČASTO	ALWAYS - STÁLE	TOTAL
▼ pre-school / předškolní	87.50% 21	12.50% 3	0.00% 0	0.00% 0	0.00% 0	24
▼ elementary school / první stupeň ZŠ	83.33% 20	12.50% 3	4.17% 1	0.00% 0	0.00% 0	24
▼ junior high school / druhý stupeň ZŠ	68.00% 17	8.00% 2	16.00% 4	0.00% 0	8.00% 2	25
▼ high school / střední škola	50.00% 14	10.71% 3	25.00% 7	7.14% 2	7.14% 2	28
▼ university, college / vysoká škola, VOŠ	3.77% 2	1.89% 1	1.89% 1	11.32% 6	81.13% 43	53
▼ corporate courses / firemní kurzy	19.35% 6	22.58% 7	35.48% 11	12.90% 4	9.68% 3	31
▼ language courses, summer schools /	37.93% 11	24.14% 7	17.24% 5	13.79% 4	6.90% 2	29

Source: Surveymonkey.com based on own data

The frequency of the ELT (other languages) materials’ customization is a striking fact (see Picture 4).

PICTURE 4. FOREIGN LANGUAGE INSTRUCTION AND INSTITUTIONAL BACKGROUND OF RESPONDENTS



Source: Surveymonkey.com based on own data

Only 9% of teachers adjust or update their materials never, rarely or sometimes. Tremendous 91% devotes their time to changing instructional materials frequently (54.55%) or always (36.36%) as could be viewed on the graph above. The reasons (scale: 1 – never the reason, 5 – the most important reason) for this dramatic involvement in ELT (or other languages) materials updating and customization are visible in Picture 5 below. It can be seen that the highest score of 3.66 was reached by *technology obsolescence*, next with 3.15 were *mixed-ability classes* and 3.09 was obtained for the *levels of students*.

PICTURE 5. REASONS FOR CUSTOMIZATION AND ADJUSTMENT OF INSTRUCTIONAL MATERIALS

	1	2	3	4	5	TOTAL	SCORE
technology obsolescence / stárnutí technologií	37.14% 13	11.43% 4	34.29% 12	14.29% 5	2.86% 1	35	3.66
necessity to innovate the content / nutnost aktualizovat obsah	8.11% 3	10.81% 4	16.22% 6	32.43% 12	32.43% 12	37	2.30
level of students / úroveň studentů	3.13% 1	40.63% 13	25.00% 8	25.00% 8	6.25% 2	32	3.09
mixed ability classes / skupiny se smíšenými úrovněmi	17.95% 7	23.08% 9	25.64% 10	23.08% 9	10.26% 4	39	3.15
ESP - English for specific purposes	11.63% 5	9.30% 4	20.93% 9	13.95% 6	44.19% 19	43	2.30

Source: Surveymonkey.com based on own data

Further, the research probe showed only marginal use of the newest cutting-edge technologies such as virtual reality (very occasional use - 27%), rare use of vlogging (34%), but more frequent use of the more

common ways of communication even outside the classroom such as blogging (51%) and incorporation of social media into a foreign language class instruction (72%). For self-study, students are offered links to electronic exercises and other materials very frequently: online resources practicing skills (96%), online grammar (91%), links to LMSs and other learning platforms (83%).

The results showed a striking reality of 91% professional foreign language lecturers ranking mainly from the tertiary education field customizing their materials (almost) on daily basis when they claimed that they adjusted *always* or *very frequently*. What does it mean? The research probe proves that the once thoroughly prepared materials are not suitable any more from variety of reasons beginning with technology obsolescence, various levels of students and mixed ability groups through preparation of materials for ESP classes to the need for content updating. This fact leads to the necessity for the teachers to be very active in exchanging tricks and tips, links to online resources, prepare their own electronic materials and be familiar with the up-to-date technologies and state-of-the-art methods. It is the reason and very frequently their own initiative to come together in online forums, take part in webinars or attend workshops and conferences. Also, self-study online materials can become handy as well for independent updates. A handbook for professors by Philip Previle (2018), a member of the Professional Advisory Council with the Department of English at Ryerson University can serve as a benchmark for a similar type of materials. It is called *How to create interactive course content*. There, the author very nicely summarizes the need for some of the materials to go electronic and online with lower costs for students and faster publication for lecturers in this modern era. “*In higher education, digital disruption is not just about the technological upheaval...; the term also relates to the distraction and disengagement of students in the classroom whose course materials are incompatible with their wired lifestyle.*” (Previle 2018)

Conclusion

The paper intended to focus on educational potentials of the state-of-the-art methods which may help to change an English class into a more intellectually stimulating and more engaging place due to meaningful customization of EFL materials. The literature review was compiled and the paper was complemented by the results of an exploratory probe focused on the university teachers and their current practice and experience in EFL (and other languages) materials’ customization. In this survey, a special attention was given to customization of learning materials with the help of new technologies, especially mobile video and audio formats, LMSs, communication platforms of social media, OER, incorporation of mobile apps, and blogging/ vlogging.

The major findings pointed out a striking fact that 91% of respondents customize their teaching materials almost on daily basis. The research probe showed only marginal use of the newest cutting-edge technologies such as virtual reality (27% but only occasionally) but proved frequent utilization of established electronic materials – e.g. online resources (96%). In the middle, more common ways of

communication even outside the classroom are gaining on their importance in EFL teaching/ learning such as blogging (51%) and social media (72%). It can be implied that the more established the communication platform is and more experience people have with it in everyday life, the higher its frequency of use is in ELT.

Further research can be suggested among ELT lecturers with the goal to reach (1) twice as many respondents and (2) lecturers in countries with zero response rate in this probe. Comparative study could be made based on the two possible samples.

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Key words: adventure learning, transformative learning, pilgrimage, immersive environments, motivation.

Abstract: Starting from the standpoint of adventure learning, introduced and developed by Aaron Doering, this paper will focus on the intersections between learning which is happening in a traditional setting in an educational institution (be it online or offline), and learning which is happening out-of-doors and on-the-go.

In the spring semester of 2017, a team of 12 students and 1 educator of art history, set off for an experimental learning experience, undergoing a pilgrimage across Switzerland and France, discovering and researching medieval pilgrimage paths and objects of medieval art along the way. From Laussane to Mont-Saint-Michel on the Atlantic coast, their journey covered more than 1500 kilometres on foot and four months of a varying weather as well as group dynamics.

Still, the whole project aimed to be more than just an experience of a small group of outdoor-loving students. Being a carefully-planned educational and research endeavour, the students were meeting top experts in art history along the way and worked hard on collecting field-related materials and sources for their research papers. In addition, through the extensive use of learning technologies and video-based infrastructure, the research outcomes and learning sessions of the whole project were made available both to students of collaborating universities (through real-time streaming events, lecture capture, and Moodle-based courses) and the public audiences (through a series of documentary movies captured by students directly on the way as well as countless direct meetings with the locals).

This paper will provide a summary of the project Migrating Art Historians from the point of view of an online instructional designer, AV technician, and educational content creator. It aims at sharing experiences about making learning happen outside of traditional classroom (from technical as well as methodological perspective), and inspiring debate about the value and benefits of learning with modern technologies.

Prologue

It was a laid-back, sunny afternoon just at the beginning of July 2016 when we sat down with Ivan Foletti, the Head of the Center for Early Medieval Studies at the Faculty of Arts, Masaryk University, outside one of the many little coffee shops by the faculty in Brno. The agenda was clear – to fire up the making of the very first MOOC project that was going to be produced at the faculty¹. The subject of this course was the late Antique art of Rome, so dr. Foletti had put forward his idea to actually shoot the video content directly in the Italian capital to make it as authentic as possible. Quite a challenge in its own right, given the little experience of the newly-formed video section of the E-learning Office², and the rather tight production schedule to perform in Rome; still, I was pleasantly surprised to find out that the suggestion to go and shoot in Italy actually came through the institutional apparatus of the faculty. Something quite out-of-the-ordinary, I thought to myself, as we were sitting there discussing the logistics of our 2-week road trip to Rome. It was only a few moments later that I found out what “something out-of-the-ordinary” really meant for dr. Foletti.

As the meeting continued, the Italian agenda was getting more and more side-tracked, as we started taking about other projects and plans for the upcoming autumn semester. To my shear amazement, it was

¹ You can access the course at the MOOC platform of the Faculty of Arts: <https://open.phil.muni.cz> (direct link to the course: <https://goo.gl/oaxH9S>).

at that point that Ivan revealed his preliminary idea for the Migrating Art Historians pilgrimage – a one-semester-long research walk across France, with students and visiting world-class experts. Something out-of-the-ordinary on a totally different level. It was at that point that I remembered the adventure learning projects by Aaron Doering from the Learning Technologies Media Lab³, University of Minnesota, and I knew we could do so much more with this brilliant educational project if we were able to embellish it with some edtech magic. And so we did. And it worked.

An overview of the Migrating Art Historians project

The idea for the Migrating Art Historians (MAH) project sprang from the long-term research experience of the members of the Center for Early Medieval Studies with the phenomenon of pilgrimage and pilgrim routes in medieval Europe, and also from a unique research methodology of the Center which stipulates that we cannot fully understand medieval art, unless we employ our whole body as a medium of inquiry and research; that we cannot grasp the meanings and messages of the artistic production connected to pilgrimage, unless we actually become pilgrims ourselves and expose our minds and bodies with all their senses to the weariness and amazement of the pilgrim experience; and that the medieval art is as much about performance as it is about perception and recognition.

In line with these research premises, the MAH project was conceived in such a way that would give the participating students exactly these kinds of experiences and research stimuli. The project revolved around a 4-month pilgrimage across Switzerland and France (March-June 2017; from Laussane, Switzerland, to Mont-Saint-Michel, France) during which the research team (10 students, 1 teacher) covered 1500 km on foot following several medieval pilgrim routes. Along the way, there were three 3-week-long study stops (Conques, Saint-Berniere-sur-Loire, and Ardevon by Mont-Saint-Michel) where the students had the opportunity to work on collected research material and ideas, and where there were also complementary workshops led by visiting renown experts in the field of art history. As far as the research outcomes of the project are concerned, all of the participating students wrote their final BA/MA theses on topics and sites connected the actual route of the pilgrimage; in addition, a collective monograph of all the participants as well as a number of research articles has been published since.

Thanks to the addition of learning technologies (LT), the original scope of the project (originally only considered for the students taking up the pilgrimage) could have been broadened to accommodate a wider range of students as well as public audiences. In the end, the employment of LT resulted in:

- Establishment of 6 additional hybrid online courses (Moodle-based) which ran simultaneously with the actual pilgrimage, so that the students following the project online in Brno could get

² <http://e-learning.phil.muni.cz>

fresh research material (such as images and videos) directly from the field and could communicate with the students walking to exchange ideas and experiences, and get advice for their own study tasks.

- Real-time streaming of expert-led workshops taking place during the 3 research stops (see above), so that the students in Brno and at other partner universities could benefit from the content of the workshops, and also directly interact with the experts by means of synced chat tools⁴.
- Production of short documentary movies which were aimed at introducing the project and its research outcomes to wider public – the movies were scripted and shot in-situ by the participants of the project, edited and finalized by a dedicated team in Brno, and shared on the project Youtube channel⁵ on a weekly basis right during the course of the pilgrimage.
- Production of a full-length documentary movie which summarized the main moments and outcomes of the pilgrimage, and in a way winded up the whole project. The movie was screened at the Masaryk University cinema of Scala and attracted more than 500 visitors.

The scale of the employment of technological tools and practices for this project presented a totally unprecedented utilisation of LT at the Masaryk University, which was previously predominantly applied in more traditional ways such as in blended e-learning courses and lecture capture. In addition to the plethora of content of the 6 e-learning courses mentioned, the project meant streaming of 27 workshops from France and the production of 13 movies, adding up to more than 44 hours of video content and over 17 000 of total views on the project Youtube channel. Among other outcomes, the audio-visual production showed the power and reach of video in education and science communication – similarly confirmed by the unusual long-sustained interest of media as well as public (coming for live talks and other events)⁶.

A brief dip into the adventure learning framework

As mentioned in the prologue, the conceptual inspiration for the employment of LT for the MAH project came from the work by Aaron Doering from the Learning Technologies Media Lab (LTML) at the University of Minnesota, USA. Since 2004, Doering and his colleagues have been running projects which combine the work of a research team in the out-of-doors together with the use of e-learning tools and multimedia technologies to bring the direct fieldwork experiences and perceptions to a variety of student

³<https://lt.umn.edu>

⁴ The Youtube streaming engine and its chat tool were used for the live streams. As there was no need to limit viewers to course attendants, Youtube was selected for its salience and ease of use for the audience.

⁵ All the movies and workshop recordings connected to the MAH project are freely available at the Youtube channel of the Center for Early Medieval Studies: <https://www.youtube.com/c/centerforearlymedievalstudies>

⁶ See the project website for a complete list of media appearances: <https://sites.google.com/site/migratingarthistoriansen/>

and public audiences within a synchronised learning environment: a methodological approach referred to as adventure learning (Doering 2007, 1-3).

“Adventure learning (AL) is a hybrid distance education approach that provides students with opportunities to explore real-world issues through authentic learning experiences within collaborative learning environments” (Doering 2006, 197). In the course of an adventure learning program, the research team gathers fresh evidence from the field, prepares multimedia learning outcomes and communicates remotely with students who follow the progress of the research team as part of their classes, working on complementary learning tasks, and sharing their work with their peers from other partner schools within a collaborative learning platform. What is more, they also have the possibility to discuss research inquiries with selected subject-matter experts by means of moderated online group calls and chats (Doering 2006, 202-207). Such an approach to learning and curriculum design can be applied on all levels of the education continuum, from primary schools to universities and colleges (cf. Czaschová 2017).

Far from being conceived as a coherent adventure learning program, the MAH project still attempted to utilise several elements of the AL framework. As stated above, the e-learning courses for the students in Brno were directly updated by materials sent from the field, so that the students could work with the most current pieces of information. At the same time, the streaming sessions offered the possibility to interact directly with top-level subject-matter experts on a range of selected topics relevant to students’ study tasks. Students in Brno also regularly kept in touch with the participants of the pilgrimage, making it possible for them to discuss various research topics and get advice based on the practical, first-hand experience from the field. As for the public realm, the regular production of short documentary movies opened up the research topics to wider audiences allowing them to take interest in the project in this way⁷. A similar role was fulfilled by the media coverage.

A note on transformative learning

The discussion about the AL elements of the MAH projects puts forward yet another important consideration about learning technologies and educational processes in general: the transformative aspect of learning (cf. Palloff and Pratt 1999). According to Doering (2006, 197-200), transformative learning is directly encouraged by the structure and content of an AL project: its wealth of unique multimedia content and direct interaction with explorers, its collaborative opportunities, and its active, inquiry-based instructional design. Revolving around a complex online platform and complementary classroom activities,

⁷ During their first AL project in 2004, Doering reported that the locals in the Canadian arctic recognised the research team based on internet media coverage and school participation (Doering 2007). Similarly, the MAH research team were greatly helped by locals in France showing lively interest in the topics as well as methods of the research project.

the transformation of the student's knowledge, attitudes and values (cf. Kalhous and Obst 2009) is supposed to happen without the student actually "leaving their classroom" (Doering 2007, 5).

Contrary to these assumptions, it became obvious during the course of the MAH project that is precisely the act of "leaving the classroom" that has the unique potential to activate the transformative power of learning. Having positioned students in the role of explorers and field researchers, the MAH project challenged the main role distribution of the usual AL framework: as it turned out, it was the group of students walking, not the group of students following online, who benefited the most from the whole project, going through significant transformation on a variety of levels – cognitive, emotional, social etc. Transformation which was not possible to achieve by consuming the pieces of information through any of the LT applied.

Reconsidering technologies in education

Following upon the arguments outlined above, it seems unavoidable that a project like MAH, with the scale and breadth of its LT application, would spark a discussion about the benefits and pitfalls of technologies in education and science communication from a more general point of view. On the one hand, in view of such a type of a project, which was rooted deeply in the belief about the necessity of first-hand, full-body engagement for any learning to be meaningful, effective, and long-lasting, it seems that the introduction of a plethora of LT within formal and informal learning environments in recent years (cf Zounek and Sudicky 2012) has brought rather false notions (of reality, relations, engagement, competence, and achievement) of what technology can do in the classroom and what can be achieved by means of enhancing learning processes and methods by technological embellishments.

On the other hand, we still have to recognise the fact that technologies have the potential of being invaluable tools in many learning scenarios. The reconsideration here lies therefore in transforming our views about how LT can be utilised and used most beneficially within the learning process while understanding their limitations and possible harmful effects. And possibly also reconsidering the rather exaggerated centrality of their position within educational settings which they have gained recently.

To conclude the present paper, the following points summarize the current line of thought of the author as far as the role of LT is concerned: 4 distinct directions to utilise the benefits of LT can be sketched up here:

- To spark motivation, imagination, and engagement (largely by communicating passion for learning and the relevance of the subject matter in question).
- To introduce a sense of scale, context, and complexity of the issue studied.
- To create opportunities for people to meet and spend quality time together where learning can happen by sharing and working together.

- To build framework for students to learn more about themselves, by means of confronting them with the world around as well as the world within.

Based on the outcomes of the MAH project, future endeavours could thus take on a new approach in applying LT: one that would help pull learners back from the virtual to the real world, activating their whole bodies for more profound learning experiences.

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<p>NEW TECHNOLOGIES AND NEW ICT AND GAMIFICATION-BASED APPROACHES FOR THE CULTURAL HERITAGE EDUCATION AND COMPARISON OF THEIR USE IN SOME CZECH REPUBLIC'S CULTURAL HERITAGE SITES, CULTURAL MONUMENTS AND VIRTUAL MUSEUMS</p>	<p>ONDŘEJ CHRÁST</p> <p>Faculty of Business Administration The University of Economics, Prague Czech Republic³</p> <p>JAN BESEDA</p> <p>Centre for Higher Education Studies, Prague, Czech Republic</p>
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<p>Key words: cultural heritage education, cultural heritage presentation, new methods, ICT and cultural heritage, VR, AR, learning and teaching cultural heritage</p>	
<p>Abstract: In the theoretical part we analyse the phenomenon of modern methods in the presentation and teaching of cultural heritage using the latest literature. Using the example of several concrete case studies from the Czech Republic, this article then offers several approaches to possible modern presentation such as virtual reality, virtual museums and teaching about cultural heritage with the usage of gamification. We also describe modern 3D presentation of a significant cultural asset as one of the means of transferring cultural heritage outside of its physical location; and modern presentation and teaching methods of cultural heritage with the usage of gamification and modern technology directly in the physical location of the asset, for a concrete visitor or student. We describe modern educational methods, including gamification as successfully used marketing activity for attracting tourists for cultural heritage sites and associated educational activities.</p>	

Introduction

National cultural heritage, and especially cultural monuments, have always been part of cultural identity of the whole society. Cultural Heritage is regarded as a key area in today's Knowledge society (Ott, Pozzi, 2008). Culture is now commonly associated with cultural capital (Bourdieu 1986), and, according to Throsby (2010) "Treating heritage as cultural capital has some attractions to the economic and policy analyst. Defining heritage as capital enables concepts such as investment, depreciation, rates of return, and so on, to be applied to its evaluation and management".

New technologies should be an indispensable part of their presentation, and part of our approach to teaching methods about cultural heritage in general, as well as the knowledge of their meaning and status in society.

New presentation forms such as augmented reality, virtual reality, modern web and smart phone applications presentation and also gamification such as "Live Action Role Play" (LARP), escape games, geocaching or educational workshops for students play an important role in the presentation of cultural heritage as a whole. Internet of Things (IoT) brings endless possibilities of impact measurement and enable the design of modern teaching tools, virtual museums, etc. (Chianese, Piccialli 2014). Nonetheless, the use of flying drones brings new possibilities of monitoring of the cultural heritage as well as its presentation and potential teaching approaches. Social networks such as Facebook or Instagram bring incredible opportunities for promotion and awareness rising about cultural heritage too. One of the biggest virtual project is Europeana¹ – which is an initiative of the European Union, financed by the European Union's Connecting Europe Facility and European Union Member States and describing itself as EU digital platform for cultural heritage, collecting and providing online access to tens of millions of digitised items

¹ <https://www.europeana.eu/portal/en>

from libraries, archives, audio-visual collections and museums across Europe.² In this list we cannot forget to mention one of the biggest and very fast and rapidly growing digitalization/education platforms in the field of cultural heritage and arts – “Google arts and culture”, which now contains ten thousands of video and picture recordings of cultural heritage sites from all over the world.

The relationship between ICT-based tools such as augmented reality, mobile learning or gamification and non-formal education methods provide great potential (Petrucco, Agostini 2016). People in Cultural Management must address the way how to cultural heritage spaces are presented to make them understandable as goods - by using ICT, which is essential to providing an accessible heritage interpretation (Garrochena, Rivas 2017). Technology can become a facilitator of interactions and interconnections between all involved actors, where people can learn more effectively about culture and cultural heritage. Innovative applications and services can shorten the distance between cultural spaces such as museums, art exhibitions, historical centres and archaeological parks and citizens (Piccialli, Chianese 2017). New educational methods and approaches can also fruitfully contribute to better spreading knowledge (Ott, Pozzi, 2008). Digital tools can help with the “inner personal” experience of cultural heritage and bringing this “inner personal” experience to wider circle of people. New technologies can reduce knowledge gap for economically and physically disadvantaged people.

New forms of presentation (and also education) of cultural heritage are also considered as a great motivation factor not only for students but also for managers of cultural monuments, who can perceive this as well as a modern marketing tool for the asset they manage. Modern methods can attract higher numbers of people to the cultural monument, and if not physically, they can visit it virtually and spend their money, for instance, in the virtual merchandising shop. Many great cultural heritage locations are very hidden from public, especially in the countries full of other historic locations. Tourists and also teachers tend to consider only mainstream monuments and towns and neglect the smaller or less known sites (Bujari, Ciman, Gaggi, Palazzi 2017). It is common that the operators (or owners) of the smaller ones try to attract attention to their location by different and unconventional methods.

Of course, there will always be a major difference between the exact material structure and its virtual image. Material structure, such as a cultural monument (e.g. whole city centre – in the Czech Republic the so called urban heritage zone or urban heritage reservation), is always hardly transferable and perceptible outside of its physical territory. A cultural heritage asset is always a part of a larger whole, it has come into existence with a concrete intention of its utilization and reflects a concrete location – area, where it is placed, and time when it was built. Every owner or operator of a cultural heritage asset faces this contradiction when initiating any development of its virtual presentation, or while developing individual

² <https://ec.europa.eu/digital-single-market/en/news/new-europeana-collections-site-brings-people-closer-culture>

teaching methods related to it, its modern presentation and gamification approach to presenting the asset in its physical location. Discovering of cultural heritage by other means than physical cognition then necessarily affects its substance for a concrete recipient; yet at the same time modern technologies allow broader possibilities of deeper learning, e.g. through virtual or augmented reality.

There has also been a significant shift of teaching platforms from strictly face-to-face in class instruction through their gradual blending with computer-based learning (or any electronic device-based learning) with or without the use of the learning management systems into fully electronic ways of instruction in open education. The teacher is no longer the bearer of all knowledge to be transferred, he/she is considered a facilitator of the learning process. As such, educators frequently face the necessity of adjusting not only the methods but to a certain extend also the educational content. Here, the author sees a link with the marketing concept of customization within the educational service the lecturers actually provide their students/ customers with. The research probe viewing inside the issue of EFL (and other foreign languages) instructional materials' customization brings insight into the work of language specialists.

Advantages of modern ICT based methods in the field of cultural heritage education

Digitalization in all forms allows wider spread of cultural heritage. Most of the world memory institutions have digitalization in all forms as one of the main tasks of today. Enormnous amount of digitalized materials from all fields of human history allows scientists to easily study every aspect of human knowledge from all over the world across the centuries. Digitalization together with relatedmethods such as Virtual Reality or Augmented reality also allow teachers and educators to present this knowledge to students in the form they prefer or appreciate and use game as an educational method.

Ott, Pozzi, (2011) define 5 opportunities, which are available as a consequence of exploiting ICT-based innovative learning approaches for teaching and learning about cultural heritage:

Personalized, inquiry-based learning approaches

Enriched situated learning approaches

Interdisciplinary learning approaches

Collaborative learning experiences

From formal education to informal learning approaches

Gamification

Different, but closely related aspect of these methods is also gamification, which is defined as “the usage of game elements, e.g., badges, rewards, competition, leader boards, etc., in non-gaming systems, making individuals more engaged in completing a specific task or reaching a goal” (Bujari, Ciman, Gaggi, Palazzi 2017). Gamification attracts attention of students and invites them to reflect things from other perspectives. New educational methods such as VR, AR and their other forms allow students to “live

inside” the sites and see the history with their own eyes and understand it better - think deeply about the causes of a phenomenon. And last but not least, new education methods offer genuine interdisciplinarity in the field of cultural education - student can shift from looking at each object as a single isolated element to viewing it as a part of a wider context; see and examine it in the context of its location in the time and space where it belongs (Ott, Pozzi 2008).

Research methodology

We performed systematic review of articles on the subject of new, ITC-based and gamification educational methods in the cultural heritage presentation and education, published between year 2000-2018 on Web of Sciences, Scopus and Google Scholar. It is a very widely represented theme in these digital libraries, therefore we had to filter results to highlight the most cited and most closely connected to our theme. After the analysis of current articles, we realized a deep analysis of Czech cultural sites and projects, which use ITC-based and gamification educational methods in their locations or VR/AR projects. We have identified 4 different types and will show examples of them in the next part of this article.

Practical part 4 different types

In this chapter we will take a closer look on some projects related to the cultural heritage education in some Czech Republic's projects and cultural heritage sites. For the purpose of our research, we have selected typologically different kinds of cultural heritage and cultural monuments presentations and educational approaches to it. We will also examine two big VR educational projects, which originate in the Czech Republic.

In general, many 3D presentations of historical cities, museums or cultural heritage property exist in the Czech Republic³. They are mainly used for promotion and marketing activities, but not for educational purposes. E.g. most of the attractions in the capital city Prague and its touristic routes are in high-quality 3D, on the site of Prague city tourism organization, which is an official organization owned by the municipality of Prague.⁴ Significantly lower is the number of virtual museums⁵ we can find on Czech internet. The reason why this number of Virtual museums in the Czech Republic is low could be the high costs of developing of the content or, according to authors' personal experience and interviews with employers of big Czech museums, some kind of conservatism, maybe fear of publishing “the treasure” of the country online, and also technical shortages in main Czech institutions. In the projects below, as we are taking a closer look, we can see common similarity - that they were established with relatively high costs and have been mostly funded by public money – EU funds or local donations – state or regional.

Gamification as opening of cultural heritage to different ages categories

³ <https://www.google.cz/search?client=opera&q=3D+prohlídka&sourceid=opera&ie=UTF-8&oe=UTF-8>

⁴ <http://prague.pano3d.eu>

⁵ <https://www.google.cz/search?client=opera&q=virtuální+muzeum&sourceid=opera&ie=UTF-8&oe=UTF-8>

Zámek Loučeň (Castle Loučeň), describing itself as “a romantic baroque sight with original interiors” is very close to the capital city Prague, and it is relatively a new cultural/touristic destination in the Central Bohemian Region, which has become very popular and well visited by people during the last 10 years. Castle has a long and rich history both in the past and in the modern age, and after the 2nd World War, it was almost destroyed by inadequate treatment during the communist regime.⁶ In 2000, the Castle was taken over by the private company Loučeň, a.s., which reconstructed the Castle. The reopening ceremony was held in 2007.

It was reconstructed thanks to European funds subsidy and personal loans taken by the company executive Kateřina Šrámková. Castle operation includes both presentation (for tourists) and educational activities. Except “traditional” tourist attractions such as “climbing centre”, it also offers a wide range of educational activities complemented by many gamification elements such as guided tours in historical costumes with history explanation about Thurn-Taxis family and their business in postal services. Castle offers tours for children in several categories (very young, older etc.).⁷

As we can see in the table below, after the launch of the new forms of its presentation, the number of visitors of the castle began to rise significantly, and this previously absolutely unknown site has become a very popular one with more than 180 000 visitors in the year 2017.

TABLE 1 VISITORS OF “ZÁMEK LOUČEŇ” IN THE YEARS 2009-2016

Year	Number of visitors
2009	94 221
2010	104 277
2011	117 954
2012	102 302
2013	103 008
2014	168 677
2015	161 845
2016	144 740
2017	182 695

Source: The National Information and Consulting Centre for Culture (NIPOS)⁸

So, in conclusion, modern methods are beneficial for better promotion; and thus higher number of visitors of this castle. In this example, modern methods are a great motivation factor to visit the castle and increase the time spent there by the visitors to learn more about history of the place and history of the country, which this castle is part of.

⁶ <https://zena.aktualne.cz/zamek-loucen/r~i:wiki:4093/>
<https://www.zamekloucen.cz/en/about-castle>

⁷ <https://www.zamekloucen.cz/en/>
⁸ <https://statistikakultury.cz/publikace/zakladni-statisticke-udaje/>

The Castle Ždár nad Sázavou is related to the former monastery, and represents a unique landscape and urbanistic baroque complex. Current appearance dates back to the 18th century and Santini's reconstruction. In the 1990's, the Zdar estate was restituted to the Kinský family. From then they have been reconstructing and revitalizing it continuously. In 2015 they have opened new exposition, called New Generation Museum and they offer very modern programs: ICT based exposition and gamification-based educational programs for children and students.

They offer two kinds of programs in a very modern form. First is permanent exhibition with numerous IcT based and gamification elements, the main word in the presentation is "Experience" – as a visitor you should experience the unique atmosphere of history, life, creativity, and beautiful nature of Ždár with the help of modern technologies and game-based puzzles.

They also offer special educational programs for schools in 3 categories – program for lower primary school, program for upper primary school and program for high school. These categories are adapted to the age of the participants and, e.g. students of every age will become familiar with architecture and its functions with famous architect Santini, with symbolism of church art, geography or artistic styles.

This project was also co-financed by European Union, and although it is located relatively far from the capital city Prague, which is the main destination of most tourists, it also benefits from the nearby presence of a UNESCO cultural heritage site: Pilgrimage church of St. John of Nepomuk at Zelená hora. Therefore they don't face problems with low number of visitors as it is more usual in surrounding cultural heritage monuments of the same region.

We have statistical data only from one year, 2016, which is the first whole year of New Generation Museum existence and these numbers, compared to previous years, increased by 50%.⁹

Virtual museums

Virtual Reconstruction of a Neolithic Village

First example we present is the virtual reconstruction of a Neolithic village¹⁰, based on the example of a prehistoric settlement of village Bylany near Kutná Hora. It is one of the biggest projects of Virtual reality historical reconstruction in the Czech Republic. It also contains Virtual museum of 3D artefacts.¹¹ It was managed by Prague Institute of Archaeology of the Czech Academy of Sciences and has been founded by the Ministry of Culture of the Czech Republic. This project took inspiration from other projects such as the

⁹ https://jihlavsky.denik.cz/zpravy_region/pamatkam-na-vysocine-se-dari-turiste-se-zde-citi-bezpecne-20170802.html

¹⁰ <http://www.archaeo3d.com>

¹¹ <https://sketchfab.com/archaeo3d>

3D reconstruction of the setting of a complex of caves near the village of Montignac in France with over 600 parietal wall paintings.

The aim of the project, according to the official project description “is to apply 3D scanning technology to create a virtual museum providing a picture of the Neolithic culture, based on the example of the settlement in Bylany near Kutná Hora. The main parameter of the applied research will be to set up a methodology for recording, hoarding and presentation of archaeological finds digitally. The basic technology will be optical 3D scanning of artefacts, its asset is the ability to capture the perfectly accurate virtual three-dimensional image of the object. On the one hand, this brings new presentation of possibilities of mobile and immovable heritage, and on the other hand, it multiplies the potential for their conservation in case the original is destroyed. GIS of the Bylany site and its virtual model showing different forms of immovable heritage (houses, rondels, villages) constitutes integral part of the project. These results will be presented on the site in the form of outdoor poster boards.”¹²

Unlike previous example, this project is focused on Virtual reality reconstruction and creating a Virtual museum. We don't have exact data about visitors of this virtual museum so we cannot exactly say how people react to it, but more than 900 artefacts were digitized within the project. There is a big potential of this project for education with the possibility to download 3D source data of some artefacts with the Creative Commons Public Licenses. This project also developed modern application for smart phones.

Gulag online

The virtual reconstruction of Soviet regime concentration camps (sometimes euphemistically called labour camps) was developed by the Czech NGO gulag.cz in cooperation with the Institute for the Study of Totalitarian Regimes.¹³ It is the world's first comprehensive project of its kind, linking archaeological and archival research, oral history and geographical data, as well as the latest information technology. The virtual museum is accessible at the website www.gulag.online in Czech, English and Russian.¹⁴

The basis of the virtual museum is a complete 3D tour of the Gulag camp illustrated by witnesses' testimonies and a tour of authentic objects or documents which are obtainable. All this is accompanied by a bibliography, basic texts about the history of the Gulag and Soviet repression. Individual documented places and stories of the witnesses are displayed on an interactive map that illustrates the geographical extent of Soviet repression. This map allows you to switch between different layers - such as satellite imagery or detailed military maps.

¹² <https://starfos.tacr.cz/en/project/DF12P01OVV032>

¹³ <http://www.gulag.online>

¹⁴ <http://gulag.cz/en/news/virtualni-muzeum-gulag-online-otevrelo-sve-brany>

The Gulag Online Museum contains panoramic photographs capturing the current form of the labour camps, as well as 3D models of objects such as items of daily usage, diaries, personal correspondence and period photographs of prisoners from the investigation files of the Soviet secret police.

Users of this virtual museum can navigate between 3D graphics, maps, panoramic photographs etc. The navigation is intuitive and simple.

The establishment of the museum has been financed by the support of the public on a crowdfunding website and the Vodafone Foundation's Technology for the Future programme. We consider this Virtual museum as an extraordinary project with great educational potential, especially in learning about activities and repression of totalitarian regimes and history of the 20 century as well.

Wiki/QRpedia

There are a few places in the world where QRpedia works. QRpedia is combination of QR codes and Wiki system. The city district Prague 10 is such a place. Prague 10 installed 15 QR codes on the important sights in 2012, other can be suggested by visitors, if they encounter well-described article about sight in Wikipedia¹⁵.

PICTURE 1 QRpedia IN PRAGUE



Source: https://cs.wikipedia.org/wiki/QRpedia#/media/File:QRpedia_in_Prague_10_2.JPG

¹⁵ <https://www.cnews.cz/praha-10-spousti-qrpedii-pamatky-oznakuje-qr-kody/>

QRpedia code was also installed in exposition of the Silesian Museum in Opava before i Silesian Museum Night in June 2013 (Kršková 2014, 32).

The city district Slovany in Pilsen installed QR code on historic sites, old and modern buildings and city parks. (Kršková 2014, 32).

The QRpedia is an informal education tool which can be used also for supporting tourism and local patriotism.

Meta virtual museum – Czech participation in international network EUROPEANA

As we mentioned at the beginning of this article, the Czech Republic is also part of the Europeana project - EU digital platform for cultural heritage, which is considered as the biggest virtual museum in Europe and whole world. Europeana is an initiative of the European Union, financed by the European Union's Connecting Europe Facility and European Union Member States and its budget is (year 2016) more than 6 milion euro.¹⁶

Until now it contains 58,074,584 artworks, artefacts, books, films and music files from European museums, galleries, libraries and archives, its own mission is described as “We transform the world with culture. We build on Europe’s rich cultural heritage and make it easier for people to use for work, learning or pleasure. Our work contributes to an open, knowledgeable and creative society. “

Czech Republic participated in this project with many institutions with more than 110 000 digitalized items altogether.

Conclusion

The adoption of ICT-based tool and methods in the field of Cultural Heritage Education helps to avoid or reduce cultural barriers, it can contribute to “open” the doors of cultural heritage patrimony to wider number of people (Ott, Pozzi 2011).

As we can see in the previous chapter, modern educational methods, including gamification, are widely and successfully used as a marketing activity for attracting tourists for cultural heritage sites and associated educational activities - they are a substantial part for these marketing activities, which are often based on modern IcT-based and gamification approaches.

Also, the virtual presentation of the country and of its historical events connected with its culture and history is very popular and becomes increasingly used. Czech Republic is one of the world's pioneers; projects like gulag.info or virtual reconstruction of Neolithic village are a unique initiative with professional technical processing.

¹⁶ https://pro.europeana.eu/files/Europeana_Professional/Publications/europeana-annual-report-and-accounts-2016.pdf

International databases such as EUROPEANA or Wikipedia are often used by schools for education in the field of cultural heritage. While EUROPEANA is a project with relatively high costs, funded by EU and member state institution, Wikipedia is a multilingual, web-based, free encyclopaedia, based on a model of openly editable and viewable content, which is considered as the main advantage and disadvantage at the same time.

Except Wikipedia, there is one common aspect in the selected types of examples used in this article. Cultural heritage sites or meta virtual museums – they all have been funded by public money, mostly from EU funds, in some cases supplemented by private resources. As we can see with the examples of Castle Loučeň or Castle Ždár nad Sázavou, these funds are often used for strengthening the educational aspect of cultural heritage presentation which also serves as a successful marketing tool that brings more visitors to these cultural sites. QRpedia is a good example combination of relatively cheap public funding and using open source education resources.

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Key words: open education, grey material, teacher formation

Abstract: Open Education is a new approach experimented enthusiastically since the last 15 years in the world. Albania, being a country that emerged from the “silence communication” in the beginning of this century, had the opportunity to perceive new communicative ideas and models applied in teaching and learning. One of them is the efficient use of media and information literacy in the education process in Albania, with particular emphasis on teaching foreign languages. The essential changes that the Albanian curriculum made that the Albanian teacher of all levels face new challenges either in the syllabus design or in the use of textbooks. However, it should be said that Albanian foreign teachers at all times have been the first of applying new models of teaching and finding teaching materials as a result of the fact that they were the only ones in Albania who were in direct contact with the *culture* of another through the foreign language they taught. This study was applied in 120 schools which were involved in “ILIRIA” project; a project that foresees contemporary language teaching in Italian Lingua 2, in Albania. Among the main elements of teacher training, in the framework of this project with contemporary methods, an important place has taken their skill to embrace textbooks used in teaching with renovated and improved syllabuses. In this framework, teachers have been trained to use “grey” materials obtained from literature, media and information in the design of textbooks that they provide to students as well as within classroom activities and homework. Thus, last year I have compiled a study strategy which I'm presenting in this paper to see the productivity of what is done till now. 220 questionnaires were delivered to teachers of the 9-year system schools, as well as involved in the ILIRIA project by using this way the quantitative research method. From the data processing results, it comes out that despite good work done so far, we are still far from the expected results; so teachers feel safer to use texts produced by publishing houses.

Introduction

Society today is an interconnected society based on knowledge and information. In Central Europe and especially in the countries that have had more impact on the educational models of Albanian school earlier in XXI century, it has been talked about the digital school as a need to modify the learning environment and the promotion of digital innovation since the early 1980s (the first computers were located in northern European schools, and then spread to central Europe and beyond).

In Albania this new trend of teaching as an enviable objective appeared only in the 2000s. The Albanian government supported by materialized projects of European Commission in Albania through the expertise of many European governments, began to actualize the first projects of introducing computer science in the framework of the whole process of decentralization and the complete change of school curricula: By changing the system, changed the training (formative) needs based on goals and objectives of the new Albanian society - reflected in education and school. The national curriculum recognized the introduction of new subjects, including Information Technology.

Coincidentally, the first curriculum reformed was that of foreign languages. Foreign language teachers were selected as the "pioneers" of change as they were the only ones who had been in touch with the "culture of the other". Texts we used were produced in different countries of the world, so they carried and brought in Albania ‘formamentis’ and different world views. Much was said about digital texts, alternative texts, and the teacher's power to intercede in texts based on classroom needs.

It was initially the Council of Europe that assisted Albania with expertise in drafting new curricula and opening a national debate on new and different teaching models in line with the updated subject curricula, on the decentralization of texts and alternative texts. Thus, in 1994 the Italian Government invited Albanian teachers teaching Italian language to a project called "ILIRIA", which among other things still emphasizes updating with new teaching models, promoting best practice, and evaluating alternative texts and other proposals. Two sessions are held annually where Albanian teachers teaching Italian like L2 meet in plenary sessions and work in groups updating their experiences with their homologues in Italy. One of the most discussed arguments remains the use of "grey" material and cloud for the needs of each level L2. The latter remains still at the theoretical and not practical level of use because of the "history journey" of the IT in our schools. More specifically, in the '99s it was again the Italian that offered computers for more than 40 schools in the largest cities of Albania (among them 14 schools of the project "ILIRIA"). It soon became apparent that the impact of success was minimal as computers were in the labs keys of which were kept by teachers teaching computer science who were afraid of the students' up to date knowledge. Thus, the Ministry of Education again through Italian Cooperation started the training of IT teachers on the use of computers by serving them as trainers of trainers. We arrived so in the year 2012 where the Minister of Education at that time promised "internet in the classroom - 1000 classrooms would be connected to the Internet and have respectively 1 computer and video projector and thus would enable the use of e-content: the use of the digital library for every subject, digital textbooks and interactive teaching" (Monitoring report on Alter-text 2010, 37).

Anyway, the dream of open school and the use of digital textbooks remains far away. Albanian teachers feel a deep gap with their own students. The use of ICT in teaching is only conceived as homework where students can or should bring material found at home by using home's Wi-Fi. In most schools, the situation remained unchanged as the network maintenance was neglected and worst of all the training of teachers.

In Europe of that period, schools began to use the network's didactic activities extensively under the slogan "no more students in the lab, but the lab at the students" (Granieri 2006, 125). This revolution aimed at innovative teaching through the use of cloud by either the teachers or by the students themselves connected to the network. The textbooks produced by the teachers themselves are a tangible reality in many schools in Italy. Italian Model "Scuol@ 2.0" in the framework of the program "Scuola digitale" by the Ministry of Education (www.apprendereinrete.it), that is, the application of innovative strategies in didactic programs where new ways of organizing human resources are accompanied by significant infrastructural changes, reaches in Albania exclusively through Italian trainers of "ILIRIA" project and divulgative materials but it is still seen as utopia. In the Albanian education system, the infrastructure and the specialists are still lacking. We will need to arrive in 2013, when in Albania, through the ICT project (learning ICT in the European dimension) that involved most of the schools "ILIRIA", besides teacher training in the technical use of the

device and equipment with in-depth ICT knowledge, was aimed at their training in the use of ICT in the classroom as an integral part of teaching. For this a special emphasis was given to the training trainers of trainers with new pedagogical models that require the combination of computer and interactive pedagogy knowledge. At the end of the project, after finishing the training of a whole army of teachers, after establishing four training and certification centers for teachers, after establishing a permanent technological observatory at the Ministry of Education, Albania had to consider itself among the countries that approached learning through the use of ICT in classroom and where frontal learning was just a reminder of the past. If we continue with the achievement statistics presented in the ministerial portals, we will arrive in the years 2015-2016 in the powerful "Intelligent Class" program introduced by the government which selected 60 schools, respectively 120 classes of 9-grade with 45,000 students to whom laptops and tablets were distributed. The lesson would be "without books, chalks and notebooks" in the five core subjects: chemistry, biology, foreign language, literature and mathematics. So Albania could name itself ranked among countries where open school is at home. Sitos program, was implemented for the same objective, introduces the E-education portal and later on was implemented the Socrates program which was related to data collection of the education system. All of these efforts can be considered as small and insufficient steps in this regard as technological, infrastructural and formative development and progress have remained within a narrow specialists' group. It seems that teachers and students in the whole territory of the country see this progress only in governmental documents, in the letters and directives of the Regional Education Directorates, in the lectures/trainings of foreign and local trainers. They encounter little or nothing in everyday practice at school where the teacher talks more than 20 minutes without making a break, where textbooks are extremely loaded and not interesting, where smartphones or project laptops are mostly in boxes because of teachers' fear that they will break up, where computer labs are still functioning somewhere and no longer (Maragliano, 2005: 42). Despite of this, there is still experience and successful practice. There are students who "guide" their classes on experience through the use of online materials, as well as teachers who use online materials to build didactic material or the text as well as "manage" the use of smart phones, tablets, or laptops. These teachers have realized that nowadays, when it is difficult to prohibit students using mobiles in the classroom, it is more convenient and more logical to use them in the teaching process (Alessandrini, Pignalberi 2012, 86). Thus, students feel at the "habitat of their time" and enjoyable results are achieved more easily.

Methods

This study has been carried out through a quantitative research model. Withdrawal of the sample from the population is made with sample stage method. Initially, the study was applied in 120 schools that were involved in "ILIRIA" project. First of all, the population that served for this sample is made of trained teachers by state institutions and foreigntrainers invited by Ministry of Education. As mentioned above, the

stage probability sample is used to select the sample from this population. It involves selecting the sample in stages; that is, taking sample from sample.

Instrument and its reliability

The instrument used for gathering the data is a questioner made of some rubrics. The questionnaire is conducted by 220 respondents who in 15 minutes completed it. Initially participants were informed about the purpose of the study and clarified that the survey data will be used only for academic purposes. Given that the necessity of the professional training offered to teachers in IT to make them come closer to the digital school which is the only focus of this article, only the elements of the questionnaire will be represented. Two subscales are designed to measure the perception of teachers related to their ability to embrace the textbooks with the renovated syllabuses, the use of alternative texts, ‘handmade’ texts by the “grey” materials and the use of Cloud Computing (Reese 2010, 37).

Those are arranged in a scalar form, where teachers should circle the answer from strongly disagree to strongly agree, according to their level of agreement. Thus, item such as, their experiences, concerns, and didactic tools in their disposal are used to develop course content. The training under this project helped and encouraged teachers to better understand the class population, to develop their ability.

Items such as,

- How much familiar are the teachers with the new model of learning environment?
- How many alternative textbooks offered fit the new syllabus?
- How much difficult is it for them to find “grey” material?
- Supplementary material that they find, how much of it do they get from open resources?
- How much do they have access to cloud?

All of these are designed to measure the perception of teachers at the creation of textbooks by themselves using Cloud Computing and “grey” material according to renovated syllabuses.

From the score calculations, for a three item scale, using a response scale from 1 to 5, the minimum value would be 3 and the maximum value would be 15. A mean score of 11.2 or higher indicates high level of positive attitude toward open resources. A mean score between 7.1 and 11.1 indicate a mild level of positive attitude toward open resources. A mean score below 7 indicates low level of positive attitude toward Cloud Computing. Furthermore, Cronbach’s alpha was run in order to assess internal consistency and reliability for each of the two scales used to collect data. This scale, has a good internal consistency, with a Cronbach’s alpha coefficient reported .81. For the perceptions of teachers regarding active learning environment through Cloud Computing scale, given a response for each item, the lowest possible mean score is 4 and the highest possible mean score is 20. A mean score of 14.7 or higher indicates high level of perceptions of teachers regarding active new models of learning environment. A mean score between 9.4 and 14.6 indicates a mild

level of perceptions of teachers regarding active new models of learning environment. A mean score below 9.3 indicates low level of perceptions of teachers regarding active new models of learning environment. This scale, has acceptable internal consistency, with a Cronbach's alpha coefficient reported .72

Data analysis

The data gathered from the survey was transported into the computer statistical package SPSS. Prior to reviewing the data, assumptions for the statistical analyses were assessed. The data have been examined for normality, as well as for missing data. A tow -tailed alpha level of .05 was set and used for all statistical tests. Linear regression statistical analysis was conduct to assess whether the relationship between the use of textbooks and the new didactic materials realized with alternative tools. The following table provides a summary of variables and the analytic procedures related to the paper question.

TABLE 1.PAPER QUESTION, VARIABLES, AND ANALYTIC PROCEDURES

Paper Question	Variables	SPSS Procedures
What is the relationship between the textbooks use and the new didactic materials realized with alternative tools?	-Positive attitude toward the use of the “grey” material. - Positive perceptions of open resources.	Linear Regression.

Source: Own

Sources of error

The way this research was carried out intended to minimize non real results. However, like most of the studies made in the field of the education and teaching, even this one is self-report based. As a result, the findings depend even on the teachers' acquisition of the questions in the survey as well as on the degree of sincerity they have completed the instrument with.

During the implementation of this study, all the stages of research ethics have been followed. It has firstly been taken the permission of the respective structures in charge where the instrument was conducted. Subsequently, a sensitization of the research and its goal was done to the participants before they filled the instrument. They were guaranteed anonymity and asked whether they wanted to participate voluntarily in the study. Furthermore, participants who did not want to be part of the study did not meet the instrument.

Results

Table 2 illustrates the mean scores and standard deviation regarding the positive attitude toward the use of the “grey” material. ($M = 7.49$, $SD = 3.1$) and positive perceptions of open resources. ($M = 9.78$, $SD = 2.9$). As we can see, from the data the mean scores of Positive attitude toward the use of the “grey” material is 7.49 and this indicates a mild level of positive attitude toward them. The same situation is for the positive perceptions of open resources, where the mean score is 9.78 that indicates again a mild level of this perception for this variable.

TABLE 2. MEAN SCORES AND SD FOR TWO VARIABLES.

Descriptive statistics

	N	Mean	Std.Deviation
- Positive attitude toward the use of the “grey” material.	386	7.49	3.10
Positive perceptions of open resources.	375	9.78	2.90
Valid N (listwise)	366		

Source: Own

To address the paper question, linear regression statistical analyses was conducted. This question has explored the fact if there exists or not a relationship between the textbooks use and the new didactic materials realized with alternative tools? Table 3, indicates that 50.7 % of the variance in the positive attitude toward the use of the “grey” material can be predicted from the independent variable that in this case, is perceptions of teachers regarding open resources.

TABLE 3. THE VARIANCE OF POSITIVE ATTITUDE TOWARD OPEN RESOURCES.

Model Summary °

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	.713 ³	.509	.507	2.18

- a. Predictors: (Constant). Positive attitude toward open resources
- b. Dependent Variable: Positive attitude toward the use of the “grey” material

The ANOVA table shows, that the overall model revealed to be statistically significant, F (1, 364) = 376.666, p = .000, adjusted R² = .507.

TABLE 4. THE SIGNIFICANCE FOR THE LINEAR REGRESSION MODEL. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1787.002	1	1787.002	376.666	0.003 ³
	Residual	1726.913	364	4.744		
	Total	3513.915	365			

- a. Predictors: (Constant). Positive attitude toward open resources
- b. Dependent Variable: Positive attitude toward the use of the “grey” material

Source: Own

An observation of individual predictor in Table 5, indicates that positive perceptions of open resources (B = .762, p = .000) is significant predictor of positive attitude toward the use of the “grey” material. This suggests that a higher level of positive perceptions of open resources is associated with higher level of positive attitude toward the use of the “grey” material. For every one unit increase in positive perception of open resources, there is a corresponding increase of .762 in score of positive attitude toward the use of the “grey” material. The linear regression equation is: $\hat{Y} = 3.72 + .762$ positive perceptions of teachers toward open resources. Table 5 summarizes this regression model.

TABLE 5. THE GENERAL LINEAR REGRESSION MODEL FOR PREDICTION OF THE POSITIVE ATTITUDE TOWARD THE USE OF THE “GREY” MATERIAL TO THE POSITIVE PERCEPTIONS OF TEACHERS TOWARD OPEN RESOURCES.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	3.726	0.401		9.291	0.426
	Positive perceptions of teachers toward open resources	0.762	0.039	0.713	19.408	0.000

a. Positive attitude toward the use of the “grey” material

b. Source: Own

Conclusion

In summary, some results can be concluded at the end of this article. To answer the question, if there exists or not the relationship between the textbooks use and the new didactic materials realized with alternative tools, linear regression analysis is conducted. From this statistical analysis is revealed that there exists a positive relationship between the textbooks use and the new didactic materials realized with alternative tools. The progressive improvement of the professional formation in the field improves positively the perception of teachers toward open resources.

In conclusion, the situation of using alternative texts and realizing handmade texts by the teachers through grey material and open resources is as follows: 60.5% do not use any open resources nor do they try to produce the text through the use of grey material; 37.5% move from one text to another, occasionally try for certain topics to use grey material; 2% add actual content texts from open resources and 0.5% have a direct access to open resources, they produce the text based on the formative needs of their class.

Discussions and recommendations

In conclusion, the situation of using alternative texts and handmade texts made by the teacher through grey material and open resources is as follows: 60.5% do not use any open resources nor do they try to produce the text through the use of grey material; 37.5% move from one textbook to another, they occasionally try for certain topics to use grey material; 2% add open resources to the current material texts and only 0.5% have a direct access to open resources, they produce the text themselves based on the formative needs of their classes.

In other words, although from the '94 onwards the Italian language teachers L2 have been introduced into a continuous training process with regard to the whole range of teaching renewal and innovative learning models, yet the percentage of teachers who dare realistically to apply these methods in their classrooms remains low. Good perspectives have been made for the involvement of the pupils in the teaching process, in the use of communicative models (data given by analogous studies) whereas concerning the use of alternative or "handmade" texts created on the basis of the classes' concrete needs of their, based on this

study, results that we are still far from desired results. Teachers still do not find courage to escape from the texts that are offered to them and experiment supportive materials serving students' level in each classroom. There are identified good practices but as the findings of this study show, it results that they remain at the level of 0.5%. So that these best practices of the teachers' work and the efforts of the whole system are not lost, they must be created and developed by policy makers for all the right operational conditions. We need to create a plan that generates widespread institutional opportunities, a true alliance by all the actors for the innovation of the school. This is a cultural and system action. Only in this way digital contents in their growing variety and creativity in the school will pass into a future from exception to rule. Only in this way can we put at the center of our scholastic formation and use its role in the information and data in the development of today's interconnected society.

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THE ROLE OF INDEPENDENT ONLINE EDUCATION PLATFORMS FOR THE DEVELOPMENT OF THE QUALITATIVE EDUCATION IN UKRAINE	OKSANA ZAMORA, OKSANA PONOMARENKO Economics and Management Faculty, Sumy State University, Ukraine
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Key words: open education, e-learning, on-line course, teachers, platform	

Abstract: The research goal was to understand the opportunities of independent on-line educational platforms to satisfy the needs in qualitative education for diverse learners' groups. The paper presents Ukrainian experiences on how the information and communication technologies may be used to address the challenges of modern society related to constant change of the teaching approaches.

Using the concept of the ICT and Internet role in creating the effective educational environment the paper presents the overview of a success story of the EdEra project for elementary schools teachers. The project is a private initiative which is currently designing and providing the educational distance learning course in close cooperation with the Ministry of Education and Science of Ukraine. The course was assigned as an obligatory qualification improvement for all the teachers who will start teaching the first year pupils in September 2018. The conclusions were delivered under the context of open education and lifelong learning concepts, explored data provided by the EdEra, challenges and opportunities described by the course users in social media and interviews. The paper highlights the importance of identifying good practices in the on-line adult education under the increasing pressure of global trends and their close influence at the quality assurance standards for modern education. The research outlines the pressing need for collaboration with independent companies to avoid a widening gap between the adult learners needs/abilities and technologies progress. The low computer literacy, absence of skills in on-line courses use, administrative information distortion within the elementary schools management system resulted in the project launch failure. Only a repetitive presentation of the framework, tools and methodology combined with wide social media use helped to maintain the course further operation which is a success now. The results of the paper generalize the best approaches which allowed the project team to succeed.

Introduction

The main challenge for the country competitiveness, influenced by the modern economy globalization and the acceleration of scientific and technological progress, is the construction of an information society and training of a new generation of professionals who understand the importance of the introduction of modern information and communication technologies in all spheres of life (Radchenko 2016, 10). That is why one of the top issues among the sustainable development objectives defined by the Ukrainian government is the provision of quality and affordable education throughout the citizens' life including the Internet access and relevant skills (National Report "The Objectives of Sustainable Development: Ukraine" 2017, 34-36). Ukraine has traditionally high levels of adults coverage by school education and literacy. However, the increase in the educational level of the population becomes possible partly due to lower quality of educational services, which is currently an issue for discussions. Social and economic problems are becoming more agile, interrelated and critical:

- commercialization of education works both ways: making it more accessible while less qualitative;
- equal access to education and vocational training for the low-income families increases the number of more educated people while not guaranteeing their employability;

- underdevelopment of "educational inclusion" and "life-long learning" concepts, involvement of children with disabilities and special needs in the education are limited by the citizens awareness, educational infrastructure, teachers skills and resources;
- the differentiation of the quality of school education caused by the territorial type (level of education in rural and urban educational institutions) and type of educational institution (private and capital-based institutions are able to engage bigger financing and offer more opportunities for their learners) is resulted in increasing the private tutoring and the demand in an on-line education.

However, the on-line education opportunities are still considered critically by the population. Few employers are ready to accept the on-line education results as an acceptable evidence of the candidate professionalism. This is rather seen as an indicator of a person's strive for the personal improvement and is definitely not taken as a basis for additional financial remuneration. Thus, according to the official data, the level of participation in formal and informal education and additional professional training of people under the age of 70 is about only 9%. The most active cohort in regards to different types of training are young people aged 15-24 (National Report "The Objectives of Sustainable Development: Ukraine" 2017, 36). This may be explained by the expanded opportunities, which become accessible through their life in bigger cities during their studies in the higher educational establishments and extra chances and resources available for studies.

There is another trend of the modern Ukrainian society - the spread of the Internet and the increase in the number of its fluent users: from 22,0% in 2010 to 48,9% in 2015 (urban settlements 28,9-58,4%, rural areas - 7, 5-30,3% respectively) (National Report "The Objectives of Sustainable Development: Ukraine" 2017, 36). Namely this tendency combined with the boost in the market of the second-hand digital technologies equipment gives an additional basis for the on-line education perspectives. The global tendency when the online courses are gradually becoming an alternative to formal education is currently entering Ukraine. The development of this area of education of Ukraine can solve a number of problems outlined above and ensure equal access of men and women to the qualitative education.

The research goal was to investigate the global experience and understand the opportunities and challenges of independent on-line educational platforms to satisfy the needs in qualitative education for diverse learners' groups using the case study of Ukraine. The paper presents the challenges of a modern on-line course for adults related to the poor information campaigning, low computer skills, age-related issues, extra education intolerance of the adults.

The paper offers the overview of a success story of the EdEra project for elementary schools teachers. The project is a private socially oriented initiative using the crowd funding and sponsorship support. Currently the platform is designing and providing the educational distance learning course in close

cooperation with the Ministry of Education and Science of Ukraine. The course was assigned as an obligatory qualification improvement for all the teachers who will start teaching the first year pupils in September 2018.

Thus, the main research question was if the independent on-line platforms are able to become a tool for enriching the adults formal education in the countries with the number of on-line education tolerance challenges. Using the EdEra project cooperation with the Ukrainian government case study, the purpose of the paper was to form the successful formula of incorporation into the formal education for the independent on-line educational platforms. The possible outcomes will be delivered under the context of open education and lifelong learning concepts, explored data provided by the EdEra, challenges and opportunities described by the course users in social media and interviews.

The World's Experience in the On-line Education Independent Platforms

Such forms of distance education as mass open online courses (Massive Open Online Courses or MOOC) have lately become widespread in the world. There is quite a big number of existing online platforms for the MOOCs, which host open courses from leading universities and organizations in the world. Particularly popular are the following platforms: Coursera, EdX, Udacity, actively developing Khan Academy, Canvas Network, Udemy, and others.

The most famous project Coursera fruitfully collaborates with higher education institutions from 28 countries. It finds its partners not only among the universities but also in other, non-academic fields, such as the World Bank, the Commonwealth Education Trust, National Geographic Society of the USA, etc. Courses are presented in different areas of the educational curriculum, such as humanities, social sciences, business and management, etc. The majority of courses are in English, however, you can find courses in Chinese, French, Spanish and other languages. As of April 2018, more than 2000 courses from 149 partners were offered on the Coursera platform.

With the emergence of a wide range of online courses and independent educational platforms, the question that arises is what trends and services need to be taken into account when creating their educational content. Additionally, the target audience specific features add more complexity to the issue. Such a specific learners' audience are the adults, who are the teachers themselves. Therefore, in order to achieve the goals of providing effective and high-quality educational services under the modern conditions, it is important to comply with the following latest trends forming the modern Internet environment (EDERA R&D 2017):

1. Micro learning: the reduction of the courses duration without the loss in their quality. Modern people are used to quickly get the necessary information from Google or via watching the short videos on YouTube. Accordingly, it is challenging for a learner to complete long courses, especially if the learner is a working adult. Thus, the online platform "edX" experts recommend the educational videos that last no longer than 6 minutes. If the video lasts longer, the number of views will fall sharply. The micro learning approach changes the structure of courses.

2. Adaptive learning: personification of the content, adaptation for a learner, and the development of an individual trajectory of studies. The invention of an effective system/tools of an adaptive education may be the biggest revolution in the online education since the first massive open online courses. Thus, the adaptive education tools are already being implemented at the U.S. universities: for example, Knewton company has built the partnership with Arizona State University, thanks to which, the student receives tasks that fit exactly to his/her educational needs and the teacher gets the statistics of each individual student and the group as a whole. These data allow to modify the classes in order to make them maximally effective for each learner.

9. Gamification: adding elements of the game into the educational activities as a means of capturing and retaining attention. Game elements such as icons, levels, balls are used to encourage a learner. We are used to consider the video games to be for children, however, the average gamer is 30 years old, while 37% of gamers are over 35 years old. For example, the Khan Academy platform actively uses the game tools in the form of badges that users get for certain achievements (video watching, task execution).

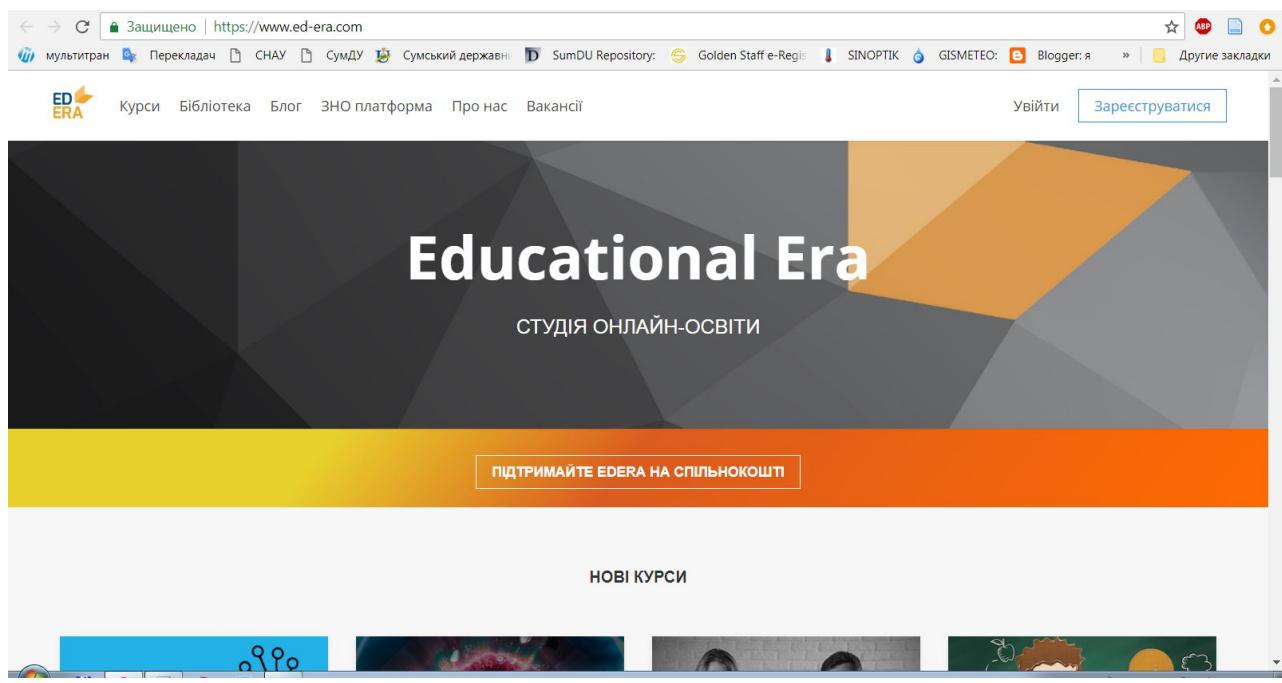
Another successful example of using on-line platforms in education is an online MSc programme in Computer Science at the Georgia Institute of Technology, US (Goodman, et al., 2016, 1-8). Its example illustrated how the online opportunities affects education in America, including its benefits. It was found that the main target group of on-line programs are middle-aged people, 90% of which are already in the middle of the career development. For comparison, it should be noted that half of students are not working yet. An interesting fact was that 70% of applicants for the online programs were Americans, while their share was only 8% in their full-time form. In addition, the cost of the on-line training is six times cheaper than the full-time. Thus, the positive experience of the US institutions has revealed the possibility of solving a significant number of challenges faced by the education system in Ukraine through the introduction of on-line courses at the universities.

The Essence of the EdEra Educational Project for the School Teachers

EdEra is an online education studio that creates online courses, interactive tutorials, educational special projects and models for integrating modern educational solutions into the traditional educational process. The EdEra team was launched by the two people who established the project in the spring of 2014, later the team grew up to 15 dedicated workers and united many volunteers around them. Currently they are constantly looking for employers and volunteers.

All content on the platform is based on the material offered by the teacher but later processed by the EdEra team by shooting, installation, creation of illustrated notes, presentations, animations, generation of creative ideas on material presentation, methodical work, initial analysis of created content. All technical work on the site, maintaining the operation of the platform and server work are also performed solely by members of the EdEra team. The staff is constantly learning to introduce new technologies and developments into the learning process and are open to new ideas and cooperation.

FIGURE 1. EDERA – STUDIO OF THE ON-LINE EDUCATION



Source: EdEra Web-site, 2018

EdEra online courses include (EdEra platform materials, 2018):

- Interactive lectures: one working week consists of an average of 2-3 lectures. One lecture is a set of short videos that contain the questions for better material mastering and knowledge control. Taking into account the experience of the western educational platforms and the feedback from the focus groups, the best video reception time is taken for 6-10 minutes. Another important aspect is that online mode allows EdEra to change the way the lecture is presented by creation of the dynamics feeling. For example, within a geography course, immediately after the theoretical part of the presentation, the student is transferred to Lisbon, where the Portuguese people tell about the explorer Vasco da Gama, which is impossible in live.

- High quality abstracts: each lecture is accompanied by extra material, usually in the form of lecture notes, which are not just a set of formulas, definitions, but a complete section of the book with illustrations and detailed explanations. At the end of each course, a textbook is generated and it may exist independently of the course afterwards. All abstracts are developed by the teacher and the EdEra team of designers and methodologists.

- Homework, exams and a progress page: in addition to interim questions during the lecture, there are two more methods of monitoring the progress. Each week the student has to complete several homework assignments, which have the deadline. Also, in the middle and at the end of the course, the student must perform a more fundamental task – to pass an exam. Depending on the course, this may be a test or a project work. All control tasks are evaluated according to the weighting factor. That is, an exam is more important than a homework, a homework is more important than intermediate questions in a lecture. All results are

broadcasted to the progress page, which also offers a final assessment. To obtain a certificate of successful completion of the course, this assessment should overcome a certain threshold.

- Communication and dynamics: the project offers an opportunity to communicate and discuss the problem issues of the course with other students, teachers and the EdEra team on the forum. There is a separate forum space for each question, video collection and other course parts that makes communicating more comfortable and structured.

- Any time, any place principle: the Internet and a respective device are everything one needs to complete a course. The entire study process is available online 24/7, and after passing the course its archived version remains with a client forever. Thanks to that the system allows to distribute a learner's time with maximum benefit. The EdEra believes that the best performance during the training is when there is an inspiration.

- Availability and motivation: the EdEra is an educational project with a social mission that means that an access to course materials is completely free of charge. However, there is an opportunity to thank to the team at the end of the course.

The object of our study was the distance course "Online Course for Elementary School Teachers" which was designed within the framework of cooperation between the Ministry of Education and Science of Ukraine and the EdEra online education studio with the participation of NGO "Osvitoria" and the other partners. The EdEra platform was chosen among the others to implement the course, as currently there is no comprehensive governmental platform for such events in Ukraine. The course was created in accordance with the Memorandum signed between the Ministry of Education and Science and EdEra. The course was created with the help of a charitable grant without attracting funds from the state budget: it was funded by the Renaissance Foundation, partly supported by the United States Agency for International Development (USAID) and the Pact in Ukraine.

FIGURE 2. THE DISTANCE COURSE "ONLINE COURSE FOR ELEMENTARY SCHOOL TEACHERS" AT THE EDERA PLATFORM

The screenshot shows a web browser window with the URL <https://courses.ed-era.com/courses/course-v1:MON-EDERA-OSVITORIA+ST101+st101/about>. The page title is "MON-EDERA-OSVITORIA: ST101 Онлайн-курс для вчителів початкової школи". The main heading is "ОНЛАЙН-КУРС ДЛЯ ВЧИТЕЛІВ ПОЧАТКОВОЇ ШКОЛИ" with a "ЗАПИСАТИСЯ НА КУРС" button. Below the heading, there are three icons: "Безкоштовний курс" (Free course), "6 модулів" (6 modules), and "30+ лекцій" (30+ lectures). A sidebar on the right lists "Доступ до курсу" (Access to the course) with "матеріали відкриті 24/7" (Materials available 24/7), "Дата початку навчання" (Start date of learning) with "1 лютого 2018" (February 1, 2018), and "Сертифікат" (Certificate). At the bottom, a banner reads "Дистанційний курс ознайомить вчителів з новим Державним стандартом".

Source: EdEra Web-site, 2018

This course became an obligatory stage for the improvement of the 22000 teachers qualifications who will begin to teach the first elementary classes in September 2018 (Order of the Ministry of Education and Science of Ukraine dated January 15, 2018, No. 34 and No. 36). The course was designed under the influence of importance of identifying good practices in the on-line adult education and the increasing pressure of global trends. The quality assurance standards for modern education at the elementary schools were in the centre of the content design.

The Successes and Challenges of the On-line Course for Teachers Offered by EdEra

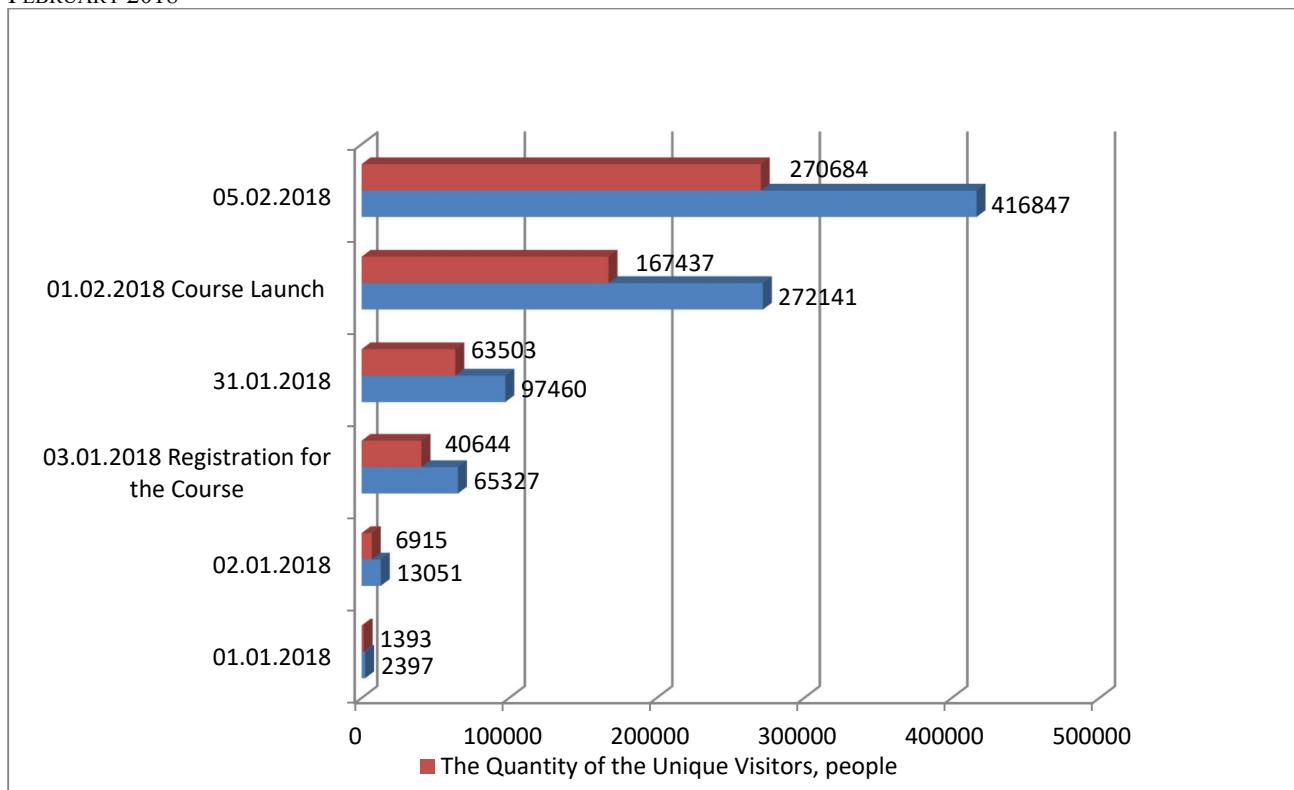
The major findings of the study are based on the analysis of the process of implementation of the "Online Course for Elementary School Teachers" by EdEra which were revealed within the response to the official inquiry to the platform. So, course was launched on February 1, 2018. By February 1, local education authorities received a letter with detailed information about the training start. Eight annexes were also disseminated containing instructions and recommendations on how to register for the course and how to use the platform for training. The same instructions were posted on the platform. A separate section has been prepared with answers to frequent questions that arise before/during studies on the online course (the section is still periodically updated).

The course consists of 6 training modules, all of them are already uploaded and completed by the majority of the learners enrolled in the beginning of the course launch. Among the topics are: the State Standard of Elementary Education, methods of competence-based education, cross-cutting skills, integrated learning (thematic and activity approaches), teaching methods in the first elementary class, inclusive education. A separate block is devoted to neuropsychology: science, which allows the teacher to understand

the features of the functioning of the brain, identify the causes of difficulties in learning and help the child to cope with them (Official Response to the Inquiry to the EdEra, April 2018).

The course includes educational videos with practical demonstrations of working with pupils at school; additional text and graphic materials, some of which can be printed for the teachers' use; theoretical and practical tasks; a forum for discussion of problem topics with course users and expert lecturers; an interactive glossary-guide for a quick access to the most important topics. Students can study free of charge 24/7, all materials for completing the course are also stored in their own on-line cabinet.

CHART 1. DYNAMICS OF THE ON-LINE COURSE "ONLINE COURSE FOR ELEMENTARY SCHOOL TEACHERS" LAUNCH, JANUARY - FEBRUARY 2018



Source: Official Response to the Inquiry to the EdEra, March 2018

However, as such a large-scale compulsory on-line course designed specifically for Ukrainian elementary school teachers was implemented for the first time, a number of problems arose. Thus, the main challenges of launching the teachers' online course were (source: social networks, forums and personal interviews of the course users):

1. Distortion of the information in local schools and inattention of course learners. Despite the official launch date of the course scheduled for February, there were 700 teachers staying on-line at 5 a.m. on the January, the 3rd, at the EdEra web-site, ready to get registered. This was caused by the rumour and direct orders of the school directors to get registered as soon as possible otherwise those who failed would lose their job in September. Some of the directors informed their staff that not only the teachers of the first class pupils but all the cohort of teachers should be registered. These all caused the situation, that despite the fact

that the registration for the course is always available and will not stop at least till the end of May 2018, there was a complete “full house” on the day of the course launch - about 167 437 unique users visited the platform, of which more than 7000 registered for the course (Charts 1, 2). This led to the technical difficulties that were quickly fixed and the platform was working in the usual mode the next day.

2. Low computer literacy and the culture of virtual communication of the course users. The greatest amount of complaints was received during the registration process due to incorrect typing of the e-mail by the learners during their registration. During the first days of the course launch, the users were trying to complete the module as fast as possible and got very nervous because of the Internet speed, own mistakes, etc. The fear of failure was one of the greatest motivational factors to search for extra help on order to avoid the public shame in front of the colleagues and the school administration. A big amount of teachers responded to the automatic no-reply informational e-mails, which they received after the registration and which contained capital-lettered warnings not to reply.

3. Difficulties with the execution of tasks due to the hasty execution and inattention of the course learners to the details. At the beginning of the training, Modules 1 and 2 allow only two attempts to provide an answer. Due to the fear of making a mistake, the participants began asking their colleagues for answers, using the social networks, including Facebook, where the right answers started to be published. The brightest examples of the academic integrity violations could be found in a Facebook group called “Site of the Elementary School Teachers” (<https://www.facebook.com/groups/844649238918653>) where those who complained that they simply did not have time for completing the course because of the “health, family issues, work load”, received print screens with the correct answers. However, according to the EdEra information, the majority of those involved are found and soon there will be a decision on their future.

FIGURE 3. A COMMERCIAL OFFER TO PROVIDE CORRECT ANSWERS FOR THE "ONLINE COURSE FOR ELEMENTARY SCHOOL TEACHERS" COURSE AT THE OLX.UA WEB-SITE

The screenshot shows a commercial offer on the OLX.UA website. The ad is titled 'Допоможу пройти Онлайн-курси для вчителів початкової школи EdEra' (Help pass the Online courses for elementary school teachers EdEra) and is located in Volyn Oblast, Vladimir-Volynskyi district. It was posted on April 21, 2018, at 01:36. The ad includes a QR code and a phone number: 09x xxx xxxx. It also features a small profile picture of a user named Юрій, with the note 'на OLX з вер. 2013'. Below the main ad, there is a smaller screenshot of a web browser showing the course registration page on the EdEra website.

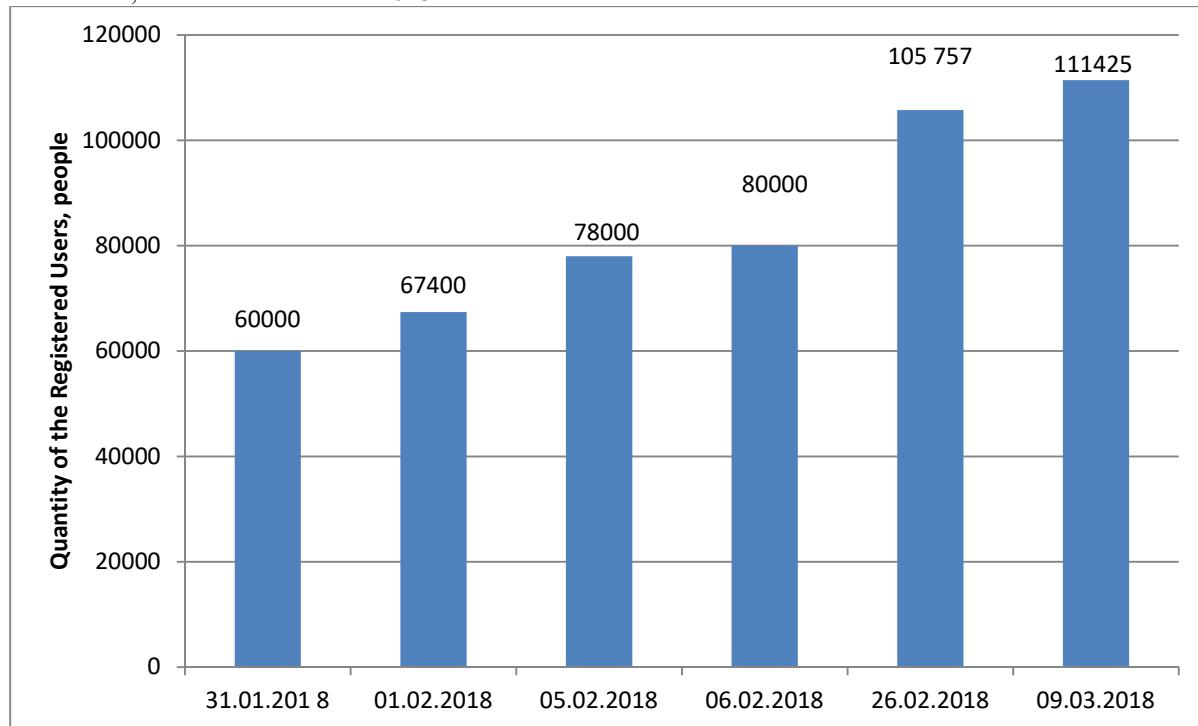
Source: www.olx.ua, 2018

Course developers contacted the relevant community administrators and the corresponding entries with the answers were deleted. It is important that most teachers reacted negatively to the publication of the correct answers by their colleagues and are now independently tracking such precedents and blocking users who offer to share the answers. With this in mind, starting with a Module 3, all questions have three attempts to provide a correct answer and a randomiser of questions in modular tasks is set up. For the course learners convenience the Module 3 was decided to publish gradually due to its significant volume.

Thus, as we can see, educating through an on-line platform provides an excellent opportunity to receive immediate feedback in an interactive form and to make relevant adjustments to the learning process, as well as to identify the most relevant and interesting topics. In particular, in addition to improving the evaluation system, the requests of the teachers for the topic of the bullying were taken into account and video materials were added. The feedback has also reflected that the topic of overcoming discrimination in the classroom and stereotypes in the society as a whole was very relevant for the course users.

Later, it was noted, that with the progress of publication of new materials, the users were leaving more and more positive feedback: both on the study progress and on the content of video collections. Panic has gone down. New users join the course every day and others study without hurry and at their own pace (Chart 2).

CHART 2. DYNAMICS OF THE REGISTERED USERS OF THE ON-LINE COURSE "ONLINE COURSE FOR ELEMENTARY SCHOOL TEACHERS", JANUARY - FEBRUARY 2018

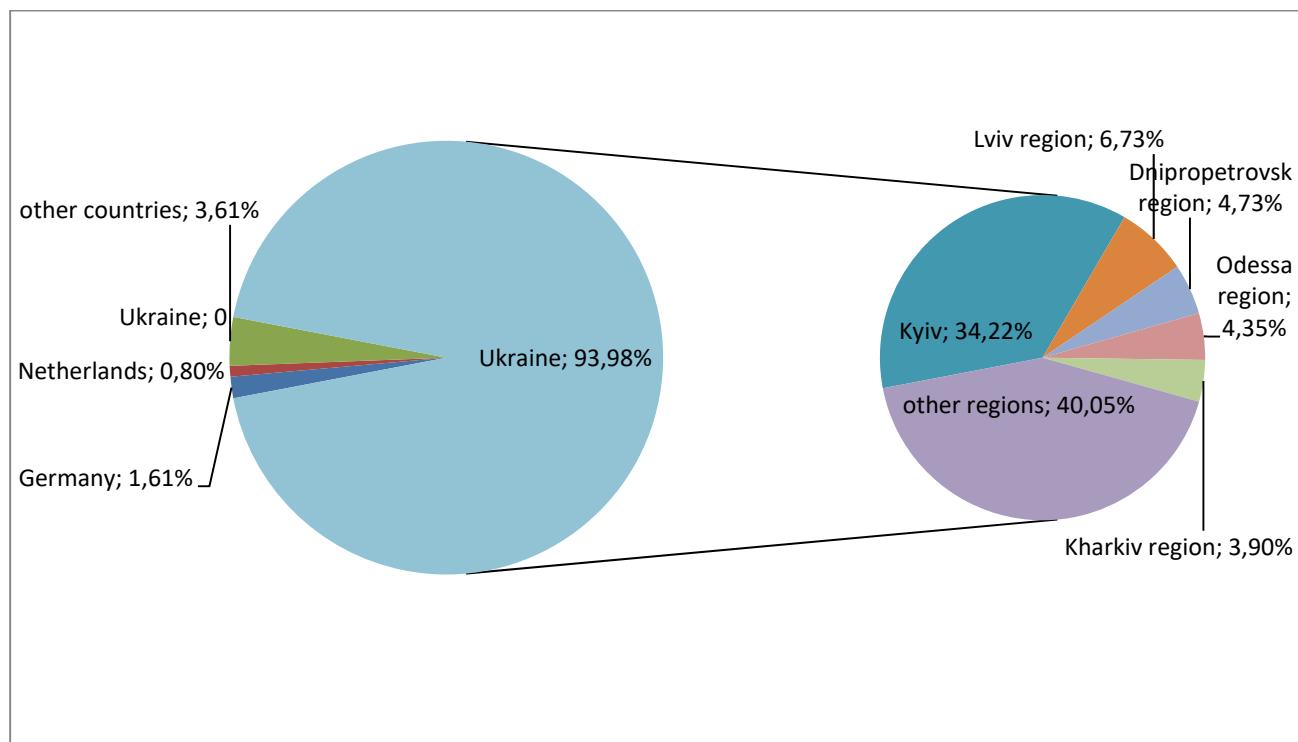


Source: Official Response to the Inquiry to the EdEra, March 2018

So on February 26, 2018, after the publication of the first division of Module 3, there were 105 757 users registered, while 47 281 passed the Module 1, 41 522 passed the Module 2, and 41 643 passed both modules.

Out of this number only 2352 learners managed to gain the 20% success rate. On May 11, 2018, there were 125000 learners registered coming not only from Ukraine but also from other countries of Europe (Chart 3).

CHART 3. GEOGRAPHY OF THE USERS OF THE ON-LINE COURSE "ONLINE COURSE FOR ELEMENTARY SCHOOL TEACHERS", JANUARY - FEBRUARY 2018



Source: Official Response to the Inquiry to the EdEra, March 2018

It is important to note, that after the first wave of fair passed, the course users started to actively exchange in the social networks with their experience of the implementation of new techniques in their classes and impressions from the course. Thus, according to the Counsellor of the minister of Education and Science of Ukraine Ivanna Kobernik, the teaching tool called “The Choice Circle” was presented within the Module 3 and after several days one of the course users Nelya Yarovikova has uploaded to one of the Facebook groups her own variant of the tool implementation. Within a single day it was reposted almost 2000 times and more than 500 people asked her to forward it to their e-mails. The author uploaded her modified tool to the educational platform for teachers “Naurok”, while some of the teachers offered to send their new variants to all who wants for the charge of 20-25 UAH (Kobernik 2018).

For the May 18, 2018, 19.00 p.m., there were 9300 successful course graduates who received the certificate of the course completion, generated by the EdEra platform. It means they have manage to answer 60% of the questions successfully and then passed the final exam consisting of 40 randomised questions, having had 2 attempts for the correct answer (Kobernik 2018). Those who did not manage to complete the course in time before the September 2018 will have additional time to do so.

Conclusion: Can the Independent On-line Education Platform be Efficient for the Adult Education?

The first phase of this comprehensive study was a thorough review of the on-line education development in the world through the MOOC means, as well as of the pressing need for collaboration within educational content development between the educational institutions and the private companies. Further the authors deepen the research problem into the field of offering educational services at the Ukrainian market by a selected and the major educational platform EdEra.

As a result of the presented research, we may positively state the existence of the successful cooperation experience between the governmental bodies and the independent on-line education platform. More of that, the EdEra case study allows to demonstrate the potential of collaboration between the formal and informal education systems, using non-state sources of financing for the benefits of the governmental programme. This unique experience may serve a success story example for other countries suffering from similar challenges in the field of education as Ukraine.

The flexibility of the independent company allows to deal with such challenges of the adult education as the low computer literacy, absence of skills in previous on-line courses use, administrative information distortion within the management system. The research shows that only a repetitive presentation of the framework, tools and methodology combined with wide social media use helped to maintain the course further operation which is a success now. The results of the paper generalize the best approaches which allowed the project team to succeed.

Thus, a conceptual framework of the successful on-line education via the sources of the independent platforms for the learners coming from the narrow professional field – adult teachers, outlines certain requirements towards the learning process, course content and the way it's presented;

- Broad promotion, clear guidelines at the platform itself and an information campaign through the governmental channels does not guarantee the correct understanding by the users, especially if the target audience comes from the computer and web-marginalised territories, and a strictly managed system;

- Bad management of the information dissemination process may become stressful both for a teacher as a learner and for the on-line course designers, only tight communication with the target audience and immediate reaction may improve the situation;

- The academic affiliation of the course users does not guarantee the academic integrity of them and thus constant monitoring of respective on-line tools for communication used by the course users should be present. Concrete and firm measure should be applied in cases when the academic integrity is violated.

Consequently, we can point out that the teachers-oriented online courses as one of the most advanced forms of e-learning can be an effective mechanism for the users qualification improvement. However,

intense involvement of the target audience into public discussion aimed at the course content adjustment to its needs will be an argument for its future success.

The further scientific work may lay in search of the modes of cooperation of the on-line course designers, consumers and clients who order them, as well as in further definition of the adults on-line education specifics.

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Consulted Websites

The Coursera Platform: <https://about.coursera.org/>

EdEra Facebook profile: <https://www.facebook.com/EdEraUa/posts/1719886708054829>

Abstracts keynote speakers

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Abstract: This presentation focuses on the ways in which future teachers perceive issues related to the use of open source tools and open source educational resources. The importance of this issue does not relate just to the techniques of creating, using and sharing open educational resources (OER) among future teachers, their change in knowledge and perception of the use of open source tools and open source educational resources, but it also deals with the issue of democratization of access to education, and the seeking and sharing of knowledge. The main postulate is that future teacher exposure to OER and structured learning about OER features contributes to overall knowledge of future teachers. Numerous research studies stress the question of change in future teacher OER understanding due to exposure, development, use or discussion about OER related issues (Hilton, 2016; Whyte, Schmid, van Hazebrouck Thompson, & Oberhofer, 2014). In the same time, it is necessary to recognize the concerns that OER place priority on learning and diminish the importance of teaching strategies (Knox, 2013) and take into account arguments that the simplistic definition of openness is largely irrelevant to the academic practices of teachers and learners, and that it is crucial to recognize ways in which individuals use infrastructures in pursuit of positive liberty (Oliver, 2015).

In this presentation, I will present the findings of the recent research study on change in knowledge and perceptions of the use of open source tools and open source educational resources among future teachers. The research study focus was on the future teachers' theoretical understanding of OER principles, and practical understanding of usage of OER tools, sites and materials. Based on the content analysis on the future teachers' online discussions, it was possible to conclude that change in knowledge did occur. Also, the online discussion participants' comments raised the important question of the role of open educational resources in decreasing inequalities concerning educational opportunities. Consequently, the issues of democratization of education and educational possibilities that increase with the technology and OER are discussed from the critical pedagogy scope.

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INTRODUCING COMPUTATIONAL THINKING AND PROGRAMMING IN COMPULSORY EDUCATION: PERSPECTIVES ON RECENT CURRICULUM REFORMS IN EUROPE

COMPUTATIONAL

THINKING AND PROGRAMMING IN

COMPULSORY EDUCATION:

PERSPECTIVES ON RECENT CURRICULUM

REFORMS IN EUROPE

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Abstract: In the past decade, Computational Thinking (CT) and related concepts (e.g. coding, programing, algorithmic thinking) have received increasing attention in the educational field. This has given rise to a large amount of academic and grey literature, and also numerous public and private implementation initiatives. Despite this widespread interest, successful CT integration in compulsory education still faces unresolved issues and challenges. This presentation provides a comprehensive overview of CT skills for schoolchildren, encompassing recent research findings and initiatives at grassroots and policy levels. It also offers a better understanding of the core concepts and attributes of CT and its potential for compulsory education. The presentation discusses the most significant CT developments for compulsory education in Europe and provides a comprehensive synthesis of evidence, including implications for policy and practice.

**TOWARDS LEARNER-CENTERED TOOLS
FOR VIDEO ENABLED INSTRUCTION**

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Abstract: The rise of web-based video as a primary instructional vehicle over the past decade is unquestionable. Unfortunately, many common platforms used to deliver video content to learners in MOOCs, continuing education experiences, and flipped classes have affordances that were initially designed around video consumption for entertainment purposes. It goes without saying that educators can easily recognize important distinctions between viewing videos with the specific intent to learn versus binge-watching cute animal videos on YouTube.

In this talk, I will explore lessons learned from our five-year, US National Science Foundation funded research project to rethink playback environments to better support learning from and teaching with video across a wide variety of educational settings. Our work seeks to apply a learner-centered, and evidence-driven approach to iteratively refine holistic educational environments. I will demonstrate a suite of tools we designed to support reflection and synthesis activities within videos for students, and tools to support the formative assessment strategies of instructors. I will contrast these affordances to the current state of commercial video platforms and learning analytics dashboards in order to emphasize opportunities for additional innovation. Lastly, I will share real-world adoption stories to help highlight some of the inherent tradeoffs and tensions in design of such tools.

Abstracts

**INELI BALKANS E – LEARNING – THE
SUCCESSFUL STORY ABOUT LIBRARY
ONLINE LEARNING PLATFORM**

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Key words: Library, INELI Balkans, Innovators, Networking, Online learning, Cooperation

Abstract: The International Network of Emerging Library (INELI – Balkans) brought together library communities from 11 countries to develop a sustainable network that encourage collaborative innovation, e/learning and experimentation with new ideas open mainly to public libraries. Employees from the 11 Balkan countries involved in the INELI-Balkans project were from: Albania, Bosnia & Herzegovina, Bulgaria, Croatia, FYR of Macedonia, Greece, Kosovo, Montenegro, Romania, Serbia, Slovenia. 2 years Extensive online training were focused on further developing the ability of emerging library Innovators to share knowledge, provide strategic planning, collaborate and develop Project Plans for new library services. Trainees had been guided by expert trainers and mentors from the library field and beyond, through the dedicated e-learning courses, the discussion e-forum, webinars, practical exercises and through interaction and twinning activities. Successful Project Plans for new services developed by trainees were received seed funding and administrative support for their pilot implementation. The pilot trainee Project phase had been monitored and evaluated and the results were documented and disseminated as ‘lessons learned’ and as a reference for future plans. INELI-Balkans set up a framework for continuous pursuit of partnerships and co-funding, working with the library community, training partners, technology and service providers, and, above all, local creatives.

So INELI-Balkans is envisaged as a unique platform that motivates and brings together new talents, grassroots movements and established organizations that use Balkan libraries to help reinvent and sustain their communities. This enduring Balkan library partnership could and support the openness of mind and human adaptability that are fundamental for designing solutions both for people and for social, cultural and economic growth.

**TERROR MANAGEMENT THEORY,
HISTORY TEACHING AND HISTORY
TEXTBOOK PRODUCTION**

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Key words: Textbook, education, history, openness

Abstract: This presentation draws from the theoretical premises of Terror Management Theory (TMT) and illustrates its applications in History textbooks curricula, design and production. Initially developed by Sheldon Solomon and Jeff Greenberg, from the University of Arizona and Tom Pyszczynski from the University of Colorado, and later expanded well beyond the disciplinary confines of social psychology, TMT maintains that the invocation of death and mortality salience enhances in-group solidarity and intensifies hostility against any Other portrayed to be an existentialist threat to the in-group. The authors summarize recent literature utilizing this theory in international History textbooks research and, utilizing unstructured interviews with pupils of mixed ethnic backgrounds of the sort targeted by ethno-nationalist historical narrative as an existentialist threat, attempt to draw conclusions with regards to what TMT and its use in history teaching and history textbooks production means in the modern world of globalization.

**AFFECTING STUDENTS BEHAVIOR WITH
PLAGIARISM DETECTION IN EVALUATION
PROCESS**

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Key words: plagiarism, detection, cheating, programming.

Abstract: One of the most common problem, with which we, as a teachers, have to deal with, is to avoid cheating. It has never been easier to pretend, that work of someone else, is mine. Practically it very often means just to overwrite identification information of the original author. And because of this, teachers unwittingly evaluate work of someone else than the one, which is signed as the author. Problem raises with the increasing number of students, where it is almost impossible to reveal the attempt for cheating. In this article, we will present the solution for plagiarism detection of the student's projects, which we use for several years of lecturing and managing courses related to programming at Department of computers and informatics at Technical university of Košice. We will describe our experiences with the tools and the influence on the student's behavior, when they know there is no plagiarism detection, when the detection was only announced but there was no plagiarism detection at all and finally, when the detection was announced and it became part of the evaluation.

<p>ETHNIC DIVISIONS, INTERNATIONAL RIVALRIES AND EUROPEAN POLITICS IN PUBLIC PERCEPTIONS OVER RELIGIOUS AND SCIENTIFIC EDUCATIONS: LESSONS FROM ALBANIA, KOSOVO AND MACEDONIA</p>	<p>RIDVAN PESHKOPIA, Independent researcher Albania</p> <p>KOSOVARE BLLACA Independent researcher Hungary</p> <p>BLENDI URUQI, ELONA PLLANA, ALEJNA AQIFI, LIRI DONJETA ELSHANI, GRESA SHEQIRI Independent researchers Kosovo</p>
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Key words: Open Education, religion education, ethnicity

Abstract: A new approach in fighting religious extremism holds that, trapped into a strict concept of religion-free public education, public schools in secular countries deprive students of knowledge about basic tenets of world's major religions, risking thus to leave room for radical teachings to fill the void. However, undertaking efforts to include courses that would introduce students with the fundaments of major religions could fire back, as publics in secular countries consider taboo any interference of religion topics in the public education curricula. The case of Albania, when in 2016 the government decided to conduct a pilot project and introduce religion education in some public schools exemplifies difficulties that governments might experience to explain to the public the benefits of such policy. Things might become even more complicated in multiethnic and multi-religious societies, where lack of trust in government overlaps with mistrust across ethnic and religious lines. We test the argument that people's support for the introduction of religion education is impacted by both domestic religion and ethnic divisions, their trust in the government and the source of the policy proposal. Moreover, we argue that attitudes toward the introduction of religion education correlate with people's attitudes toward their country's EU membership as well as trust in EU institutions. We conduct multilevel analysis through a series of ordered probit models based on public opinion survey data collected via a cellphone random digit dialing technique (RDD) in three southeast European countries, namely Albania, Kosovo and Macedonia in spring 2018. The ethnic and religious compositions of these three countries guarantee a nice variance for all our key independent variables, thus increasing our confidence in the findings

Partners

General Partner



General partner Central European Initiative The CEI is an intergovernmental forum promoting political, economic, cultural and scientific cooperation among its Member States. Its core mission is: Regional Cooperation for European Integration. In this context, the aim of the political cooperation is to supply the countries and their institutions with a flexible, pragmatic platform for regional cooperation, while focusing on their preparation to a future accession to the European Union (EU). In doing so, special attention is given to capacity building of the non-EU CEI Member States which, thanks to its ideal location, is pursued through know-how transfer and exchange of experience among those countries which are members of the EU and those which are not. The CEI is actively engaged in supporting projects in various areas of cooperation, also through the mobilisation of financial resources providing greater possibilities for studying, financing and executing national and international projects. Also main partner in 2016 and 2013. Main Partner Core to our mission is creating immersive and inclusive experiences that inspire lifelong learning, stimulating development of essential life skills and supporting educators in guiding and nurturing student passions. We empower students and educators to create and share in entirely new ways, to teach and learn through exploration, to adapt to individual learning needs, so they can make, design, invent and build with technology.

Main Partner



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Partners



AAEI Czech Republic

AAEI Czech Republic AAEI Czech Republic is the largest professional association of adult education with tradition since 1990, which goal is to promote interests and needs of adult education institutions, concentrate professional capacities for solution and development in this area, cooperate with state authorities and other subjects in preparation and implementation of legislative and other measures of adult education, organize events for professionals and the general public, publish publications and represent members and their activities with domestic and international associations. Partner since 2012. Navreme Boheme, s.r.o is a dynamic and innovative consulting company as well as research-driven SME. Dealing mainly with evaluations (eg impact assessment, cost-effectiveness and evaluations of program interventions financed from public funds), implementation and effective use of information communication technologies (ICT), e-learning and research and development (R& D), especially in the field of information technology, labor market and transfer of innovation. Partner since 2012. PRADEC Prague Development Center (PRADEC) is international company offering publishing services, various networking activities to people and institutions involved in variety of educational and science activities. Its mission is to develop a broad range of information sharing products and services in area of education, science, technology and innovations. PRADEC product lines cover producing research journals, publishing scientific works and 501 reports, organizing seminars, trainings and conferences, developing networking platforms targeted to the global audience. Partner since 2012.



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