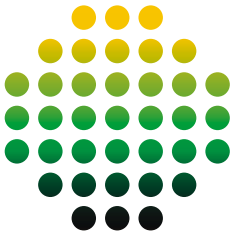

DisCo 2015

From Analog Education to Digital Education

10th Conference Reader

Jan Beseda and Zbyněk Machát (ed.)

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Dear readers,

we have already celebrated 10th anniversary of the DisCo conference this year. Since 1999, the year in which the first National Conference on Distance Education took place, 16 years have passed and we have advanced significantly. In the year 2010 the national conference was transformed into an international event and named the DisCo conference. Since the year 2010 DisCo conference has hosted speakers and participants from all around the world. From Canada to Australia, from Sweden to South Africa. In 2010, the conference was hosted by the University of West Bohemia in Pilsen. The venue of the conference was later moved to Prague for the city's easier accessibility. It was hosted by the Charles University, the oldest university in Central Europe. This year the conference was held in the premises of Paralelni Polis run by the Institute of Cryptoanarchy. DisCo conference took place from June 22nd to 24th, 2015 in Prague hosting more than 40 participants from 10 countries –Czech Republic, Slovakia, Hungary, Poland, Germany, Austria, Spain, Albania, New Zealand, Turkey.

Apart from traditional programme consisting of conference contributions, workshops (this year focused on using tablets and ePortfolios in education), digital badges and delicious catering, the conference participants had a chance to try paying for their coffee with bitcoins in the bitcoin-only espresso bar Bitcoin Coffee, the winner of the Best Cafe 2015. They could also learn how 3D printing works. As it was an anniversary year we had thought of the main theme of the conference in retrospect and called it From Analog Education to Digital Education. Three keynote speakers who had already contributed to the past years of the conference were selected. Mar Camacho from Universitat Rovirai Virgili in Tarragona in Spain, who spoke about 'Mobile Learning in Higher Education: Significant Transformations and Future Challenges'. Sigi Jakob Kühn, well known Mahara lecturer from Germany who devoted her keynote to ePortfolios and named it's Power to the Learner – how can digital technology help to learn?', and Wolfie Christl, an Austrian expert on privacy who informed the listeners about safety risks of computer data handling in his lecture called 'Privacy in the Age of Digital Tracking, Big Data & Internet of Things'. The lecture was followed by a panel discussion 'Data (learning) analysis vs. Privacy and Security' where Wolfie Christl and Daniela Kmentonyová from the Institute of Cryptoanarchy represented the dystopian views of the panellists and the data-utopian opinions were voiced by Lukáš Paleček from Webschools.r.o. and Jakub Štogr from NavremeBohemes.r.o. We could hear arguments of both sides and obviously there was no conclusion. The audience themselves were able to consider if there prevail positives of Learning Analytics use against privacy threats. We

assume that it is useful to exploit the potential of Learning Analytics in order to improve the educational process, but at the same time it is important to cautiously approach its possible threats. In these conference proceedings you will find selected contributions devoted to MOOCs, gamification, students, teachers, m-learning, and other themes. We believe the readers will enjoy these articles and will find in them a source of inspiration for their work.

Finally, we would like to take this opportunity to acknowledge those who support us.

We wish to thank our partners for their patronage. Our thanks go to AAEI, Association of Adult Education Institutions, Czech Republic, Institute of Crypthoanarchy, Navreme Boheme s.r.o, Prague Development Center, Veriod and media partner portals Open Education Europa, Edumenu and journals Andragogika, Aula, and Ikaros. Last but not least, we would like to thank all the members of the program and organization committees and volunteers. Without their help, the conference would not have taken place.

Jan Beseda and Zbyněk Machát

MOOC

DESIGN AND DEVELOPMENT OF A MEDIA MOOC FOCUSING ON COMPETENCE

MARI-CARMEN CALDEIRO-PEDREIRA

University of Huelva (Spain)
Faculty of Education

PAULA RENÉS-ARELLANO

Faculty of Education
University of Cantabria (Spain)

e-mail of corresponding authors: mariccaldeiro@yahoo.es; paula.renes@unican.es

Key words: Mooc, media competence, literacy, teachers, critical attitude.

Abstract: The research presents the design of a course Mooc composed and further based on the knowledge and tools developed over the past four years as part of the R + D + i: EDU 2010-21395-C 03.
The main theme revolves around the development of a media competence defined according to the dimensions of Ferrés (2007) and is aimed at teachers, as these constitute a fundamental pillar in today's society where a huge number of professional staff conform to the media ecosystem.
This article seeks to justify the importance of the MOOC courses and media competence as a form of critical and independent participation.

Introduction

The need for continuous training and learning highlight the shortcomings within the present focus of the interest of a group of university teachers interested in developing strategies applicable in the context of Learning Supported by Technology (APP). These are tools that have arisen as a result of the adoption of principles of the Open Educational Movement (Montoya and Aguilar, 2012). Within this context they share a common concern: to provide knowledge and materials to the teachers of non-university education to reach the level of media competence that allows them to understand and critically analyze the audiovisual content they receive.

In this sense, the open education becomes accessible and necessary to reach society and teachers of non-university education, although the beginnings of such teachings are based in 1938 with the creation of the International Council for Open Education, it was in 1969 when the United Kingdom created the first Open University. As Chiappe, Hine and Martinez-Silva (2015) pointed out, this movement joins the influence of free software in the late 70s that marked the current Open Educational Movement, together with the creation of repositories of open educational resources (REA) and the evolution of e-leaning, presenting results within the emergence of the MOOC (Massive Open Online Courses) as an open type of education that is essential within the scientific community (Martinez, Rodriguez and Garcia, 2014 Raposo, Martinez -Figueira and Sarmiento, 2015) and the quality and effectiveness has been supported by various groups and individuals and the creation of projects such as the ECO in

which various universities around the world participate to study and create courses which have enhanced the accessibility to open institutions network training (http://ecolearning.eu).

In this area in Spain we have platforms like Myriad offering many courses designed by universities like Oviedo, Cantabria and Zaragoza together with the UNED coordinate to offer different products tailored to emerging needs.

The first Mooc'S "Massive Open Online Course" dates back to 2008 but has had to wait three more years to assist in their development and hatching with the course of Artificial Intelligence (CS221) launched in 2011 by Sebastian Thrun of Stanford University . A year later, it will be when they become the main leaders of education (Daniel, 2012). The popularity and interest is explained from the time when some of the most prestigious universities in the United States welcomed the concept through initiatives such as EDX, Coursera or Udacity.

As we can demonstrate, increased education initiatives related to open education programs through the MOOC is constantly growing. Through this type of education which is based on the need to train people critically and actively before the media, omnipresent in everyday life, the MOOC course presented in this work arises, to promote the development of media competence to non-university teachers. Understanding that the empowerment is "the ability of an individual to interpret and analyze critical reflection of audiovisual images and messages and to express themselves with the minimum correction in the communicative field'. (Ferres, 2007: 10). According to the author he goes on to indicate "This competence is related to the knowledge of the media and the basic use of multimedia technologies needed to produce it."

The knowledge society also called for Baudrillard (1974) "society of the spectacle 'focuses its interest in the image, its power and its ability to flourish. Today`s playfulness is gaining ground dramatically because of the importance of various digital tools that are used to make spectacular information. Audiovisual contents have spread greatly in today's media company reaching societies that are sometimes ethically questionable.

In this context, values, counter values and stereotypes live in an unlimited and indiscriminate unfinished space where reigns the prevailing market value and loss of privacy education as necessity demands centered on shaping the personality of the subject which today urges learning to develop and build, acting through different technological resources. In this sense, learning is conceived as a

continuous process, adapted to the changes identified with a digital information and media literacy. This requires reinventing the school and ways of acquiring knowledge.

Following this line, the University of Huelva in coordination with Cantabria and in the framework of this project of R + D + i it is proposed to develop a Mooc entitled "Educating for new media: media competence for teachers' focusing on providing students with the shown knowledge and materials that allow you to design activities to implement the classroom and in authentic situations.

Concern for the development of media citizenship in 2013 explained by Gozálvez has been observed in R + D + i project on media competence. A study led by the Professor and Chairman of the Group Report, Ignacio Aguaded in which between 2010-2014 we have worked collaboratively with different researchers on the national scene (17 Spanish universities) and international (Portugal, Italy, Colombia, Ecuador and Peru between other countries). After performing diagnostic work in the field of media competence and scope of critical consciousness we have developed various materials which are adapted to be implemented in primary and secondary.

Objective

MOOC presented in the course is two-fold, training in media competence to non-university teachers and provide resources and materials in open training to be accessible to the entire group, with the aim of promoting education in open training to interaction with others and the participatory development of a democratic society.

The Mooc on media literacy for teachers has looked at a first instance and in general to provide students with the knowledge and show materials that allow you to design activities to implement in the classroom in authentic situations.

Content and structure of the course

Current social reality where multiple devices and screens predominate is not addressed specifically in educational legislation as can be seen from the review of the LOE, 2006 and LOMCE, 2013; therefore, it is appropriate to emphasize media literacy as a way of developing critical and participative attitude by the receiver of audiovisual content.To achieve these objectives the MOOC structured as shown in Table 1.

TABLE 1. STRUCTURE AND CONTENT OF MOOC "EDUCATING FOR NEW MEDIA: MEDIA COMPETENCE FOR TEACHERS"					
Week 1	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**
Presentation module	Module 1. The media competition in today's society	Module 2. The critical analysis and media production module	Module 3. The media as a teaching resource and curriculum	Module 4. The teacher as an effective pro-consumer.	This week is scheduled the completion of the final activity for the Module 4
Course description of the general contents and performing a test of perception.	Literacy, digital, audiovisual and media competence referring to the target audience: teacher's concepts are presented.	Contents related to the critical analysis of the information is proposed and the background needed is to make a constructive criticism of media messages.	An approach on setting means shown in different contexts and work addresses these as a teaching resource.	The skills of a teacher to consume and produce information and audiovisual resources to improve the teaching-learning process and to develop different strategies and educational proposals that can be used with students that are being described.	In addition to making the teaching proposal students must correct some from the group that are attending the system of "peer review"

Materials and activities

The materials that support the students of this Mooc are:

- Video presentation of the course. Four, one for each module where its nature is explained.

-An Initial perception questionnaire composed of 16 items, 15 of them closed questions and one last reference to the knowledge and skills that a teacher must master to improve the level of media literacy

- Materials in pdf theoretically set of a group of guidelines that students can download on the Web where you see the course.

- Other resource on the network, videos and materials developed by the members of the research group R + D + i for this course is attached and are accessible mostly on You Tube.

- Forums, following the philosophy of participation in the course with regular intervention in different forums that will be energized by professionals from different countries is also proposed. The design of this tool aims, among other objectives, to contribute to the development and resolution of any doubts that arise from the students.

The activities to develop are mandatory. At the end of each module offered, at the discretion of the teacher in charge of it, one or more activities that reflect the content are explained. As a user within this field and after the course it is necessary to make a general exercises which include, in some way, the knowledge acquired cumulatively by students that has been continuously following the Mooc format.

The structure and design of activities allows, on the one hand that students acquire the basic knowledge of media competence and secondly to be able to explain and transmit to them the final activity since, according to Pyramid Blade, who could explain over time by 95%.

Conclusion

MOOC implementation described aims to empower the students and provide them with the tools that allow them to develop media competence and critical attitude. It has emerged as a phenomenon that removes and updates the traditional college education method, it is accessible by knowledge and education from other groups, being a means of facilitating technology for the same purpose.

As mentioned in the introduction, various platforms and initiatives are being developed in our country through renowned institutions. However, a major effort by the authorities is necessary to support through human resources and materials these initiatives are promoted by universities they emerge from the effort of teachers who see education as a vital need in the training of the people and therefore to be accessible and open, without this effort it could not be possible.

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SEDUO.CZ: MOOC PLATFORM FOR BRIDGING THE SKILLS GAPS

FRANTIŠEK DALECKÝ

e-mail: frantisek.dalecky@gmail.com

Key words: MOOC, skills gaps, work-force education, czech online education

Abstract The idea of using MOOCs for solving the biggest problems of education as an access and education divide, remains with us from their beginning. Whether the ambition of MOOCs was overestimated or not, we can still come up with solutions, which will use the technology to improve the education and solve some of the most problematic issues. Skill gaps are definitely one of the most significant problems. In Europe, young people have trouble to find a decent job, on the other side, the employers can't find qualified labour. There is a gap between the needs of the job market and the learning outcomes, which formal education institutions provide for its students. In Czech Republic, this state of affairs also takes place.

In Summer 2015, brand new MOOC platform will emerge in EU. It will be a bridge between the spheres of employers, higher education providers and czech online learners. This article presents the platform and its general idea, mission, but also features, which will demonstrate the solution of czech MOOCs. It also covers the topic of skills gaps, workplace skills, 21st century skills and possibilities of their providing by teaching online. In the end, the article is proposing a new way of using MOOCs on national level and provides the model for developing and implementing MOOC platform and its courses for bridging the skills gaps.

Introduction: The problem

The problem of skills gaps is one of the most visible in current Europe, but also in USA. It presents a debate about the needs of the job market and learning outcomes delivered by the higher education sector. Even thought the topic is discussed pretty much, practical solutions are still missing. The current state of affairs can be defined as a vacuum and lack of sufficient cooperation between the sectors of government, higher education providers and employers. In the centre of all that are the students and graduates, who, despite having a degree and years of academic accomplishments, do not qualify themselves for a desired job. The question of youth unemployment is even more actually for example in Spain, where the unemployment of youth reaches 50%.

In Czech Republic, college graduates do not face such a problematic perspective – their unemployment is below average and the job market is still open to the new workforce. Despite that, employers are not satisfied with the skills graduates possess and they are active in demanding the change. From the graduate perspective, it is necessary to gain new skills and adapt to the demands of workforce and start some real learning right after the graduation. The most profound gap is in the area of workplace skills and 21st century skills. Using the model of Partnership for 21st century skills (Partnerships for 21st century skills, 2015), what we have in mind are areas like Learning and Innovation skills, Information, Media and Technology skills and Life and Career skills. Those are the primary areas the new MOOC platform will focus on and we argue this line of skill development is the most necessary.

The solution

The Seduo.cz platform was created after a long process of product discovery and research. It was inspired by other MOOC platforms like Coursera, EdX and Udacity, but also FutureLearn and iversity. Some of the ideas we gained thanks to other online education ventures like Skillshare and Lynda. Our general idea is to connect the areas of learning and job search or job placement. The owner of this platform

is LMC, the local leader on online job and education market and the owner of jobs.cz, the largest career portal in the country. The mission of this platform is to provide free and partially paid, but widely available online education to the mass consumer market. Courses of Seduo will be competency based and focused on the core workplace and 21st century skills. For example, the opening offer of courses will present learning in areas such as information and ICT literacy, presentation skills, design or networking. Our long term vision is to cover a whole spectrum of workplace skills and provide an affordable learning opportunity for a vast majority of Czech population. That gets us to the idea of sustainability. As we know from the development abroad, the business of MOOCs is not the easy one. In the article, *How does Coursera makes money?* EdSurge explores its business model and other ways MOOC platform can monetize its free education (Shah, 2014). The most aspiring model for monetization is the creation of paid Specializations – sequences of courses with special certification. From our perspective, we see many ways of possible monetization and sustainability. In this stage of development, we focus on product launch and the strategy is to find the right business model later. What we think of, currently, is a mix of different attitudes, using partially the idea of specializations, offering just paid courses and other options like recruiting and premium services connected to learning. When we speak of platform, we have usually in mind a set of features. In case of Seduo.cz, the minimal viable product will not present anything unique, what the MOOC sphere hasn't seen before. Our courses will be based on short video-lectures, from the best practices ranging from 3-6 minutes (Guo, Kim, Rubin 2014). There will be a possibility of text lectures and to the both video and text lecture, admin can add some additional study materials. The platform also uses some features of constructivism and connectivism, mostly discussion forums, which are available under every piece of content in the course. The platform also enables testing in form of multiple choice and true or false questions. In the end of the course, there is usually a test and after its successful completion, the learner is eligible to receive a certificate of completion. Those features are part of a first version of the product and our plan in future is to develop a highly capable MOOC platform, providing other features, like analytics and smarter features for driving student engagement.

The new model

It is a long process to go from an idea to launching the MOOC platform. We are currently (May 2015) in the last stage before the launch and we are learning many valuable lessons. First of all, the key lesson learnt so far is in the area of process needed to establishing a platform and its development. This model rises all just from the unique experience of our team, but we believe it is generally applicable in other countries of Europe. The Model of MOOC platform development has four stages:

1. Exploring the gaps

In each country there will be different situation on the job and education market – different gaps and necessary skills and topics to learn. The first step is to explore the gaps, to identify the topics and areas of learning needs and creating a foundation for course development.

2. Stakeholder analysis and partnerships formation

On national level, there are many players involved in the cooperation of job and education spheres. In EU countries, there might be a difference in their importance and level of influence. In Czech Republic for example, the Czech ministry of education is not currently an important partner, as the area of online education does not present as an important topic to solve. The most promising way for us in Czech Republic is currently to form partnerships with universities and commercial sector – these partners will help us with content production.

3. Creation of platform and pilot online courses

From the technological perspective, there is the need of LMS system and user interface, which can be built relatively easily or adopted and customized using Open EdX – open sourced solution made by EdX. Because the creation of the courses is for most of the partners a new experience, the key is to start with pilot courses and then continue with bigger goals in course production.

4. Further development of platform and online education ecosystem in the country

The platform has to continue to grow and so does the online education ecosystem. In most countries, there is a huge need for evangelization, creating awareness and setting the agenda of online education as an important topic. That is why our goal in Czech Republic is to foster a national debate about this topic and why we want to create an informational campaign, informing citizens about the unique learning opportunity of MOOCs.

This model of MOOC platform will be definitely further reviewed, but so far it is used successfully for our purposes. Even though the MOOC innovation in Czech Republic comes from the commercial sphere, we argue that the role of the government and other stakeholders is to foster the development or start it by their own. As the practice shows, some governments partially applied this idea and are building MOOC platforms for bridging the skills gaps in their countries – Saudi Arabia and Jordan for example, having their own platforms build on Open EdX (Curley, 2013). The output from this is that governments in Europe can create relatively cheap and effective solutions for educating the workforce. Former EU initiatives on the MOOCs do not currently show results worth satisfaction, but the examples for future development are hopefully waiting to be adopted.

Conclusion: A new way of using MOOCs

The article stated that the skills gaps are one of the most challenging problems in education sphere today. The gap between the needs of job market and the practice of institutions of higher education is wide

and in many countries, it is a one of the main reason of youth unemployment. In Czech Republic, the new MOOC platform will emerge in summer 2015 and its main objective is to bridge the gap and provide learners with necessary workplace and 21st century skills. Within the creation of Seduo, new model of platform development was created and as was stated, it might be an inspiration for European countries to adopt this kind of practice in their own online education initiatives. Online education and MOOCs present the most exciting innovation the digital world brought to the education so far. From the hype of 2012, time of disillusion of 2013 and 2014 there is a chance that 2015 and years to come will be the time of productive use of the technology and its rising impact on human lives. The first and in the same time one of the most challenging problems to solve for MOOCs are the skills gaps and education to employment. The good news is that the initiative has already started.

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GAMIFICATION

BADGING IN LANGUAGE LEARNING: A STEP BEYOND GAMIFICATION

PAVEL BREBERA
LINDA POSPÍŠILOVÁ
Faculty of Arts
University of Pardubice,Czech Republic

e-mails: pavel.brebera@upce.cz; linda.pospisilova@upce.cz

Key words: digital badges, portfolio assessment, language learning, gamification, LMS Moodle

Abstract: The aim of the paper is to analyse the potential of digital badges in the area of language learning in the field of formal university education and their potential extension towards other meaningful learning contexts. With reference to their previous publications, the authors deal with the following theoretical aspects of the topic: the role of digital badges within the so called authentic assessment by means of portfolio, the potential of digital badges in the area of establishing meaningful links between formal, non-formal and informal learning, and the redefinition of the conceptual framework of "badging" in the Czech educational context. In their paper, the authors therefore formulate an urgent call for an extension of the scope of "badging" in formal education beyond the concept of gamification, i.e. towards the use of badges in broader contexts. As an empirical evidence for this claim, the authors present the outcomes of a small-scale investigation into the students' subjective perceptions of "badging" in LMS Moodle carried out from the perspective of the influential Bartle's typology of players, together with the descriptive data related to a large-scale use of digital badges in the language courses at the University of Pardubice during the previous 2 years.

Introduction

An ongoing integration of the use of ICT into various fields of education generates many expectations related to the potential of particular didactical means (both in terms of the equipment as well as the methods) which have been recently emerging in various educational contexts. One of the specific areas which have been massively discussed with reference to current trends in eLearning is the concept of digital badges, which has been demonstrating a huge development especially due to the efforts of the representatives of Mozilla community carried out after the launch of the Open Badges project in 2011 (Surman, 2011). Since then, numerous attempts to exploit the potential of digital badges in the area of education have been experienced and analysed in various educational contexts - for American experience see e.g. Ahn et al., 2014; in European context some very valuable insights with references to LMS Moodle are provided by Gavin, 2013b; very inspiring efforts coming from German environment are presented by Buchem, 2015.

In this paper, we aim to add our small contribution to the global debate on the potential and limitations of the use of digital badges for educational purposes and therefore, we intend (in line with our previous publications - Brebera, Pospíšilová 2014a, 2014b) to offer our specific perspective represented by "the voice" of the foreign language education in the Czech university setting. Being aware of some potential dangers of over-spontaneous and unmethodical use of new IT tools in the area of formal language education which can, according to Gonzáles and Ortega (2014: 3) become "nothing more than entertainment unless their design, use, and evaluation are guided by viable educational and language development rationale", the theoretical justification of the use of digital badges in language learning was formulated with reference to the concept of the so called authentic assessment in terms of portfolio and its functions, namely its diagnostic function, i.e. focus on the situation at this moment; self-reviewing function, i.e. focus on past achievements; and planning function, i.e. focus on formulation of future

objectives (Brebera, Pospíšilová 2014a, 2014b with references to Píšová 2007). In this way, a desirable solid basis for the use of badges specifically in the area of foreign language education was established, both at the level of increasing learner motivation as well as providing a powerful assessment tool(for more about the relationship between motivation and assessment in connection to the use of badges in education see e.g. Abramovich et al. 2013).However, from a broader educational perspective, the inspiration for the use of digital badges in our context arises from some more general areas, which are presented in the following overview.

Broader perspectives on the use of digital badges: sources of inspiration

a. Tradition of alternative pedagogy

A search for the most suitable theoretical perspective for introducing the concept of digital badges determining its systematic use across the area of foreign language education in university setting was guided by the curricular philosophy of the so called progressivism, including both the category of personal progressivism focusing on reflecting the specific needs and interests of the students and the so called social progressivism aimed at preparing the student for the life in democratic society (according to Pasch et al., 1998: 34). Accordingly, the inspiration for the use of digital badges for both motivational and certification purposes (i.e. both the partial badges informing the student about the current progress in his learning throughout the course as well as the final formal university badge providing the student with the credential of mastery of the specific content/development of specific skills at a certain level) was found in the tradition of the pedagogy of the so called Dalton plan (developed by Helen Parkhurst in 1922), which represents a specific pedagogical alternative arising from the American philosophy of pragmatism. The main features of the Dalton plan (especially its aspects of being an open system, its flexibility, activity, differentiation, specific teaching style, efficiency - see for example Rýdl 1998: 27-33) as well as some of the specific tools used in Dalton schools (special boards for planning and for achievement, various ways of visualising and displaying students' progress, various options for structuring the assignments and providing feedback on them – for more, see e.g. Wenke, Röhner 2000; Röhner, Wenke, 2003)provided the necessary background for our use of badges as the organisational principle of the language courses in LMS Moodle (for more about the content of these courses see Brebera, Pospíšilová 2014a, 2014b).

b. Current trends in use of badges in the field of education

The above mentioned aspects of openness definitely transcend the area of pedagogical traditions of the last century as they form a very powerful incentive also for the development of those current educational trends which draw on the potential of digital badges. The highest degree of development of this particular

issue can be observed in American educational context, especially due to the richest experience with the use of digital badges both for motivational and for certification purposes and the related analyses of not only their potential but also limitations. A very inspiring overview of some "potential questions and tensions at the intersection of open systems and badges" was recently provided by Ahn et al. (2014: 8) whose categorisation of badges as motivators, pedagogical tools and credentials is complemented by pointing out some dilemmas and contradictions related to the aspects of open production (what it may mean if anyone can create badges), open access (what it may mean if badges are widely accessible and visible) and open appropriation (what it may mean if badges are open to diverse interpretation by different stakeholders). In future, similar incentives will have to be thoroughly re-considered since the concept of badges as micro-credentials "at granular level" (i.e. for specific skills or pieces of knowledge – see e.g. Swanson 2014, p.4) is becoming very attractive for designing various scenarios of certifying skills and knowledge in the future (ibid).

c. Gamification within formal and informal learning

Another area demonstrating an immense volume of openness in terms of potential use of badges in education is the so called gamification, generally considered as "the application of game elements to non-game contexts" (Technology Advice 2014). Focusing on either cognitive or behaviouristic aspects of pure game-playing certainly demonstrates a huge potential for creating various typologies of game-players, such as for example the influential categorisation which was carried out by Bartle (1996), which is frequently quoted also in relation to gamification in non-game contexts. From our perspective, gamification represents a very influential cross-curricular phenomenon entering all three relevant domains of learning, namely "institutionalised formal learning, non-formal learning occurring in formal learning environments but not formally recognised (e.g. workshops, interest based courses, conferences) and informal learning of rather incidental or random nature" (Brebera, Hloušková 2012: 275). Therefore, the acceptance of badges to the field of formal education is often accompanied by a certain degree of disregard in pedagogical communities, mainly due to their close links to the areas outside the domain of formal learning, as they are often perceived as a mere gamification tool (such as within Gavin's Moodle Gamification Toolkit, 2013a, etc.) with a limited impact. From this perspective, a clearer distinction between the concepts of game and gamification (presented for example by Gavalcová 2014: 83-85) might strengthen the position of digital badges among other didactical means available in current teaching/learning contexts.

The omnipresent nature of learning, the variety of available learning contexts and also the openness related to a potential use of badges in various fields of education with various purposes represent the re-defined framework of "badging" as a continual and meaningful process, extending its scope beyond the

stereotype commonly formulated in terms of "badges equal gamification" towards the concept of "badging" forming an integral part of education.

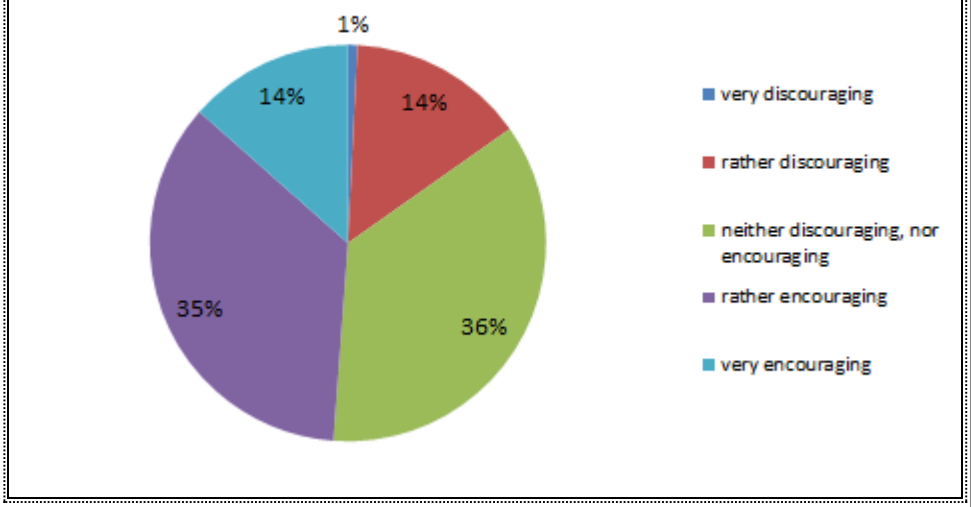
Empirical research

In our empirical investigation, we focused onthe areas determined by three research questions. The charts related to the following interpretation of empirical data can be found in the Appendices at the end of this paper.

1. What were the students' perceptions of digital badges used in English language courses during the first and the second pilot year (2013-14 and 2014-15)?

   During the whole period of 2 pilot years, 512 responses were collected in the form of feedback on the particular sets of digital badges used in the language courses taught at the University of Pardubice at the Faculty of Economics and Administration, Transport Faculty and Faculty of Chemical Technology. The students who participated in the two-semester courses were therefore asked twice. As it can be seen from Chart 1, the overall summary demonstrates mostly positive acceptance of digital badges in our university context since only 15% of the respondents demonstrated disagreement with the use of digital badges (mostly "slight" disagreement), while 49% expressed their positive attitudes towards the use of badges in their language courses.

Chart 1. Summary of students'perceptions (2013-2015)



Based on the comparison of the data from both pilot years (Charts 2 and 3), a visible change can be observed in terms of the increasing number of positive perceptions of digital badges (57% of either slightly or strongly positive perceptions in the second year compared to 41% in the first year of the

badge implementation project) and the decrease in the number of negative ones (represented by their reduction by 8%) as well as the drop in the number of indifferent users (from 40% to 32%).

Chart 2. Students'perceptions of digital badges during the pilot year 1 (2013-14)

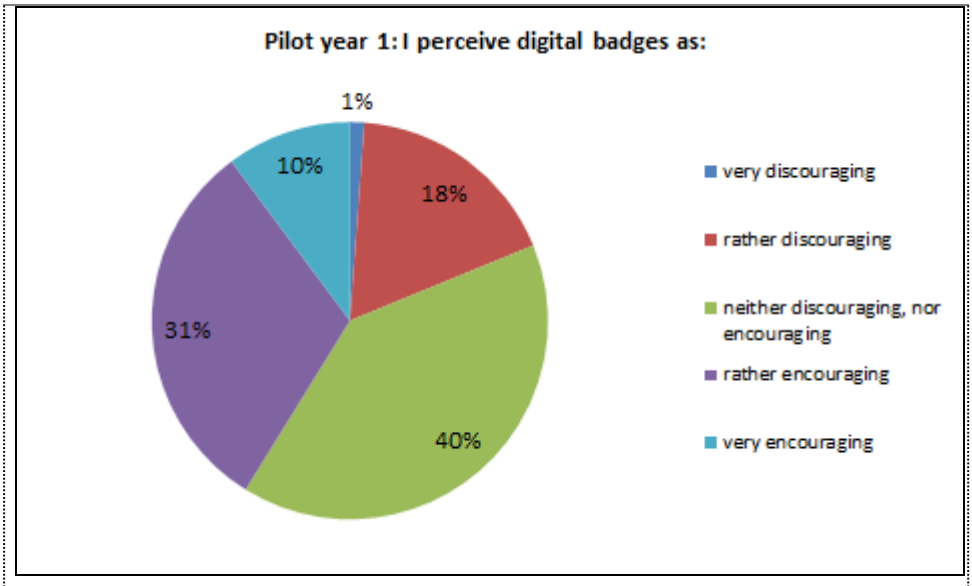
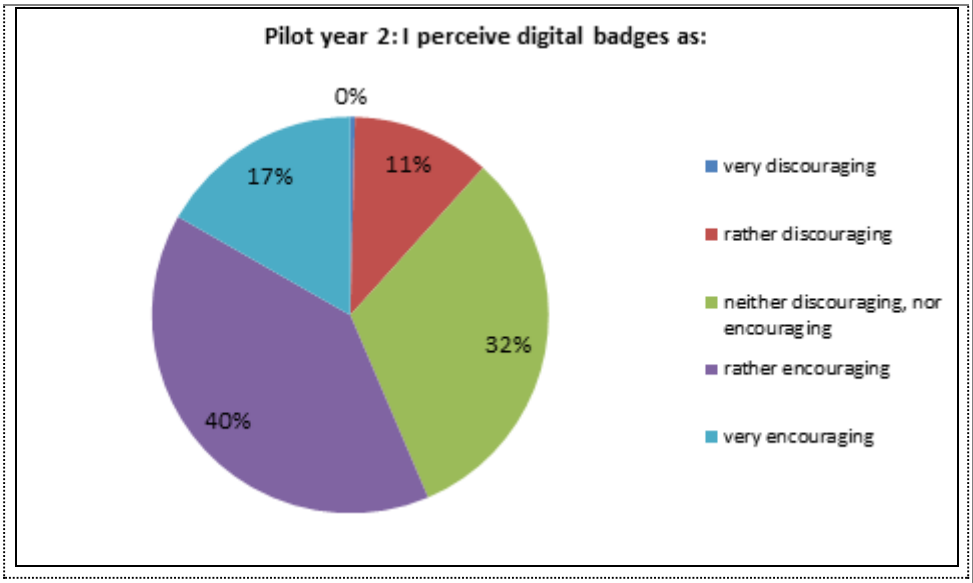


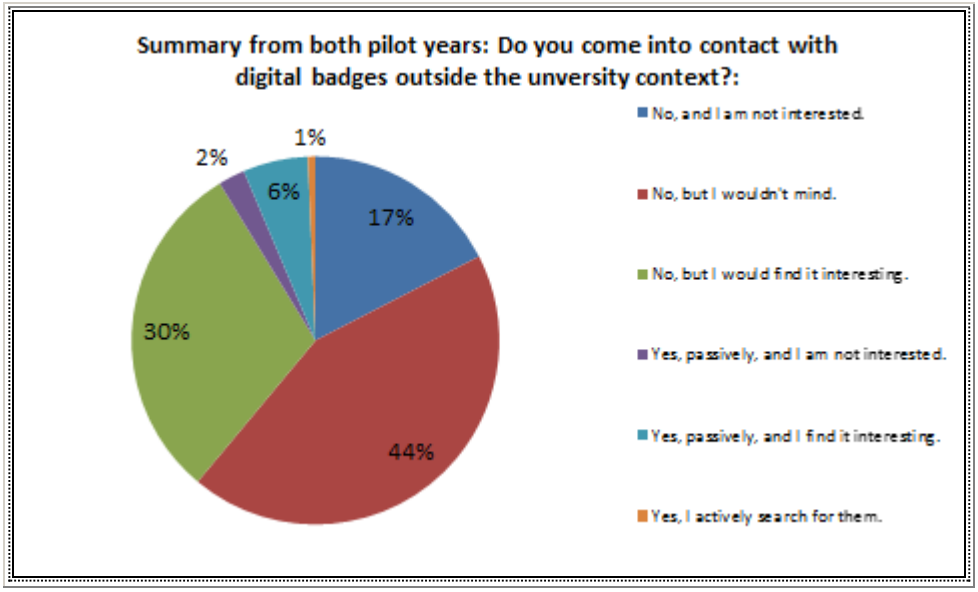
Chart 3. Students'perceptions of digital badges during the pilot year 2 (2014-15)



2. Are there any tendencies in terms of the students' experience with the digital badges in broader context, i.e. outside the university setting, in the first and the second pilot year?

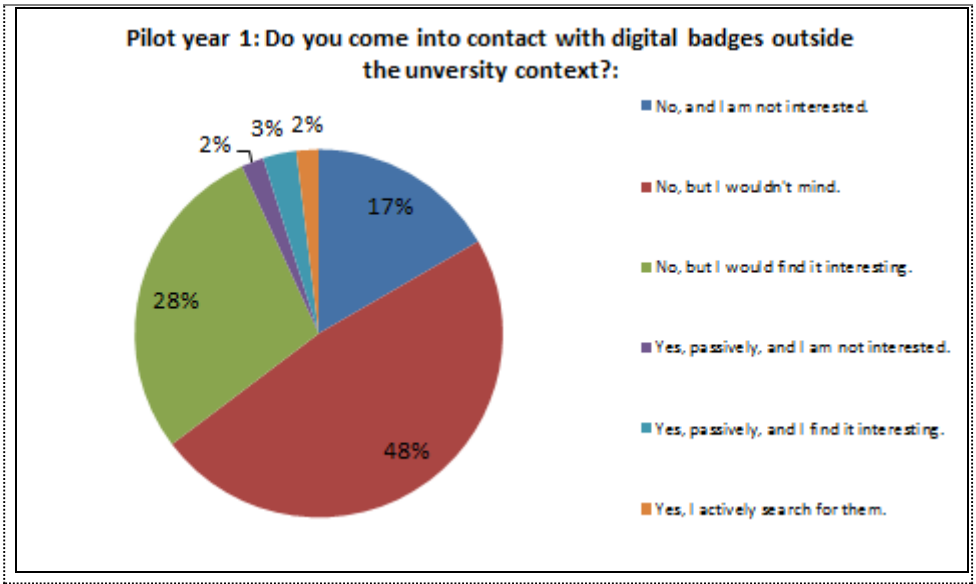
   Unlike the previous question about the perception of badges in relation to each specific Moodle course, the investigation of contextual factors related to badges in terms of the students' previous experience outside the university context was not dependant on the particular courses and therefore, it was asked only once to the participants of the courses, i.e. 298 responses were collected.

Chart 4. Summary of students'broader experience with digital badges (2014-15)



The data show that the expected tendency in terms of a growing students' exposure to the phenomenon of digital badges outside the university setting did not take place. The differences between the previous experience with digital badges in the first and the second pilot years are very small (7% in the first year compared to 10% in the second year) and due to these low numbers, also the related expected impact of the "badges from outside" seems to be negligible. However, the "unexperienced" group has been constantly demonstrating a huge potential in terms of the future use of digital badges in contexts outside the university setting (in the first year, 76% of this group expressed either slightly or strongly positive perceptions, and in the second year, this phenomenon concerned also 72% respondents).

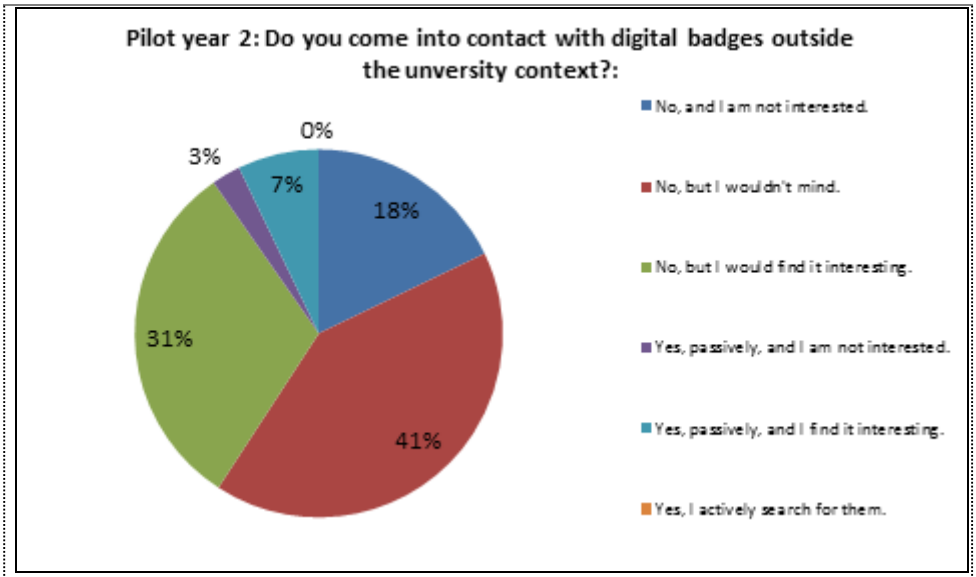
Chart 5. Students' broader experience with digital badges (Pilot year 1: 2013-14)



3. What are the specific patterns of students' self-perception of their own behaviour in Moodle courses with the use of digital badges in terms of frequently quoted Bartle's typology of players?

During the summer semester of the year 2014-15 (March-May 2015), the responses of 159 participants of the courses in Moodle were collected by means of a short questionnaire, which consisted of 8 questions. All four questions were formulated with the aim of choosing the particular behavioural patterns of the specific Bartle's category (achiever, explorer, socialiser, killer), two of these questions focusing on Moodle and two of them on digital badges; each question in both categories of Moodle and digital badges representing either the dimension of "current view" and "perspective view". The key concepts in the questions were carefully considered with reference to the students' framework of experience (i.e. achiever - the aspects of progress, explorer – the aspects of interest in using and exploring of both systems that the students are currently familiar with, i.e. Moodle and STAG (Study Agenda), or the interest in additional aspects of badges, such as graphics; socialiser – the aspect of appreciation of other participants' presence in Moodle; killer – the aspects of competing with other participants). The respondents were allowed to choose more options as the behavioural pattern would not supposedly exist in its pure form.

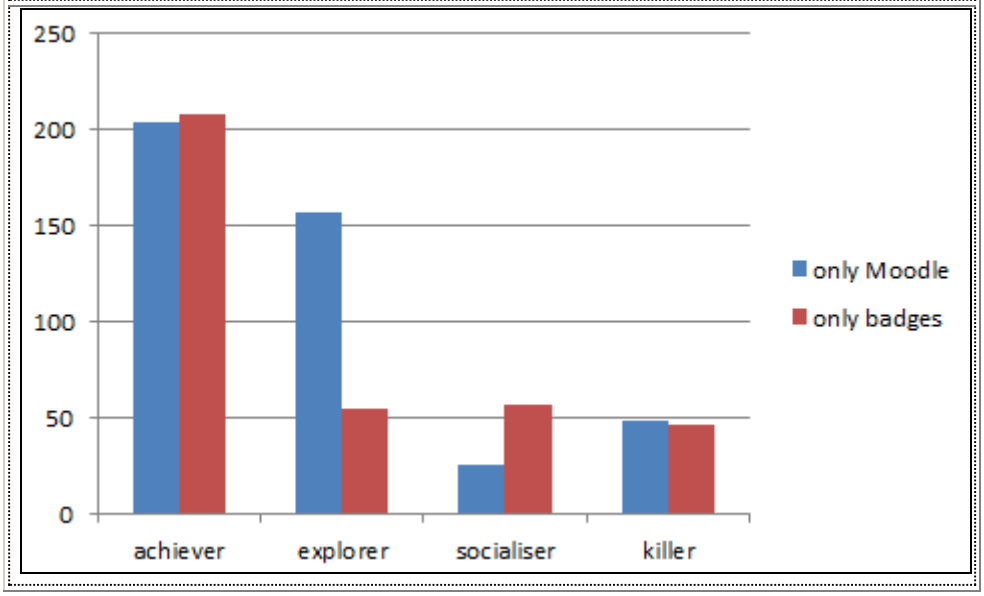
Chart 6. Students'broader experience with digital badges (Pilot year 2: 2014-15)



The overall summary (Chart 7) confirmed that the primary theoretical perspective of the use of badges in Moodle in accordance with the curricular philosophy of progressivism was perceived as dominant also by the majority of students who can see the highest value in the concept of progress, both provided by Moodle and measured/identified by badges. Besides, the comparison of overall summaries of responses in the category "achiever" for Moodle as well as for digital badges does not manifest big differences (204 identifications with this category in two questions asked about Moodle and 208 identifications with this category in two questions asked about badges). The comparable numbers of self-identifications related both to Moodle and digital badges (though at a much lower level) can be seen also in the category of killers (49 identifications with this category in two questions asked about Moodle and 47 identifications

with this category in two questions asked about badges). On the other hand, the number of respondents who perceived themselves as "explorers" with reference to Moodle (157 responses commenting on the favourable broad scope of possibilities in Moodle or expressing the interest of exploring links between Moodle and STAG) is much higher than the number of "explorers" in terms of digital badges (only 55 of responses agreeing that digital badges certify that "I am good with Moodle" or expressing the interest in learning how to create badges by themselves).Similar variability, though with an opposite tendency, can be observed in case of self-perceptions in the category of "socialiser", demonstrating larger intensity in the area of digital badges (referring to other holders of the same badge and expressing the wish to use social networks for displaying the badges – 57 responses) compared to a small number of socialising-oriented comments related to Moodle environment (representing the awareness of co-existence with other people in Moodle – 26 responses).

Chart 7. Bartle's categories – summary of responses related either to Moodle or to badges



The following step of the analysis of the collected self-perceptions is to be carried out at an individual level of the particular participants in the courses, i.e. focusing on typical combinations of the responses representing Bartle's categories in the dimensions "Moodle" and "digital badges", and in the dimensions "current" and "perspective", together with the relationship between the type of attitude towards digital badges (ranging from "very discouraging" towards "very encouraging"); this analysis is, however, beyond the scope of this article.

Conclusion

If we look at the above presented summary of empirical data from the perspective of the previously mentioned theoretical considerations we may conclude that the field of gamification certainly provides some very useful and powerful stimuli which are capable of triggering the "digital badge projects" in various educational settings. The categories of Bartle's typology seem to provide a very inspiring way of

structuring some possible uses of digital badges in the courses in LMS Moodle as they address the relevant aspects of measuring progress, stimulating the curiousness, providing the opportunities for online socialisation as well developing the group dynamics in online environment. However, we assume that a long-term effectiveness of the methodologies related to the use of digital badges could be sustainable only if a clear curricular concept is determined beforehand. Therefore, the use of digital badges representing a desired step beyond the concept of gamification is in our context justifiable and viable (according to the empirical evidence) mainly due to its sound basis in the philosophy of progressivism.

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COLLABORATIVE LEARNING IN PEERWISE WEB 2.0 TECHNOLOGY

JANA JACKOVÁ

Faculty of Natural Sciences
The Matej Bel University, Slovakia

PAUL DENNY

Department of Computer Science
The University of Auckland, New Zealand

e-mails: jana.jackova@umb.sk, paul@cs.auckland.ac.nz

Key words: Contributing student learning, PeerWise, Gamification, Achievement badges, Computer science education.

Abstract: PeerWise is a web-based system developed at the University of Auckland which supports Contributing Student Learning. Contributing S tudent Pedagogy means a pedagogy that encourages students to contribute to the learning of others and to value the contributions of others. PeerWise is typically used for collaborative learning of students through multiple-choice questions created and discussed by them. Inspired by the high level of engagement and enjoyment exhibited by those playing video games, PeerWise includes some simple game-like elements.
Developing and answering questions and providing feedback on them through the PeerWise system can be involved in almost all types of higher education standard and distance courses. Since 2013/2014 academic year we have been using PeerWise in six computer science courses at the Matej Bel University. We used it as part of students' required coursework for developing of higher order cognitive skills, motivating student learning and as a presentation tool. In this paper we describe our preliminary results and findings from our experience. Peerwise was used by 95% of students in our 2013/2014 pilot use in two courses; 79% of final questionnaire participants enjoyed creating questions and learning from other PeerWise users and 88% of final questionnaire participants found the activity with PeerWise useful. We found out that creating student-developed multiple-choice questions repository is a meaningful activity that can be used to increase students' interest in various topics covering the area of their course learning material.

Introduction

Multiple-choice question (MCQ) banks are useful sources of various tasks mostly used by teachers in the process of preparing exam tasks. Question banks that are created by students have a potential to enhance their engagement in a course learning material because "the activity of writing a question requires a student to think carefully about a topic in the course and how it relates to the desired learning outcomes. Creating distractors requires a student to consider possible misconceptions. The act of writing an explanation requires studens to express their understanding of a concept in their own words, deepening their own knowledge and enhancing their written communication skills" (Denny, Luxton-Reilly and Hamer, 2008: 69).

PeerWise is a web-based system that is typically used for collaborative learning of students – they create a repository of MCQs and discuss them (Denny, Luxton-Reilly and Hamer, 2008, 69). It is freely accessible on website http://peerwise.cs.auckland.ac.nz and more „than 1000 universities, schools and technical institutes from around the world are using" it (PeerWise, 2015).

Though there is a lot of evidence that PeerWise "encourages the development of higher order cognitive skills and enhances student learning" (Denny, Luxton-Reilly and Hamer, 2008, 69) we decided to use PeerWise as a motivation and presentation tool because it includes some simple game-like elements. We describe this feature of Peerwise in chapter 1.

We have been using PeerWise in some computer science courses of Applied Informatics programme at Matej Bel University since the academic year 2013/14. Because this is a pilot use of PeerWise at this university we report some preliminary results in chapter 2.

1. PeerWise and Affective Domain

As we mentioned in the introduction there is a lot of evidence that PeerWise works in cognitive domain. Inspired by the high level of engagement and enjoyment exhibited by those playing video games (Schoenau-Fog, 2011), PeerWise includes some simple game-like elements. In fact, the use of such elements is becoming more and more common within a wide range of non-game applications, as a technique for positively impacting user participation and engagement. Typical elements being employed across of a variety of domains and applications include scoring or points systems to track user progress (Farzan et al., 2008), leaderboards for showcasing the most active users (Fitz-Walter et al., 2012; Petkov et al., 2011), and achievement systems for rewarding users for making certain types of contributions (Montola et al., 2009). The umbrella term "gamification" was coined to describe this trend and is defined as the "use of game design elements in non-game contexts" (Deterding et al., 2011).

1.1 . Points and Badges

PeerWise includes a points-scoring system, a set of leaderboard tables, and a virtual achievement system in which students can earn "badges". There are two different scores that PeerWise maintains for each student. The first is their "reputation score" which increases when other students indicate that a particular student's contributions have been valuable. In other words, students with high reputation scores tend to be those that have made the greatest number of useful contributions to the repository. The second is the "answer score" which increases when a student submits a correct answer, and decreases when an incorrect answer is submitted. The leaderboards showcase the most active students in the course with respect to their reputation and answer scores along with a host of other participation metrics. This enables students to compare their performance in the course with that of the most active students.

The virtual achievement system consists of a set of 25 different badges which are awarded when students meet certain requirements (see Table 1). The two key activities within PeerWise are authoring questions and answering questions, and more than half of the badges defined target these two activities. Students can earn badges for answering a given number of questions correctly (e.g. the "Scholar badge" for answering 10 questions correctly), or for answering a certain number of questions correctly in a row (e.g. the "Einstein badge" for answering 20 questions correctly in a row). Students should be encouraged to test their knowledge frequently as the benefits, particularly with respect to long-term retention, are well known (Roediger and Karpicke, 2006). Several badges were therefore defined to reward students for returning at regular intervals to practice answering questions and to review and reinforce what they have learned (e.g. the "Commitment badge" for answering at least 10 questions correctly on each of 5

consecutive days, or the "Legend badge" for answering at least one question correctly on 31 different days).

TABLE 1. STUDENT BADGES IN PEERWISE SYSTEM

Basic	Standard	Elite
A = "Question author"	I = "Helper"	Q = "Good question author"
B = "Question answerer"	J = "Popular question author"	R = "Super scholar"
C = "Star-crossed"	K = "Discussed question author"	S = "Insight"
D = "Comment"	L = "Commentator"	T = "Conversation"
E = "Author-reply"	M = "Critique"	U = "Genius"
F = "Follower"	N = "Rater"	V = "Leader"
G = "Verifier"	O = "Scholar"	W = "Einstein"
H = "I'll be back"	P = "Commitment"	X = "Obssessed"
		Y = "Legend"

Source: PeerWise, 2015.

1.2 Following authors

Following or *subscribing* to users is a common technique seen in many social systems for accessing content from trusted individuals. PeerWise also offers a mechanism for this, allowing students to follow authors who are writing questions they have found useful. When a student elects to "follow" a question author, they are notified when that author contributes subsequent questions to the repository. This serves a dual purpose - not only does it provide a way for students to discover high quality questions, but for question authors, attracting followers is an endorsement of the quality of the questions they create and can act as an incentive to contribute further.

2. Survey at the Matej Bel University

2.1. The use of PeerWise in the academic year 2013/2014

We used PeerWise for the first time in two computer science courses at the Matej Bel University in the second semester of 2013/2014 academic year: Database Systems 2 (DS2), Semestral Project 2 (SP2). We supposed positive effects in both cognitive and affective domain. Because this was our students' first experience with Peerwise we focused on familiarizing our students with possibilities of this system. For this reason we intended to use PeerWise by these students as a motivation and presentation tool (see Table 2).

TABLE 2. SAMPLE OF STUDENTS, MATEJ BEL UNIVERSITY 2013/14

	attended the course		did PeerWise activities		filled in the final questionnaire	
	count	%	count	%	count	%
DS2	10	100	8	80	6	60
SP2	47	100	46	98	36	77
together	57	100	54	95	42	74

Source: Jacková, 2014.

8 students of DS2 (2014) Peerwise course created 18 questions and submitted 164 answers. That is 2.25 questions and 20.5 answers per student on average (3 students created less than 3 questions; 2 students submitted from 1 to 6 answers and other 6 students from 25 to 28 answers). Students totally earned 37 badges. That is 4.63 badges per student on average (4 students earned from 2 to 4 badges and 4 other

students from 5 to 8 badges). These students earned 7 various types of badges: 3 types of basic ("Question author", "Question answerer" and "Verifier"), 2 types of standard ("Rater" and "Scholar") and 2 types of elite ("Genius" and "Leader") badges.

46 students of SP2 (2014) Peerwise course created 46 questions and submitted 567 answers. That is 1 question and 12.3 answers per student on average (1 student created no question and 1 student created 2 questions; 5 students submitted from 0 to 2 answers, 38 students from 3 to 29 answers and 4 students from 30 to 45 answers). Students totally earned 205 badges. That is 4.46 badges per student on average (3 students earned 1 badge each, 22 students earned from 2 to 4 badges, 18 students from 5 to 8 badges and 3 students from 9 to 11 badges). These students earned 11 various types of badges: 5 types of basic ("Question author", "Question answerer", "Comment", "Follower", "Verifier"), 4 types of standard ("Helper", "Popular question author", "Rater", "Scholar") and 2 types of elite ("Genius", "Leader") badges.

Because we focused on results in affective domain in 2013/2014, at the end of semester in both of these courses we asked students to fill in a short survey with three open questions:

Q1: *own experience with PeerWise from the user point of view (creator of questions)*

Q2: *own experience with PeerWise from the designer point of view (creator of PeerWise system)*

Q3: *was the activity with PeerWise useful for you? yes/no and why*

We presented some of our first results with PeerWise in these courses in (Jacková, 2014). Peerwise was used by 95% of students in our pilot use. We found out from our final questionnaire that

- 79% of all students enjoyed creating questions and learning from other PeerWise users (Q1)
- 88% of all students found the activity with PeerWise useful (Q3) – as SP2 presentation tool and as DS2 motivation tool.

2.2. The use of PeerWise in the academic year 2014/2015

In the academic year 2014/2015 we continue to use PeerWise with Database Systems 1 (DS1) and Semestral Project 1 (SP1) courses in winter semester and with new DS2 and SP2 courses in summer semester. After finishing 2014/2015 academic year we want to compare results in DS2 and SP2 courses from two academic years, focus on cognitive domain research and compare our results with results of other users.

2014/2015 DS1 course was attended by students who did 2013/2014 SP2 course, so it was their second experience with PeerWise. We want to start cognitive domain research with these results. Also, we continue to use PeerWise with new students taking SP2 so we will be ale to compare our results between two different academic year groups. Further, we plan to compare our results from the first two years of using PeerWise at the Matej Bel University with results in relevant literature.

Conclusion and Perspectives

This paper described a pilot use of student-developed MCQ banks created in the PeerWise web-based system as a presentation and motivation tool in two computer science courses at the Matej Bel University in the academic year 2013/14. Benefits of PeerWise need to undergo complex evaluation since we are still only in the early stages of the process. We did a quantitative analysis of student answers from our survey. After finishing the academic year 2014/2015 we will obtain more results, since we will have data from another four courses. For future research purposes, it would be interesting to continue with a qualitative analysis of our survey.

Our preliminary findings say that creating student-developed MCQs through the PeerWise system is a meaningful activity that can be used to increase student involvement in preparation of course material. We used PeerWise – both as a presentation and motivation tool in order to increase students' interest in various topics covering the area of their course learning material. We highly recommend including PeerWise activities to various distance courses since they can help to enhance students' engagement in the course material.

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PERSPECTIVES OF GAMIFICATION IN TEACHING SUSTAINABLE DEVELOPMENT

TAMÁS BOKOR, VERONIKA PELLE

Faculty of Social Sciences
Corvinus University of Budapest, Hungary

e-mails: tamas.bokor@uni-corvinus.hu and veronika@pelle@uni-corvinus.hu

Key words: sustainable development, responsibility, ecopolitics, network education, gamification

Abstract: According to the basic ecopolitical premise, sustainable development (SD) is the key to reserve the earth and to create an economic system which can be maintained through several generations. Moreover, it is the only resolution for the current ecological and, ultimately, environmental problems. For the last few years, the idea of SD in this sense has been taking on a constantly increasing importance, both in the political sphere and the education system. In this paper, we concentrate on the latter field, especially on those tools which use online mediated communication in educating the concept and practice of sustainable development *intra and extra scholam*.

Turning the ideas of sustainable development into practice via online platforms requires a special set of 'literacy' skills, just like the use of (and participation in) new media. That is why we firstly observe and compare the main environmental and media literacy skills in terms of how they appear in cross-curricular systems, finding a starting point in the Hungarian National Core Curriculum. Then we present examples of online tools which provide opportunities for studying the nature of SD. These all apply the method of gamification and/or mobile technology, that is why they can be used in both in- and out-of-school environments. Finally, establishing that public education does not take the advantages of using new media tools in teaching SD at all, we conclude with highlighting the challenges of how these online applications could be built into the Hungarian educational curricula.

Introduction

In this paper, we observe how the economic concept of sustainable development (SD) can be effectively introduced into the public education system as well as out-of-school educative actions. We define sustainable development as a theory *and* practice which unites the viewpoints of economic, social and environmental protection. In terms of the observed didactical aims, our starting point is that sustainable development requires ethical thinking; the presentation of SD and triggering SD actions can only work based on this idea. While presenting existing practices, an emphasized role is given to media-based approaches, especially to gamification methods and new media tools, for they can exceed the mere intracurricular actions, giving an opportunity for the people to immerse into SD topics both individually and in virtual communities.

The concept and components of sustainable development

In the conceptual framework, we observe three main theoretical fields. Firstly, we map the concept and components of sustainable development, then an overview of personality development in both pedagogical and psychological senses is drawn up. After specifying the didactical opportunities of intracurricular SD teaching, we present the types of media literacy skills that are needed in order to use media tools in SD pedagogy as effectively as possible.

Sustainable development has been defined in many ways, but the most frequently quoted definition is the one coming from Our Common Future, also known as the Brundtland Report (World Commission on Environment and Development, 1987: 43): "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts: 1) the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and 2) the idea of limitations imposed by the state of technology and

social organization on the environment's ability to meet present and future needs." All definitions of sustainable development require our ability to see the world as a system – a system that connects space and a system that connects time (IISD, 2013).

Among the three main aspects – environmental protection, economic, and social development – certain important properties can be found:

- Social development combined with environmental protection results in an endurable life;
- Economic development taking care of social development creates fair conditions for the life of societies;
- Mainstreaming environmental protection in economic development settles liveable living conditions;
- Joint social and economic development combined with the enforcement of environmental concerns makes development sustainable.

Turning the concept of sustainable development into practice results in the conflict of several economic (e.g., agricultural, industrial, trade, etc.) and social (e.g., those of public administration, of national defence, political, etc.) institutions, while the viewpoints of environmental protection must be taken into consideration to the same extent as the above-mentioned ones. To resolve the conflicts of interest and to implement sustainability, mostly national or country-level strategies are built as a result of the work of decision-makers. Studying the sustainability strategies of eleven countries developed to a different extent (Kerényi & Csorba, 2003), it turned out that these all deal with the three above-mentioned main pillars (i.e., environmental protection, economic, and social problems), albeit with different emphasizes in each countries. Furthermore, some national strategies take even a fourth factor into account, the development of the institutional background (Kerényi, 2006), which is responsible for the realization of sustainability as well as for the functions of decision-making, execution, control, and feedback. Moreover, not all the strategies wear the label of sustainable development; some of them deal with the issue only in terms of content, while, in practice, they speak rather about social equality, comprehensive education, or the economic system. This paper neither evaluates the professional content of SD nor rates/maps the chances for realizing it. Instead, it only focuses on how the concept of SD can occur in the school and in extra-school systems as a didactical aim. In this sense, we emphasize the importance of the above-mentioned fourth pillar, namely, the institutional development with regard to education and media.

Personality development and SD pedagogy

Educating to sustainable development – that is, to the creation of a reasonable and moderate balance of production and consumption, which takes into consideration the needs, demands and interests of both our

social and biological environments – is a kind of social construction. Understanding this construction requires a special ability of the individuals to be able to think of their environment beyond their own interests. This calls for a change of points of view, in particular at two levels. On the one hand, a certain level of thinking is needed, at which the individual is able to consider other people's interests at least to the same extent as his or her own and, at least temporarily, is able to place these even above his or her own needs. On the other hand, in case of the presence of behaviour patterns in the individual's life opposing the idea of SD, there is a need for permanent change of these consumer patterns based on the individual's apprehension of new ideas. Concentrating on the former aspect, this section looks over the process of this "social change", proceeding along the main steps and turning points of the individual's psychological development. Based on this overview, we then point out the stages where SD education could have a room in school age, and thus be activated.

In the early pre-school age, when the child is not yet able to differentiate between his and that of the outside reality (Piaget, 1930), educating the individual to SD is rather unimaginable, given the fact that SD requires a serious capacity for abstraction. It is around the fourth age of a child when the ability to think about others' mental state appears in the individual, also known as the theory of mind (Astington & Gopnik, 1991). At this age, the child is already capable of anticipating the reactions of his environment and, to a certain extent, of putting himself into the role of others. It is at this age when, among mental abilities, intentionality appears: the individual does not only know what he knows but is also able to perceive if others are conscious, or not, of what he knows.

By the age of 5-6, the child starts assessing the violation of moral prohibitions (e.g., abuse) differently from the violation of social conventions (e.g., traffic regulations). The evolvement of moral judgments and social conventions in the individual thus take place independently from each other (Turiel, 1983). This step renders the individual capable of thinking along universal norms of wider validity than his closest environment, and of treating social conventions as relative truths. Based on Damon's (1980) scale, decisions equal to positive morals as well as the concepts of worthiness and merit develop around the age of 6-9. It is after this age when moral relativism mellows, which is the understanding of the fact that different people may form claims to the truth along different principles. The considerations of equality and reciprocity then align only after the age of ten, so that individual decisions already take both the needs of others and the specific requirements of the given situation simultaneously into consideration.

The thinking of children and young people about politics undergoes a considerable change around the age of 14 (Adelson, 1972). In the case of thinking about society and the social system, it is mostly the views about law, social control and political idealism where significant disparities can be noticed

between the 12-13 and the 15-16-year-olds. While, in Adelson's study, the 12-13-year-old teenagers referred to specific people and events in their answers given to questions related to the society and the reason of law, the answers of the 15-16-year-olds were built already upon abstract principles.

It is notable that, according to Kohlberg (1976), commitment to the social contract, as well as to universal moral principles, appears only in the so-called post-conventional stage of psychological development, succeeding the stages of the so-called "good-boy-morals" and that of "order and discipline". Regarding the moral-ethical dimension of the aspiration for SD, the implementation of an environment-conscious lifestyle requires interiorized behaviour patterns, which cannot be ensured solely by the above two stages. The permanent fixation of a yet non-interiorized behaviour, adjusted to external control, has double chance. A lasting change of view is feasible only in the post-conventional stage of moral-ethical development.

Didactical opportunities of in-school SD education

The pedagogical programs of Hungarian educational institutions include environmental education as a compulsory element set in the 2012 National Core Curriculum (NCC). The role of environmental education is to develop environment-conscious behaviour, to acquaint the pupils with the concept of SD and to organize activities in service of SD (Hankó, 2012). The NCC "pays attention to global and comprehensive issues, emphasizing our shared responsibility for sustainability" (110/2012. (VI. 4.) Korm. rendelet, 2012: 10 640). Sustainability and environmental awareness appear under one title within the regulation cited above, however, the concept of sustainability appears both within the educational module of *Man and society* (related to the global civilizational problems of the 20th century) and that of *Man and nature*. Whereas the former module assigns the development of responsibility for our environment and sustainability as one of the most important developmental objectives (2012: 10 707), it is the latter module that is responsible for the introduction of the practical aspects of SD.

The NCC shapes the need for educating sustainability and environment awareness as follows: "The future generation must know and appreciate the rich diversity of life in nature and culture. Students must learn to use resources with awareness, economically and responsibly and take their capacity of renewal into consideration. The objective is to encourage students to internalize an attitude which is based on the knowledge and appreciation of nature and the environment, on the protection of values and on the promotion of sustainability. Institutions must prepare students for practicing their citizen's obligations and rights related to the environment. Effort must be made to help students understand those economic and social processes that may result in changes or crises and encourage them to participate in the preservation and enrichment of the values and diversity of their immediate and wider environment" (2012: 10 643).

Furthermore, the NCC notes that "scientific and technological competence entails the awareness of the conditions of sustainability – that is, of a society that operates in harmony with nature in the long run – and

the acceptance of individual and community responsibility for shaping society" (2012: 10 654). A person possessing this competence develops "a critical approach to pseudoscientific, antiscientific and anti-technological assertions, as well as to assertions that give priority to technology and production over human considerations and the sustainability of nature" (2012: 10 654).

For the purpose of enforcing sustainability at social level, while discussing the social and civic competences, the NCC states that "constructive participation also entails a supportive attitude towards civic activities, social diversity, social cohesion and sustainable development, as well as respect for others' values and privacy" (2012: 10 656), thus referring to the moral-ethical concerns of SD.

As it can be seen from the above, the core curriculum of the Hungarian public education lays emphasis on both the "software" aspects of SD (the individual ones based on moral imperatives) and the "hardware" ones (the social ones that can be described with technological and economic termini). Moreover, it is worth noting how the above become transferred to practice.

During the 9th and 12th grades of public education, the NCC prescribes a sustainability-related project work to be carried out as part of the *Science, technology, culture* development task. Within another development task, *Environment and sustainability*, the establishment of an environmentally aware attitude and a way of life that promotes sustainability are compulsory tasks throughout the grades 1-6. Laying the groundwork for an attitude and ways of life based on saving material and energy (transport, heating, packaging, food and drink, selective waste collection, recycling) is present as an equally concretized aim in the NCC. In relation to the state and protection of environmental systems, the introduction of methods applicable in households and small communities is mentioned, as well as the recognition of natural values and values lying in the communities sustainable in the long run.

Sustainability as educational content appears in the following grades and subjects in the 2012 NCC: grades 1-4 and 5-6: Environment; grades 7-8: Biology, Physics, and Chemistry; grades 9-12: in a cross-curricular system. As regards the implementation, the pedagogy of SD in practice appears in schools in the form of selective waste collection, hiking, garbage collection and tradition-preserving events. The matter, however, is much more than that: students participate in project works, maintain relations and exchange experience with local communities, study about energetic modernization, measure and analyse their ecological footprints and environmental emission, build models of the processes of climate change, etc.

Under the title of *Global challenges*, the 9-12th graders learn about the following topics (2012: 10 783):

- The possibility of mutually enforcing social, economic and environmental considerations in economic activities;
- The consequences of economic growth; conscious consumption and shopping; the sustainable exploitation of resources;

- Possibilities for limiting the damaging effects of their use;
- Tasks in environmental protection and nature conservation, environmental management; examples of protected natural and cultural assets (world heritage sites);
- Responsible environmental behaviour; the social responsibility of the individual;
- Local organizations and regional and international cooperation aimed at sustainability: conventions, guidelines, and international organizations.

This manifold approach reveals the SD-related attitude of the NCC: this topic can primarily be discussed from the natural sciences' point of view. This, however, has fundamental effects on social life as well as the life quality of individuals within it. Nevertheless, when it comes to presentation and demonstration, the topic mostly stays within the scope the subjects of natural sciences. This happens despite the fact that, according to Czippán et al. (2012), in SD pedagogy, lifelong learning; interdisciplinary approaches; the improvement of critical thinking and system approach as well as of cooperation and social skills; and the handling of multicultural perspectives and unequal opportunities come inevitably to the front. These phenomena and aspects all go much beyond of mere environment- and nature-related questions, that is, the world of biology, physics and chemistry. From among these, lifelong learning has to be highlighted even more since it assumes internal motivation, thus forming a transition to SD pedagogy beyond school, as it has to be continuable even after leaving the institutional place of education.

Barriers and problems in SD pedagogy, and a possible egress

According to Lányi (2014), the most serious problem in terms of the discipline and the methodology of the pedagogy of sustainable development can be found in the fact that there is no cross-curricular property in it. This means that SD appears mostly as built into the subjects of natural science, while a much different message is hiding in the social science-related subjects. "Ruling environmental pedagogy does not aim and does not shoulder the task to grow disaffection and distrust towards a dominant techno-economic system among pupils. This is proved by the common practice in public pedagogy – worldwide –, which designates the place of SD almost totally in the curricula of natural sciences. Thus the well-established double bind education does not result in dissension: during geography, chemistry, and biology, the pupil learns lessons about what kind of changes have been made in nature cycle processes. […] Although it is not a secret that these harms were caused by the encounter of civilisation and nature, the pupils' anxieties are placed into the natural science lessons by the curricula itself. However, we are not nature but the civilisation. (Fortunately, there is nothing wrong with us.)" (Lányi, 2014:139).

Meanwhile, history lessons present how the triumphal procession of civilization and scientific-technological progress take place. Basic tenets of social studies and economics are based around the keywords of a competitive market economy, consumption and the expansion of abundance and prosperity,

which require constant increase, moreover, a sustainable growth in principle, helped by science. The paradox message between the two subject groups is not dissolved in education; a tense contradiction exists in them. Accordingly, school-based education handles the socio-economic feasibility of sustainable development as well as its effects exerted on the environment in a too isolated way, presenting it as a realistic scenario. As a result, SD is presented as opposed to civilisation and, consequently, also estranged from it. We feel sorry about whales and the destruction of rainforests, we are concerned about the floating garbage islands in the oceans, and we are horrified by the reports about food chains of tipped balance, but we assume that these have no significant effect on our civilization. Meanwhile, we firmly believe that, in our increasing human population, everyone can apply the right to have access to more and more public goods and services as well as welfare (Lányi, 2014).

This is the point were environmental literacy could make a change, as it – if acquainted and interiorized – refers to a holistic understanding of people about their environment, which is the result of a process synthesizing all sources of information a person may have. It is built up of personal learning processes but these are affected by wider socioeconomic, political, cultural, historical, and ecological circumstances (Hares, Eskonheimo, Myllyntaus & Luukkanen, 2006). Hereby appears the cross-curricular property missed by Lányi (2014) above. As Hares et al. (2006) point out, although environmental literacy is a subjective set of skills, attitudes and behavioural patterns, it is closely linked to a broader framework at local, national and global levels, integrating several spheres and elements of social life as well as various individual elements of the learning process. Environmental literacy, thus, "includes the elements of perceiving, decoding, and also using information from the environment. It consists, in addition to reading, the ability to "write" on the environment, that is, to sustainably use, conserve, maintain and co-exist with the environment. In other words, environmental literacy is not only a set of conceptions in people's minds, but also something that is manifested in people's environmental behaviour" (Hares et al., 2006).

The evolvement of environmental literacy and an environment-conscious behaviour in an individual, though, is much influenced by what is projected by the media. However, as a researcher points out, the environment and news related to it are not striking enough for the mass media (Dennis, 1991). According to Gresham's law of news, good news in the media are driven out by the bad ones. In connection with topics of sustainable development, it seems that the locally based, specific and rapidly progressing disasters, accidents and crimes not only crowd positive news out of the media, but also the global, non-tangible and protracted disasters such as the drastic destruction of the world's forest stocks or the negative consequences of the explosion of population. The topic of sustainable development as a key factor of environmental literacy thus has no current news value, no "fancy factor" in these days, so it inevitably takes a back seat in the mass media. However, new media may well bring some novelty in this regard.

There is a lot in common between environmental literacy and media literacy. According to its most frequently cited definition, media literacy, a term that has become extremely popular with the appearance of new media, is "the ability to access, analyze, evaluate and create media in a variety of forms" (e.g., Livingstone, 2004a, 2004b; Thoman & Jolls, 2005). As such, it much resembles the skills enumerated in the definition of environmental literacy above; it is mostly only the referent that differs. Using the key verbs and terms of the above two definitions for comparable purposes, both termini require the abilities to "perceive information" from the environment/media; to be able to "understand"/"read"/"decode"/"analyse" them; to "create"/"code"/"write" media messages/environmental activities (as examples, think of user-generated content in the new media vs. citizen-initiated attempts to "conserve" and "maintain" the environment), and both need the aptitude to critically "evaluate" environment/media actions and messages that have been seen and heard.

Thus, it comes as no surprise then that similar parallelism can be found in the descriptions of the two related development fields – *Sustainability and environment awareness* and *Media literacy* – in the Hungarian National Core Curriculum as well, when defining the main educational goals of these fields (110/2012. (VI. 4.) Korm. rendelet, 2012). Here the development field and educational goal of Media literacy is described as follows: "The objective is to help students become responsible participants in a mediatized global public discourse and understand the language of both new and conventional media. Through the development of an analytical and critical attitude and through focus on activity, media literacy education prepares students for participation in democracy and for the organization and conscious shaping of everyday life which is influenced, among others, by the media" (2012: 10 644). Again, the resemblance of key concepts is rather evident: both development fields of *Media literacy* and *Sustainability and environmental awareness* (related to environmental literacy) require the sense of responsibility from the individual, concerning his attitude towards the treatment of the environment (in order to be able to maintain and preserve it for the future generations) as well as the various media content or tools (just think of privacy issues, the option of sharing content in new media, or the questions of controlling media content, for instance, for protecting our children from media violence to be seen on the TV screen).

As another vital attitude, the need for critical thinking is present in both cases as well. While, on the one hand, environmental literacy and the idea of sustainable development require a critical approach towards the rapidly developing world and its societies, which pay little or no attention to the interests of nature and Earth; on the other hand, media literacy aims at critical attitude towards the (automatic) reception of what is heard or seen in the media and towards an absolute confidence in it.

An active or proactive attitude can be labelled as the third shared key competence for environmental

and media literacies. While the active user, Toffler's prosumer (not only the consumer but at the same time the producer of media content) is an inherent element of new media, discerning it from the traditional, older forms of mass media (it is enough to think of blogs, user-generated content, grassroots journalism, user-initiated online knowledge banks such as the Wikipedia or social media activism and movements), the constructive participation of an active (what is more, proactive) environment activist is at least as important in SD as that of the conscious media user. Thus, the desire for an active participation in the democracy and social life is implicitly present in both terms.

Based on the above, we argue that both environmental literacy (including the idea of sustainability and SD) and media literacy involve essential literacy skills, such as the perception, analysis, production, critique and evaluation of information from the environment/media, while they also share the common attitudes and requirements of responsibility, critical thinking, and the active or even proactive participation of the individual. In addition, given this resemblance in the addressed skills and competencies, we further argue that media (specifically new media) could be a potential tool for promoting and developing environmental literacy and thus educating SD intra or extra scholam.

The need for new media

Besides the above detailed joint skills of environmental and media literacies, there are a couple of further aspects that prove the suitability of (new) media for educating and promoting sustainable development. Firstly, as new media, often also referred to as social media, is described by a social character as one of its genuine features, its social tools, sites and platforms densely inhabited by active users gathering into various virtual communities offer excellent opportunities for reaching individuals quickly and easily, and enrolling them into various activities or campaigns. Thanks to the mobile forms of new media and the always online lifestyle of a great proportion of social media users, such content (e.g., an SD message or campaign) often takes the form of a virus: it reaches extremely wide scales of audiences in exceptionally short periods of time (you may think of the campaign of Ice Bucket Challenge in 2014 and the donations it yielded). Furthermore, the virally shared exemplary behaviours work as catalysts for the communities of these social media platforms, stimulating and encouraging them to follow the exemplary activities that have been shared with them (the TeSzedd! [YouGather!] campaign in Hungary, encouraging volunteers to gather and collect the garbage from public spaces together, is a good example).

A final reason for exploiting new media for SD-teaching and -promoting purposes is the concept of lifelong learning already touched upon above. Namely, the topics and competencies of environmental literacy and sustainable development are typically ones which exceed the frames of public education and its compulsory subjects: the implementation of SD and environmental literacy steps out of the compulsory frames of in-school subjects, and requires true internal motivation. This leads us on to the idea of lifelong learning, since SD is a typical issue that has to be continuable even after and beyond the frames of school.

This is the reason why the media – as the only comprehensive stage of socialization that spans over ages of life and is not exclusively linked to any developmental stage, but is present practically from the cradle to the grave in a person's life – can be the most suitable tool for promoting sustainable development. Furthermore, since today's youth spend the majority of their day-(and-night-)time online on a variety of mediatized platforms, appointing new media as the primary source of their information and knowledge acquisition as well as social communication, the various new media tools and platforms become the prime sources of knowledge and contact, influencing and formulating their opinions, attitudes, habits and view of the world

New media tools in SD pedagogy

In this chapter, we introduce some examples of SD pedagogy as present in both in- and out-of-school contexts, limiting ourselves to two main fields of new media, gamification and mobile technology. "Gamification is the application of digital game design techniques to non-game contexts, such as business, education, and social impact challenges. Video games are the dominant entertainment forms of modern times because they motivate behaviour powerfully. Game mechanics can be applied outside the immersive environments of the games themselves, to create engaging experiences as well as assign rewards and recognition. Over the past few years, gamification adoption has skyrocketed. Companies use game thinking for employee motivation in human resources, team building, productivity enhancement, training, health and wellness, sustainability, and innovation. Marketers gamify their programs to engage customers. Organizations apply gamification to motivate crowdsourcing participants. Governments, non-profits, and educational institutions are also applying these techniques"(Coursera, 2014).

Gamification is a didactic approach as well as a business-leading model. The biggest difference between game and gamification is that games are used to entertain the players, while gamification is a strategy which applies game planning techniques in a non-game environment. Gamification tools and techniques are used to achieve a pre-defined goal. In case of a game, one acts only in the virtual space (or in the world of the game); gamification lets us get closer to our aims by real acts (or *also* by real acts).

This concept is built around two basic phenomena: game tools and gaming mechanisms. Video games and traditional tools include, for example, point rankings, avatars and rewards. Game mechanisms describe the understanding of the games-related psychological and motivational processes of human brain. Moreover, the application of the operational principles of games, such as feedback, competitive rewards and cooperation (Farkas & Vendler, 2014). Either we capture the essence of gamification as a method existing solely on online platforms or as a management-education strategy applicable for offline environments as well, in any way, the point is the enhancement of the user experience. In this sense, users (i.e., players) can be members of both virtual communities and of organizations pursuing offline activities

(such as students in public education, in higher education system, or even open-minded and curious adults who are interested in games in a broad sense).

There are a number of extra-curricular activities serving as examples of gamification. Although gamification is not necessarily being tied to digital content, it takes the form of digital applications in almost each case. The most characteristic examples of the fact that the tools of traditional strategic and role-playing games are adopted by social networking sites (SNSs) are community websites. Users (participants) of these platforms are classified by a ranking system, based on the rewarding points they gain for their activities (e.g., forum posts, uploads) and stars or other insignia they collect by implementing various tasks (e.g., for participating in a project). According to their rankings, users are allowed to access the exclusive content of SNSs, and establish their own avatar, i.e., a virtual identity. In these pages, it is not uncommon that "games in the game" appear. These are further playful missions and tasks which are built into the "gamified" surface. By accomplishing these challenges, the performance and reward of the players can grow on.

The Keas health management page, the donation game called CrowdRise, turning donation into playful fighting, the RecycleBank, which purchases redeemable points for achievement in selective waste collection, and a number of other similar sites give excellent examples of how gamification can be implemented in practice, including various aspects of sustainable development. Such applications are based on a similar motive of gamification, that an online activity is converted into a spectacular activity in one's offline life, or real-life changes are at least stimulated, either in terms of health promotion, lifestyle changes, fundraising for public purposes, or changes of waste disposal habits. In other words, that is addressed in broader sense, is sustainable development itself.

To use gamification at an institutional level (e.g., in business, human resource management, healthcare, or even in marketing), three factors must prevail (Fromann, 2012):

- Optimal load, in which the player's (worker's, student's, etc.) capabilities are balanced with the challenges caused by the game. This results in the experience of flow;
- Ideal levelling, which designates a base story and an ultimate goal to be achieved, and cuts the game activity into pieces in order to fit specific subgoals;
- An ideal reward system that gives the "players" instant positive feedback on their performance: Ideally, this reward is commensurate with the achieved performance, eliminating the asymmetry between the investment and the energy level of reward.

In connection with gamification, some misconceptions need to be clarified.

- In terms of the in-school applicability of gamification, it is often suggested that this is equal to the use of video games, computer games and other media tools. In fact, the aim of gamification is not

to implement specific games in school or work scenes, but to show and use basic principles of the games involved into education or work. Ultimately, the main aim is definitely to increase motivation by drawing exciting tools into the process.

- Consequently, the application of gamification does not require the teachers to be game professionals: in principle, it is sufficient if they themselves already have some kind of game-playing experience and understand the main mechanisms of the games.
- As gaming devices are symbolic constructions, they do not require computer infrastructure. (The point system and other rewards can be operated outside the computer without any problems.) It is a question of decision how much time is spent on organising a gamified action, and whether gamification dominates in the classroom at work, or it just appears as an additional tool. In the former case, gamification gives the framework for the lesson – as well as the frame story in a video game –, while in the latter case, gamification elements only enrich the learning and working process to enhance the "user experience", for example, by a new type of task or a new kind of evaluation procedure.

Concerning media devices, proliferation of mobile applications is a characteristic tendency of the early 21st century. Mobile technology, as an informal educational tool and scene, is remarkable as the mobile phone penetration among the Hungarian population is well above one device per person (i.e., more SIM cards are in circulation than the entire population of Hungary). Penetration percentages in most countries of the CEE region are approximately the same; moreover, this trend is typical not only for Europe, but also for India, the Middle East and several countries of Africa. Furthermore, the use of smart phones among mobile phones is also growing rapidly.

According to the Hungarian National Media and Communications Authority's Internet research in 2013, mapping the use of the Internet in Hungary, 10 types of web surfing devices are suitable for residential use. The average Hungarian Internet user accesses 2.85 devices suitable for Internet access on average. Only 19% is the proportion of those who use the Internet on only one kind of device. Almost all Internet users have their own devices, in general (97%) more than one. In addition to their own device, most people use other machines (computers and mobiles of their family members, their school, workplace, etc.). The Internet is most commonly used still on desktop PCs, while the second in line is the portable PC. More and more people use the Internet also on smartphones and tablets. Thirty-eight per cent of Internet users access the Internet via a smartphone (Nemzeti Média- és Hírközlési Hatóság, 2014).

A number of mobile phone applications are intended for environmental protection. First, the Visibility app by California University Research Center transmits sky photographs to a server, which analyses sky brightness and sends information back to the photographer about the air pollution of the site. Broader goals

of sustainable development are supplied by Mobile Harvest, which connects peasants with each other to be able to build a professional network and thus share useful ideas with each other. These hints are then sorted into different categories to make the various pieces of information searchable. In addition, the ideas are even accompanied by pictograms, to help people with lower levels of literacy as well. The next project, LeafSnap, designed by Columbia University, helps to catalogue the effects of climate change in relation to certain plant species. Finally, sometimes it is not even necessary to develop separate applications for environmental education and sustainable development: Flickr users, for example, already have the chance to join groups that identify unknown or endangered animal and plant species on the basis of uploaded images.

The above-mentioned examples represent and promote mainly the environmental dimension and understanding of sustainable development, aimed mostly at the population of developing countries. However, there are also apps supporting the social dimension of SD. During 2011, "HP, along with partners Positive Innovation for the Next Generation (PING) and the Clinton Health Access Initiative (CHAI), have introduced a mobile solution to disease outbreaks in two African countries: Botswana and Kenya. HP trained health workers to respond to the symptoms of malaria by reporting potential outbreaks via text message to authorities, which takes about three minutes. The method of disease response, before the introduction of mobile, could take three to four weeks from remote regions" (Fox, 2012). This practical use inevitably leads to the expansion of knowledge about the disease, albeit some of the apps have been criticized for diagnostic inaccuracies (Rees, 2015). This triggers considerable concerns about the real utility function vs. the pure hype of SD-related mobile applications.

Discussion and conclusion

In this paper, we presented the definition, composition and place of sustainable development ideas in educational curricula. Concentrating on in-school SD pedagogy, we pointed out that the cross-curricular resolution has serious issues in terms of congruency: students face different spheres and viewpoints of SD in the different lessons. Schools of public education theoretically possess several tools and methods which could be used to fulfil the didactic aims of SD, from general gamification tools and methods to direct computer applications. However, their efficiency is called into question: as they require several skills on the teachers' side and need extra effort and preparation time, they are mostly omitted or rejected from the educational agenda. A possible resource from this trap may be the *extra scholam* resolution: self-development of people (not only students) by using SNSs and different SD-focused mobile apps privately. However, this requires media literacy skills, where motivation appears as a crucial factor. If the SD-related SNSs and apps are not integrated into bigger platforms (e. g., Facebook, Flickr, etc.), what will ensure the motivation for their enduring and intense use, and enhance the building of new media communities around them? Without answering this challenge, the valuable ideas of gamified social network sites, mobile apps

and other new media solutions may just stay as solitaire islands in the even more polluted ocean of new media world.

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THE FUTURE POSSIBILITY AND APPLICABILITY OF ONLINE GAMES IN HIGHER EDUCATION - A CRITICAL ANALYSIS OF ARGUMENT WARS BY ICIVICS

ZSÓFIA, ILLÉS
KRISZTINA, SZABÓ
ALEXANDRA, SZEMERE

School of Philosophy and History of Science, Budapest University of Technology and Economics (BME), Hungary

e-mails: illes.zsofi@filozofia.bme.hu, kriszti.szabo@filozofia.bme.hu, szemere.szandra@filozofia.bme.hu

Key words: iCivics, Online Games, ICT tools, Higher Education Development, Teaching Argumentation

Abstract Could online games work for adults in Higher Education, for instance, in teaching Argumentation Theory? We chose iCivics and one of its online games as our case study. iCivics is basically an online education assisting program, using tools such as free lesson plans, Drafting Board and games – both online and non-online games. iCivics was created by Sandra Day O'Connor and has been applied since 2010 throughout the USA. The online program is designed for middle and high school students, applied for developing their argumentative writing skills. It seems that the iCivics' goals are the same as ours. As practicing teachers, we experience that the attainment of Argumentation Theory is difficult for students, even for those who are mastering in Communication Studies. Our aim is to train well-prepared critical thinkers on Higher Educational level, both in oral and written argumentation. We already use several tools for this project, such as passive teaching style (frontal lecturing) and also active teaching style, e.g. games. Naturally gamification is involved, as we use board games during classes. However, online games are not presented among our tools yet. Looking through related relevant literature and games, we found Argument Wars. In our research[1] we critically analyze this online game, which is one of iCivics' sixteen games, based on a Constructivist standpoint elaborated by McGonigal (2011 in Buck 2013), Kárpáti (2008), Wingfield and Black (2005) and Biggs and Tang (2007). Seeing the potential of the game, we decided we should integrate it into Higher Education. We raised three questions: A, What are the promises of Argument Wars?, B, Does it fit into Constructivist Pedagogy? And C, (How) could we use it in our Argumentation Courses in Higher Education? As a final aim we would involve fellow argumentation teachers in a methodological development of argumentation courses.

Introduction[12]

Learning Argumentation Theories and Techniques in contemporary society is essential. In our mediatized world where public communication is so highly preferred we should learn how to form and phrase our opinion and how to be an intelligent debater who can build up a proper argument and is able to criticize other's standpoints. In democracies, debating plays an important role in political, scientific and also everyday life. Thus, learning argumentation skills and practices is necessary. Based on these arguments we claim that teaching Argumentation at the level of Higher Education should be a precious task. As practicing teachers, we can see how much difficulties students have in arguing, debating and forming proper standpoints in public in the level of Higher Education even in the program of Communication and Media Studies. We find that the roots of the problem lie in the teaching method of Argumentation that is why we intend to make some methodological development on Argumentation teaching. In order to make educational methods of Argumentation Studies more effective we searched for new techniques in contemporary educational literature and found gamification as a very exciting, easily

[1] This current paper is a developed version of a previous article: (Illés, Szabó and Szemere 2015).

[2] This ongoing research is conducted in the framework of Integral Argumentation Studies, OTKA – K-109456 at the Doctoral School of Philosophy and History of Science, Budapest University of Technology and Economics.)

applicable and useful method for developing teaching and learning. The main question of our research is whether online games work for adults in Higher Education in teaching Argumentation Theory? In order to answer this question we chose iCivics, an educational assisting program to be the subject of our case study. In our paper we present a critical analysis on one specific game of the program called Argument Wars, which promises a good help in developing argumentative skills. The aim of this paper is to decide whether Argument Wars is applicable to Higher Education; and if it is, then how.

As a starting point, first we will present the methods and theoretical background of our research. After that we will summarize the main features of iCivics program in order to get a better understanding of it. After this summary we will narrowly concentrate on Argument Wars and analyze it from a constructivist point of view elaborated by McGonigal (2011 in Buck 2013), Kárpáti (2008), Wingfield and Black (2005) and Biggs and Tang (2007). The aim of this paper and the analysis is to decide whether Argument Wars would be applicable for Higher Educational purposes. Finally we will discuss the main results and answers for our questions and we also offer some possible ways of further research on the topic. We recommend our paper to the fellow argumentation teachers who share our mission of developing Argumentation courses.

The final aim of our research is to train well prepared debaters on Higher Educational level. We intend to develop these students' ability of critical thinking, their oral and written argumentative skills and also to help them achieve a near-professional level of their newly obtained skills, so that they are able to use those skills in real-life situations effectively. In order to achieve our goal, we chose a model of Constructivist Pedagogy instead of a traditional frontal teaching method. We still partly use passive teaching style during our classes, but we also started including an active teaching method by using board games and other types of non-online games. Additionally, we would like to broaden our set of tools by online games as well. Therefore, gamification presented itself as an opportunity to improve our Argumentation courses.

Theoretical background

First of all, we need to define gamification. "By definition, gamification means using the mechanics, rules and techniques known from various kinds of games (including board games, role-playing or computer games) in non-gaming context to increase user's engagement in performing various types of activities, especially if those activities are considered boring or routine " (Laskowski 2014, 972).

Talking about education and teaching methods a question automatically arises: why should we occupy with games in teaching and learning Argumentation? The answer is that playing games is a commonly popular activity whether we talk about board games, online games or even video games. According to the related literature on Argumentation and teaching methodologies (i. e. Alexander 2014; Brandenburg,2013,

Andrews 2010; Buck 2013; DeHaven 2013; Fry 2008; Hastings 2009; Marks 2014; Race 2006; Ruben 1999; Squire 2007) games are not only for children, but on the contrary: adults also spend a significant amount of time with playing games because games "are enjoyable, and interactive and learners respond naturally to this type of dynamic" (O'Riordan and Kirkland 2008, 2). It is necessary to mention that "we normally think of games as being fun, kind of trivial, maybe something to pass the time, but what if we thought about them as a platform for inventing the future of higher education?" (McGonigal 2011 in Buck, 2013). Although we can identify games based on their types and nature, generally speaking, starting from McGonigal's idea we claim that playing games is an active and constructive process of learning and practicing in which one could learn rules, create strategies and make tactical movements in order to serve the social upbringing and learning since childhood. "So if it [game] is an effective and engaging learning tool for children, there is no good reason why it should not work for engaging and developing learning in adults" (O'Riordan and Kirkland 2008, 1). Based on the above, we hold that if we formed games into useful tools which can match to the actual curriculum of a course then games could play an effective and engaging role in teaching argumentation. Thus they could be special and useful educational tools which would serve as a deeper and more complex understanding of the argumentation materials. As Meier puts it, "right game for the right audience at the right time can make learning fun and interesting, can provide a helpful review that strengthens the learning, and can even act as a kind of test and measure of learning" (Meier 2000, 148).

According to Meier games "can be interesting, clever, fun and very engaging" (Meier 2000, 147). As O'Riordan and Kirkland summarized, student gave positive feedback on games and they thought about them as enjoyable and interactive activities. But how does one exactly behave during playing games? According to Marquis' categorisation based on the subdivision of McGonigal there are four important player characteristics at the level of Higher Education. The first is (1) 'urgent optimism' which means that the players think they really have a chance to solve the problems that the game gave them. They build (2) 'social fabric' for the cooperation. The time what they spend with the game is a (3) 'blissful productivity', they feel their activities are part of a larger event where their decisions gain spectacular meaning, their activities gain (4) 'epic meaning' (Marquis 2011, n.p.). The former qualities present the main causes why people like to spend their times with games and playing. According to Marquis (2011), these four points of games should be an essential part of courses and lesson plans, because in this way the curriculum-formed games could „[…] offer an opportunity to promote collaboration and fosters active learning" (O'Riordanés Kirkland 2008, 3). Thus, games as tools of the active learning process gain a high priority role in our

research. Meier also defined what kind of characteristics should be included in a game. These are the criteria we use as a frame to analyse Argument Wars. A game should:

1. Be related directly to the workplace.
2. Teach people how to think, access in information, react, understand, grow, and create real-world value for themselves and their organization on a continuing basis.
3. Be as enjoyable and engaging as possible without striking people as being silly or superficial. (Games that appear superficial and childish can turn people off.)
4. Allow for collaboration among learners. (Any competition in a game should be between teams and not individuals.)
5. Be challenging, but not to the point of frustration and disconnect.
6. Permit ample time for reflection, feedback, dialog, and integration.

(Meier 2000, 148)

As practicing teachers we already use non-online games (i. e. board games) in our Argumentation courses but for the reasons previously mentioned we searched for online argumentative, debating and reasoning games in order to develop our teaching methods. As a result, we found an online game of iCivics program called Argument Wars. At first sight we supposed that this game of the award-winning iCivics program could fulfil our final aim of training well-prepared debaters on a Higher Educational level. This was the main cause why we decided to have a closer look on it. In our secondary research – after a short background analysis of the whole iCivics method – we made a critical analysis on Argument Wars focusing on the following three points: (1) What are the promises of Argument Wars and what is realized of them? (2) Does it fit into Constructivist Pedagogy? (3) (How) could we use it in our Argumentation courses in Higher Education? Before we present our answers it is necessary to introduce the program of iCivics and Argument Wars itself.

About iCivics and Argument Wars

iCivics program was created by Sandra Day O'Connor, a retired Associate Justice of the United States Supreme Court in 2010. This educational assessment tool provides teaching material and an online program for educational purposes. According to their mission, those who use iCivics in their teaching practice „[…] envision a nation where all young Americans are prepared for active and intelligent citizenship. To support this vision, iCivics empowers teachers with effective and engaging resources to develop the next generation of citizens" (Our Story. iCivics 2010).iCivics offers several lesson plans, teaching tasks and guides in order to help develop written argumentation skills, text comprehension, persuasion abilities and critical thinking of children. iCivics' main mission is to prepare children to be

valuable, intelligent, active and comprehensible members of American democracy. With the help of iCivics children could get acquainted with the mechanisms of democracy, government, politics and all basic documents of America. iCivics is a kind of visual learning tool and with its role-plays and online simulation games it would like to be "[…] what school should be. It should be an engaging experience when you are part of the action, you make those choices, and you decide what happens and you learn the result of that process" (iCivics 2015; MacArthur Award Recipient, YouTube video 2015, 03:07 sec).

iCivics program offers teachers online material on government and possibilities of practicing civic behaviour throughout games, free lesson plans and interactive modules. "The lessons help set the context for the discussion, provide resources such as PowerPoint presentations and videos for students to watch, suggest supplementary readings, and offer meaningful activities for students to complete. As they navigate their way through these resources, students learn that "there's a difference between 'arguing' and making an argument in support of a position, and that making an argument is a learned skill that doesn't depend on how you feel about an issue" (Wormeli 2012, n.p.).

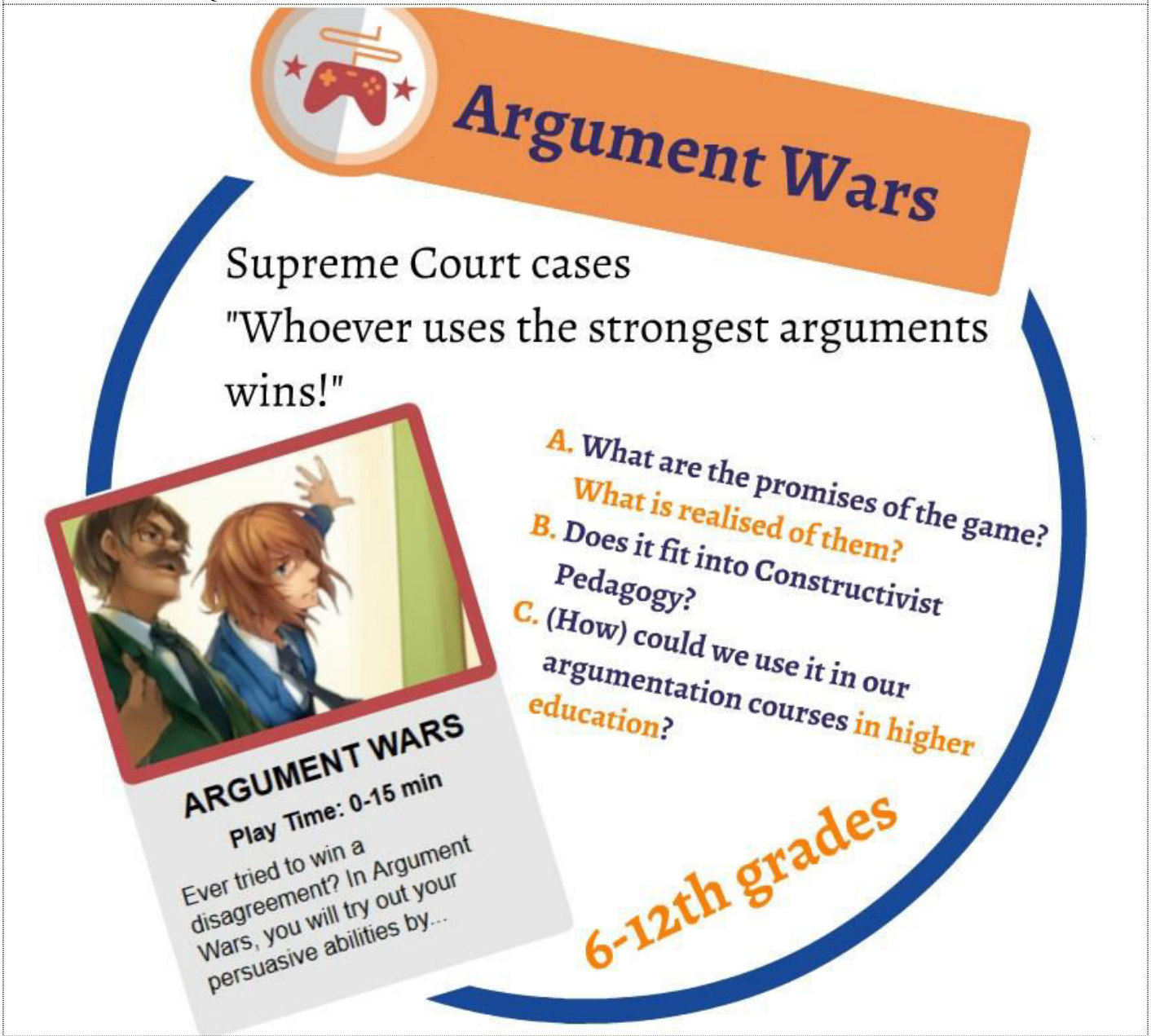
The material is for Middle and High School students and consists of 16 Games, 11 Webquests, 50+ Lesson Plans, 12 Curriculum Units and Impact Projects (Wormeli 2012). The aim of iCivics is to help students understand real-world problems and teach them how to work in individual small groups and also in whole-class learning groups. The program offers free lesson plans and Drafting Board which aim to facilitate students' active participation and collaboration (Help Desk, iCivics, 2010). Having analyzed the materials of the program (e. g. Kozlowsky 2014; Tomaszewski, 2013), we noticed that iCivics does not provide any explicit principal educational methodological background, therefore it is in question what educational method or theoretical background the creator and users of the program are supposed to follow. In our research we also try to find the seemingly hidden methodology.

iCivics' 16 different games include the one we chose to analyze: Argument Wars. Argument Wars is based on nine Supreme Court cases. The player can take one of the chosen cases' standpoints, representing the attorney or the prosecutor. After choosing a standpoint the game begins. The player debates, creating a line of statements that strengthens their standpoint. But the player must choose from a preselected group of statements, they cannot use their own words. Also, there is a "Judge" who decides whether the chosen statement is relevant or not for improving the player's standpoint. (The evaluation of the feedback's quality will appear in Point 2) and 3) below.) After the "Judge's" decision a number of points are divided between the players. Whoever gets more points, wins.

This game was designed for 6-12th grades students. In the game description there is the following sentence: “Whoever uses the strongest arguments wins” (Argument Wars, iCivics, 2010). Argument Wars and its description caught our interest, thus we raised and focused on three important questions.

1) What are the promises of Argument Wars and what is realised of them?
2) Does it fit into Constructivist Pedagogy?
3) (How) could we use it in our Argumentation courses in Higher Education?

FIGURE 1: RESEARCH QUESTIONS ABOUT ARGUMENT WARS



SOURCE: ORIGINAL ILLUSTRATION BASED ON ARGUMENT WARS PRINTSCREEN (ICIVICS, 2010), CREATED BY THE AUTHORS

1) What are the promises of the game and what is realized of them?

We found promises in the game description. iCivics Program says that by playing with Argument Wars, 6-12th grades students (or any other player) will 1. "analyze the arguments and outcomes of landmark Supreme Court cases", 2. "evaluate available support for an argument to assess whether reasoning is sound and support is relevant or irrelevant" and 3. "recognize the significance of the Constitution and Supreme Court precedent in deciding cases" (Argument Wars, iCivics, 2010). Even in this very specific framework created by iCivics for this game, Argument Wars has a couple of flaws. One of its flaws originates from the differences in age, knowledge etc. between 6th and 12th grade students. For a 12th grader playing this game seems easy. A player can walk through this game relying entirely on luck. One can win even without concentrating on the selection process to strengthen one's standpoint, making a decision does not even require reading any of the preselected statement-cards. Therefore, Argument Wars may be less fun and less engaging for a 17-18 years old player who is more educated, thus has a deeper knowledge, or does not have the same level of interest as another student. From this point of view, the game does not fulfil its promises.

Furthermore, in Promise 2 the description says that players will be able to evaluate whether a support for their standpoint is relevant or not. This should be based on the "Judge's" decision – on its feedback. However, there is no explanation for the decisions, so the player cannot learn why their support was right or wrong. (See more evaluation of feedback in Point 3))

The applicability of this game to our Higher Education Argument courses is questionable, and needs further consideration.

FIGURE 2: PROMISES OF THE GAME

Source: Original illustration based on Argument Wars PrintScreen (iCivics, 2010), created by the authors

2) Does it fit into Constructivist Pedagogy?

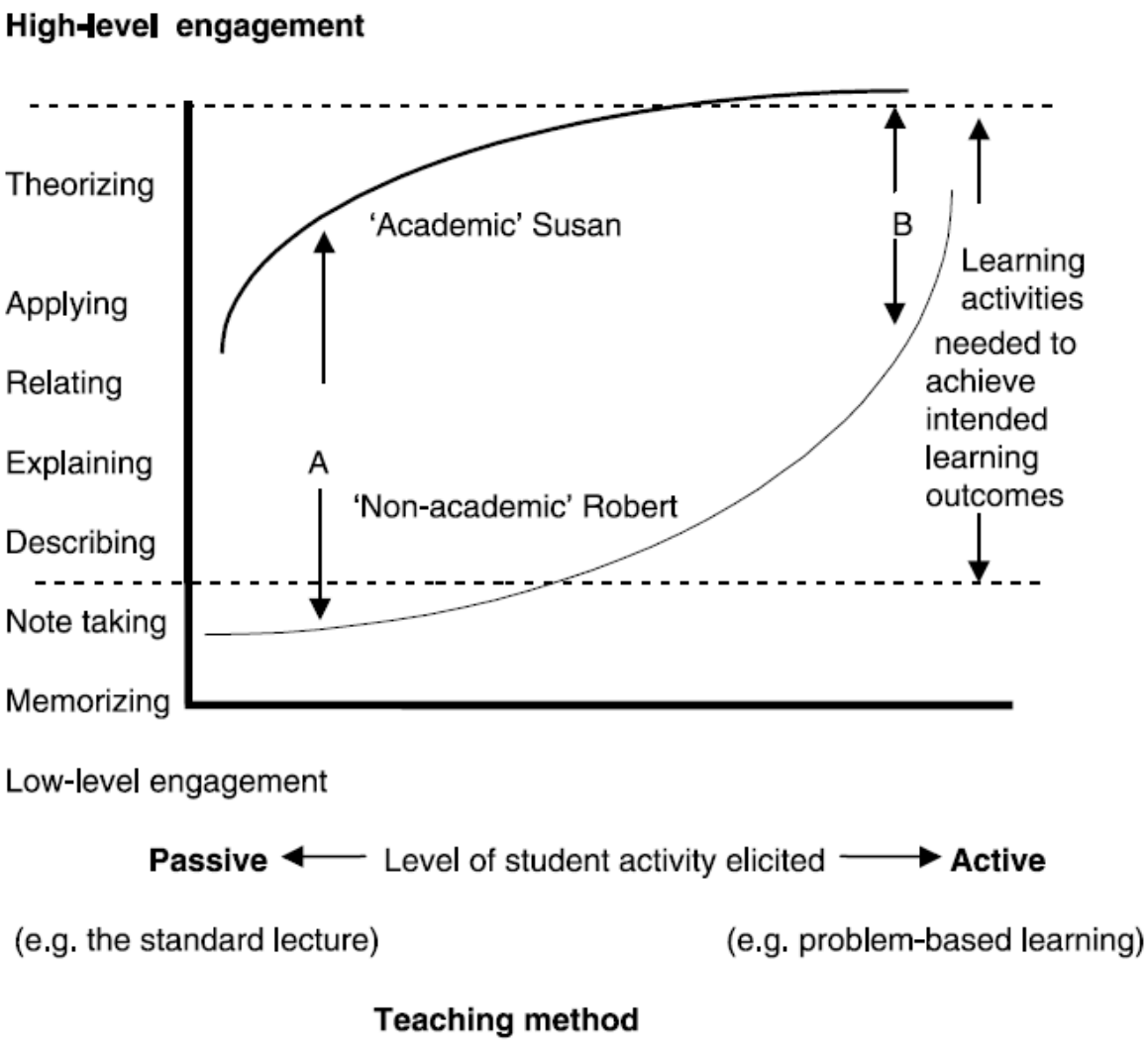
The frame what we use in our study is a constructivist teaching and learning model. What we mean by constructivism is a social constructivism shifting towards gamification, in which the role of social context and interaction are significant. What are especially important for us from this model are the different kinds of alternative teaching tools, based on collaboration and cooperation. „It was traditionally regarded – and it is prevalent today in many places – a learning method, if the student memorize or practise and exercise”

(Nahalka 2014, 40). From the turnouts of the different kinds of alternative pedagogies those activities that turn up in everyday life has arisen in education and become a process of learning (Nahalka 2014). This process also takes place in the 21th Century. A richer activity system helps education. The essence of this model is that the students construct their knowledge together with the teacher (Nahalka 2014). The gathering knowledge is permitted during social activity (Kárpáti 2008). For us, games are alternative tools, which help education and which we can use in teaching Argumentation to students with different needs, interests and background knowledge.

If we intend to understand the motivation of students and also what is important for them, we need to find a categorization for students by their purposes. Based on Biggs' and Tang's categorization we can distinguish two kinds of students. The student who is *academically committed*, has clear plans and aims. She is interested in what she studies and it is important for her: she constantly reflects on the teaching material; she comes to the lecture with relevant background knowledge and questions (Biggs and Tang 2007, 9). These play important role in the construction of her knowledge. „In either event, she reflects on the personal significance of what she is learning" (Biggs and Tang 2007). Students like her „virtually teach themselves; they typically do not need much help from us" (Biggs and Tang 2007, 9). In this case the emphasis is on her acquired and applied knowledge. The teacher can use different teaching methods because the success of the student stems primarily from the latter's motivation. Another type of student applies the 'surface' approach (Biggs and Tang 2007). „She is at university not out of a driving curiosity about a particular subject or a burning ambition to excel in a particular profession, but to obtain a qualification for a decent job" (Biggs and Tang 2007: 9). She is less committed and motivated; the relevant background knowledge and the related questions are less important for her; her learning strategies are limited to apply 'surface' approach or memorizing. She „wants only to put in sufficient effort to pass" (Biggs and Tang 2007, 9). In this case the student's knowledge is usually superficial. Because of this, we need teaching methods and tools which help to understand the learning material and deepen student' knowledge. Methods applicable for the academically committed students – e. g. a passive teaching method – will be not successful in this case because of the low level or lack of interest and commitment. The challenge we face as teachers is motivating these students (Biggs and Tang 2007).

"Is active learning more effective?" (Wingfield and Black 2005, 120).The table of Biggs and Tang (2007, 10) demonstrates the differences in student types and the learning activities in the active and passive teaching methods as well. As Biggs and Tang point out (2007: 10), the differences between students are reduced if we use an active teaching method. According to Biggs and Tang, "this is one example of constructive alignment in teaching" (2007, 10).

FIGURE 3: STUDENT ORIENTATION, TEACHING METHOD AND LEVEL OF ENGAGEMENT



SOURCE: BIGGS AND TANG, 2007: 10.

We think that the gap between students could be reduced by using different kinds of games. By a gap we mean what turns up with applying the active and passive teaching methods to students.The whole model and process can be incorporated into the gamification of teaching Argumentation, if we consider it as an active method, which is developed jointly by the teacher and the students. First we focused on the main points of the Constructivist perspective from a gamification point of view. The criteria that should be fulfilled in order to achieve the aim of the game are deeper understanding the learning materials, transferring knowledge etc. It is important to mention that games appear as learning tools rather than some activities simply for passing the time.

In our study we applied critical analysis from a constructivist point of view to the Argument Wars game. Our criticism focused on the already mentioned features by Meier:

1. Be related directly to the workplace.
2. Teach people how to think, access in information, react, understand, grow, and create real-world value for themselves and their organization on a continuing basis.
3. Be as enjoyable and engaging as possible without striking people as being silly or superficial.
4. Allow for collaboration among learners.
5. Be challenging, but not to the point of frustration and disconnect.
6. Permit ample time for reflection, feedback, dialog, and integration.

(Meier, 2000, 148)

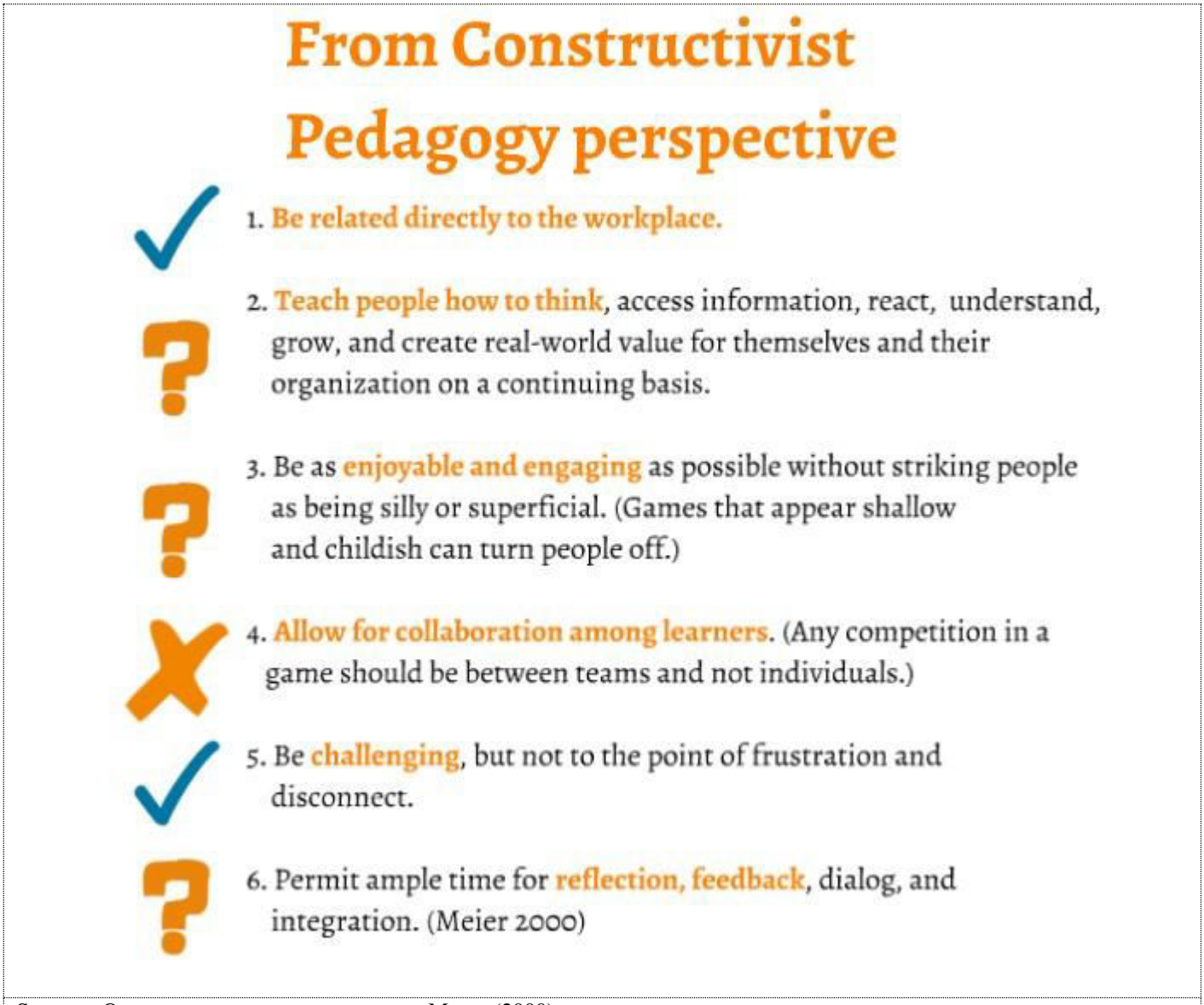
What we have found are issues regarding points 2, 3, 4 and 6. In the first instance, playing Argument Wars does not require thinking and understanding. Whether the student focuses on solving the case by thoroughly considering her options or just playing by clicking aimlessly, the same result can be achieved. After the game from the result the teacher would not be able to figure out which the case was. Furthermore, it does not help to develop student' skills.

The second issue was already discussed in Point 1). Differences in the age of students can influence the effectiveness of the game: "the right game for the right audience at the right time can make learning fun and interesting, can provide a helpful review that strengthens the learning, and can even act as a kind of a test and measure of learning" (Meier 2000: 148), but the reverse can also be said: a wrongly chosen game for a wrongly chosen audience at the wrong time can make learning boring and uninteresting.

Concerning the next criteria, it seems that there is only limited interaction and cooperation while students are playing the game. The students interact with the computer, rather than each other. It means there is no collaboration among the learners.

The last criticism focuses on feedback. The feedback items are not completely satisfying. They are not for improvement, as they do not tell us why our arguments or moves are good or wrong (see further explanation in Point 3).

FIGURE 4: ARGUMENT WARS FROM THE CONSTRUCTIVIST VIEWPOINT



SOURCE: ORIGINAL ILLUSTRATION BASED ON MEIER (2000), CREATED BY THE AUTHORS

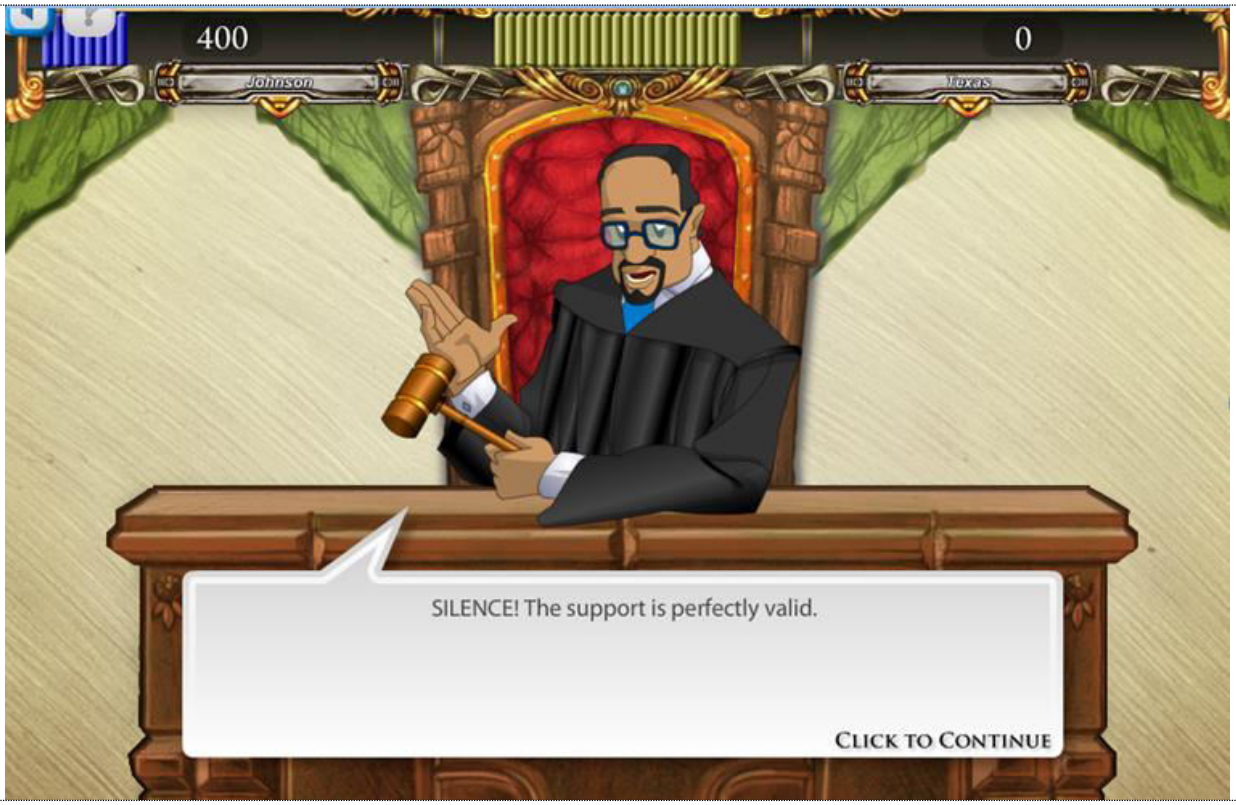
3) (How) could we use it in our Argumentation courses in Higher Education?

The third question concerns with Higher Education. We were curious whether iCivics could be an effective teaching tool for Higher Educational purposes. After the analysis, we unfortunately realized that Argument Wars could be a good game in the level of 6-12th grades, but in a BA or MA program it is not enough for fulfilling our goals. First of all, this game is about legal debates only – with two lawyers and a "Judge" – which is appropriate for knowing, analyzing and practicing argumentation methods, but in a wider perspective it is not the best debate type for learning argumentative skills. In an asymmetric debate where a theoretically neutral third party decides on whether an argument is good or bad and the debaters

do not have the chance to question him but they just have to accept his decision, persuasive techniques may often be more important and effective than the abilities of rational argumentative skills. But in the Argumentation courses our aim is to train rational argumentative skills based on ancient Greek debate traditions and modern Argumentation Studies and not just teach persuasion techniques or – as can be seen in what will follow – how to accept forensic opinion and obey to them without questions. Of course, in a democracy it is necessary to know these mechanisms but there are more debate types – rational argument, dispute, quarrel and negotiation – that are more frequent in everyday life. Thus, Argument Wars is not enough to fulfil the aim of preparing students for taking part in some important types of debates.

The second problem with the game follows from the above, namely the possibility and the style of feedback. Argument Wars usually gives feedback during the game but these assessments are authoritarian and sometimes straightforwardly harsh. When a student presents her argument, the "Judge" evaluates whether it is acceptable or not. But he does not give a detailed explanation, does not analyze any of the arguments and if he finds an argument wrong, he just rejects it and does not help the student to understand the mistake in her argument. The "Judge" usually select from the same given sets of answers which are not very well developed (see Figure 5). Of course, we know, that in real life judges just decide and do not explain their every hidden arguments, but this is an educational game. This means that it should give explanation and comments to students in order to develop their argumentative skills. Moreover, in real life not children but lawyers face the judge in a trial who are well-educated to understand the judge's decisions without further explanation.

FIGURE5: EXAMPLE FOR THE REACTIONS OF THE "JUDGE"



SOURCE: PRINTSCREEN FROM ARGUMENT WARS (ICIVICS, 2010)

Because of the debate type, the student does not have the possibility to argue with the "Judge". The "Judge" often punishes the player with rebuke, verbal violence and point reduction for her opinion (see Figure 6).

FIGURE 6: EXAMPLE FOR VERBAL VIOLENCE USED BY THE "JUDGE"

SOURCE: PRINTSCREEN FROM ARGUMENT WARS (ICIVICS, 2010)

Thus, literally there is no real argumentation between the players. Instead of developing argumentation skills via developing an intelligent argument, children only learn how to be silent and how to accept the opinion of others without the possibility of thinking critically. In our opinion, this method of feedback is not helpful and not acceptable in the framework of Argument Wars and our Higher Educational practice either. De-emphasize the possibilities of a real debate with repelling almost every contradictory opinion with constant violence is not a right method of developing one's argumentation skills, especially of children's. To sum up, in this present form Argument Wars is not able to play an effective and helpful role in our courses.

Conclusion

After discussing the three questions above in details, we should revise the aims mentioned in the Introduction section. We intend to train well-prepared debaters and critical thinkers on Higher Educational level. The knowledge to be acquired should be immediately usable in any real-life situations. This was the main reason to start the project and research described above.

In order to achieve these goals, we had to decide on a methodology. This research was conducted from a Constructivist Pedagogy point of view. The reason we chose Constructivist Pedagogy is that in

Constructivism, gamification can be involved. Gamification is a key element for our aims, because we think that by playing games during classes helps students to deepen their freshly acquired knowledge. Although we have a set of non-online games that we use during courses, we are still short on online games.

We have found Argument Wars and its framework program, iCivics while looking for online argumentation games. It caught our interest and we decided to critically analyze this game on the supposition that their game Argument Wars might be applicable for university Argumentation courses. During the analysis three pivotal questions arose:

1) What are the promises of Argument Wars and what is realized of them?
2) Does it fit into Constructivist Pedagogy?
3) (How) could we use it in our Argumentation courses in Higher Education?

After analyzing Argument Wars with respect to these questions, we found that the game is not able to fulfil our aims. Argument Wars does not even work well in its highly limited frameworks. The game could be boring and unengaging for older players (see Point 1). We also could not reconstruct any theoretical background on which iCivics based the popularity of its program. We also investigated whether Argument Wars is compatible with a Constructivist Pedagogy model and concluded that it still has flaws and shortcomings (see Point 2)). Finally, we reviewed the possibilities of an inclusion of this game in Higher Educational Argumentation courses, and arrived to the conclusion that Argument Wars needs improvements if we want to use it for our purposes at the university (see Point 3).

Still, future further research is required. There are three ways to conduct research: first, we need to analyze other iCivics games and additional materials (Lesson Plans, Drafting Board etc). Second, the absence of the iCivics Program's theoretical background is confusing and it complicates the analysis, therefore we should fill this absence. At last, in order to create a more applicable game for Higher Educational purposes we should suggest some changes, e.g. more debate types. In conclusion, iCivics is a promising subject with exciting and wide range of possibilities for future researches.

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STUDENTS

COLLEGE STUDENTS' MOTIVATIONS FOR SIGNING UP FOR E-LEARNING COURSES

PÉTER KRISTÓF NAGY

Tokaji Ferenc Secondary School, Hungary

e-mail: nagypkristof@gmail.com

Key words: motivation, higher education, internet, e-learning

Abstract: The knowledge-based information society, which college students may increasingly be regarded as citizens of, assumes such a new approach of an educational paradigm, where the rigid structures of the traditional education system can be personalized at a greater extent according to the students' needs. (Kőfalvi, 2006) Under this paradigm shift the learning process must gradually be placed at the forefront of the conventional teaching methods. (Kovács, 2007) In our days knowledge is differentiating at such an extraordinary pace that it seems to be impossible to acquire through classical educational methods. (Benedek, 2013) E-learning may represent a kind of response to this. The aim of e-learning is exactly the same as that of traditional education, but to achieve it, e-learning utilizes an electronic instrument system, in a narrower sense computers or computer networks. (Geist, Kaszai & Nagy, 2005) In Hungary many higher education institutions use an e-learning system for some of their courses. However, the number of undergraduate degree programs that can be absolved entirely through e-learning is relatively low. Out of all of the undergraduate degree programs starting in February 2015 in Hungary only six higher education institutions offer altogether twenty BA/BSc programs that can be achieved in such a form of education.

Research

In this paper we seek the answer to the questions who sign up for the courses - achievable online - offered by higher education institutions to traditional full-time students, and what motivates them for participation. The research was conducted among the students of the College of Nyíregyháza (Hungary), since they have the opportunity to choose from a variety of online courses announced in the Moodle-based Virtual Campus (now known as the E-Learning Portal) of the College of Nyíregyháza (available at http://moodle.nyf.hu).

Population, sampling, data collection methods

We considered the second-year full-time students (N=2,272) of the College of Nyíregyháza in the 2010-2011 academic year a population. The sampling frame was the set of courses offered for the second-year full-time BA/BSc students in the second semester of the 2010-2011 academic year. The list of the courses was retrieved from the registrars department of the College of Nyíregyháza. In the given semester 597 courses were offered for the second-year full-time students. Out of these 597 courses we selected one course for each major, the one with the most enrolled students. Out of the remaining 40 courses we selected 15 using a probability method based on the weighted data of the numbers of the enrolled students. So the college sample is representative to the population of the second-year full-time students of the College of Nyíregyháza in the 2010-2011 academic year.

The survey of the college students was conducted with a paper-based questionnaire. A paper-based questionnaire was preferred over an electronic one, because previous experience had shown that students' willingness to respond to the completely voluntary and anonymous questionnaire was significantly higher in the presence of their professors.

A total of 631 students took the 15 selected courses at the college. The survey of the second-year college students took place during the second semester of the 2010-2011 academic year in April at the lectures and seminars scheduled in their timetable. Due to the significant number of absentees only 362 college students filled out our questionnaire. 348 assessable questionnaire responses were entered our SPSS database.

Results

Nearly one-third (101 students – 29.1%) of the college students have already taken up e-learning courses during their studies. Students have an opportunity to do so in the Virtual Campus of the College of Nyíregyháza.

TABLE 1: HAVE THE STUDENTS TAKEN UP E-LEARNING COURSES YET?

		N	%
Valid	No	246	70,9
	Yes	101	29,1
	Total	347	100
Missing	99	1	
Total		348	

More than two-thirds of the students (68.3%) must have had positive experiences with the e-learning courses offered by the College of Nyíregyháza, because they would like to go on absolving courses online during their further studies. One-third of them are probably disappointed, because they no longer wish to enroll in courses announced in the Virtual Campus. Nearly one-third (29.5%) of the students who has never taken e-learning courses are looking forward to do so in the future.

TABLE 2: STUDENTS' INTENTION OF TAKING E-LEARNING COURSES IN THE FUTURE WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Wish to enroll in e-learning course(s) in the future		
		No	Yes	Total
Already had e-learning course(s)	No	172	72	244
		70,50%	29,50%	100,00%
	Yes	32	69	101
		31,70%	68,30%	100,00%
Total		204	141	345
		59,10%	40,90%	100,00%
sig = 0,000				

We have been interested whether or not the academic average of the students who have already signed up for e-learning courses is better than that of those who have never participated in such courses, but the analysis of variance has revealed no significant differences.

TABLE 3: STUDENTS' ACADEMIC AVERAGE WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

Already had e-learning course(s)	N	Academic average	Minimum	Maximum
No	241	3,75	2,00	5,00
Yes	99	3,89	2,49	5,00
Total	340	3,79	2,00	5,00
sig = 0,072				

No difference has been detected between the academic averages of the students wishing or not wishing to enroll in e-learning courses later on, either.

TABLE 4: STUDENTS' ACADEMIC AVERAGES WITH REGARDS TO THE FACT WHETHER OR NOT THEY WISH TO TAKE UP ONLINE COURSES DURING THEIR FURTHER STUDIES

Wish to enroll in e-learning course(s) in the future	N	Academic average	Minimum	Maximum
No	201	3,81	2,00	5,00
Yes	137	3,78	2,39	4,94
Total	338	3,80	2,00	5,00
sig = 0,740				

There is no difference between the proportions of the genders among the students who have already enrolled in e-learning courses. Considering the number of students, more women take part in online courses, since their proportion at the college is also higher.

TABLE 5: DIFFERENCES BETWEEN THE GENDERS WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Already had e-learning course(s)		
		No	Yes	Total
Gender	Female	136	59	195
		69,70%	30,30%	100,00%
	Male	110	42	152
		72,40%	27,60%	100,00%
Total		246	101	347
		70,90%	29,10%	100,00%
sig = 0,593				

No significant difference can be observed between the preferences for e-learning of the students coming from different types of settlements, either.

TABLE 6: DIFFERENCES BETWEEN STUDENTS COMING FROM DIFFERENT TYPES OF SETTLEMENTS WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Already had e-learning course(s)		
		No	Yes	Total
Type of settlement	Capital	3	0	3
		100,00%	0,00%	100,00%
	City	65	27	92
		70,70%	29,30%	100,00%
	Town	101	35	136
		74,30%	25,70%	100,00%
	Village	76	39	115
		66,10%	33,90%	100,00%
	Other	1	0	1
		100,00%	0,00%	100,00%
Total		246	101	347
		70,90%	29,10%	100,00%
sig = 0,451				

No statistically significant difference can be perceived in the affection for e-learning of students with regards to the educational level of their parents (mother).

TABLE 7: DIFFERENCES BETWEEN THE MOTHER'S HIGHEST EDUCATIONAL LEVEL WITH REGARDS TO THE FACT WHETHER OR NOT THE STUDENTS HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Already had e-learning course(s)		
		No	Yes	Total
Mother's level of education	Less than 8 elementary school classes	1	3	4
		25,00%	75,00%	100,00%
	Elementary school	14	6	20
		70,00%	30,00%	100,00%
	Vocational school	49	21	70
		70,00%	30,00%	100,00%
	Vocational school with GCSE	32	15	47
		68,10%	31,90%	100,00%
	Secondary grammar school with GCSE	64	25	89
		71,90%	28,10%	100,00%
	Higher level vocational training	17	9	26
		65,40%	34,60%	100,00%
	College degree	45	16	61
		73,80%	26,20%	100,00%
	University degree	23	5	28
		82,10%	17,90%	100,00%
	Academic qualification	1	1	2
		50,00%	50,00%	100,00%
Total		246	101	347
		70,90%	29,10%	100,00%
sig = 0,525				

When examining the financial situation of the students we see that students coming from families that are below average in that respect are slightly less likely to enroll in online courses, but this difference is also not significant.

TABLE 8: DIFFERENCES BETWEEN STUDENTS COMING FROM FAMILIES WITH VARIOUS FINANCIAL SITUATIONS WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Already had e-learning course(s)		
		No	Yes	Total
Financial situation	Below average	117	41	158
		74,10%	25,90%	100,00%
	Average	81	39	120
		67,50%	32,50%	100,00%
	Above average	48	21	69
		69,60%	30,40%	100,00%
Total		246	101	347
		70,90%	29,10%	100,00%
sig = 0,474				

There is no difference between the students having or not having a language certificate with respect to the fact whether or not they have already taken up online courses during their studies.

TABLE 9: DIFFERENCES BETWEEN STUDENTS HAVING OR NOT HAVING A LANGUAGE CERTIFICATE WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Already had e-learning course(s)		
		No	Yes	Total
Do they have a language certificate?	No	148	63	211
		70,10%	29,90%	100,00%
	Yes	98	38	136
		72,10%	27,90%	100,00%
Total		246	101	347
		70,90%	29,10%	100,00%
sig = 0,701				

We have assumed that the fact whether or not students have a laptop, notebook, or netbook will affect their attraction to e-learning, and in the cross-table analysis we have thought to recognize this difference in favor of the students who have such devices, however, the Chi^2-test has not indicated a significant difference in this case, either.

TABLE 10: DIFFERENCES BETWEEN STUDENTS HAVING OR NOT HAVING A PORTABLE COMPUTER WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Already had e-learning course(s)		
		No	Yes	Total
Do the students have a portable computer (laptop, notebook, netbook)?	No	101	32	133
		75,90%	24,10%	100,00%
	Yes	145	69	214
		67,80%	32,20%	100,00%
Total		246	101	347
		70,90%	29,10%	100,00%
sig = 0,103				

Based on our preliminary expectation we have thought that students who have used the internet for a longer period of time than the others will be more likely to participate in online courses. Analysis of variance has determined that students who have never enrolled in e-learning courses started to use the internet 0.6 years later than those who have already taken part in such courses, but this difference is not statistically significant.

TABLE 11: DIFFERENCES BETWEEN STUDENTS HAVING OR NOT HAVING PARTICIPATED IN ONLINE COURSES WITH REGARDS TO THE AGE AT WHICH THEY STARTED TO USE THE INTERNET

Already had e-learning course(s)	N	Average age	Minimum	Maximum
No	240	15,25	8,00	25,00
Yes	100	14,64	9,00	20,00
Total	340	15,07	8,00	25,00
sig = 0,71				

We have asked the students what preliminary expectations they had or would have before enrolling in their first e-learning course. There was no difference between the students who have and who have not participated in such a course. More than half of both groups thought they would learn as much at the online courses as they would at the traditional ones. A little more than a third of the students in each group believed that they would study less at the e-learning courses than they would in the classroom ones. Slightly more than 10% of the students in both groups expected that they would acquire more knowledge taking the electronic course than enrolling in the classic one.

TABLE 12: DIFFERENCES BETWEEN STUDENTS HAVING OR NOT HAVING PARTICIPATED IN ONLINE COURSES WITH REGARDS TO THEIR PRELIMINARY EXPECTATIONS ABOUT ONLINE COURSES

		Preliminary expectations about e-learning			
		They will learn more at the online courses than at the traditional ones	They will learn less at the online courses than at the traditional ones	They will learn as much at the online courses as at the traditional ones	Total
Already had e-learning course(s)	No	23	79	118	220
		10,50%	35,90%	53,60%	100,00%
	Yes	13	34	54	101
		12,90%	33,70%	53,50%	100,00%
Total		36	113	172	321
		11,20%	35,20%	53,60%	100,00%
sig = 0,795					

Interestingly, students with the highest academic averages expected to learn less from the online courses than from the traditional ones, and students with the lowest results had the highest expectations about e-learning courses. However, the differences between the average academic results are not statistically significant here, either.

TABLE 13: DIFFERENCES BETWEEN STUDENTS' ACADEMIC AVERAGES WITH REGARDS TO THEIR PRELIMINARY EXPECTATIONS ABOUT ONLINE COURSES

Preliminary expectations about e-learning	N	Academic average	Minimum	Maximum
They will learn more at the online courses than at the traditional ones	34	3,70	2,70	5,00
They will learn less at the online courses than at the traditional ones	111	3,87	2,00	5,00
They will learn as much at the online courses as at the traditional ones	170	3,76	2,00	5,00
Total	315	3,79	2,00	5,00
sig = 0,240				

Based on our other question inquiring about students' preliminary expectations about e-learning statistically significant differences have been discovered between students having already taken and not having taken online courses. Among students having already enrolled in electronic courses in the past there have been many more students who began these courses with the assumption that they would be much easier to absolve than the traditional ones. Fewer students thought that online courses would be more difficult to accomplish than classroom ones. Perhaps these preliminary expectations make the difference for the students between considering the idea of enrollment or actual participation in such courses.

TABLE 14: DIFFERENCES BETWEEN STUDENTS' PRELIMINARY EXPECTATIONS ABOUT E-LEARNING COURSES WITH REGARDS TO THE FACT WHETHER OR NOT THEY HAVE ALREADY TAKEN UP ONLINE COURSES DURING THEIR STUDIES

		Preliminary expectations about e-learning			
		Online courses are more difficult to absolve than traditional ones	Online courses are easier to absolve than traditional ones	Online and traditional courses can be absolved with the same ease/difficulty	Total
Already had e-learning course(s)	No	27	108	84	219
		12,30%	49,30%	38,40%	100,00%
	Yes	6	72	23	101
		5,90%	71,30%	22,80%	100,00%
Total		33	180	107	320
		10,30%	56,30%	33,40%	100,00%
sig = 0,001					

If the table is reversed, we can see that 40% (72 people) of the students who believed that e-learning courses would be easier to complete than traditional ones have actually taken up an online course during their studies. Only 21.5% (23 people) of those who believed that the two types of course could be achieved with the same effort have signed up for online courses. The proportion at e-learning courses of those who thought that it was more difficult to fulfill a subject via internet than in a classroom is even smaller (18.2% - 6 people).

TABLE 15: DIFFERENCES BETWEEN STUDENTS HAVING OR NOT HAVING PARTICIPATED IN ONLINE COURSES WITH REGARDS TO THEIR PRELIMINARY EXPECTATIONS ABOUT ONLINE COURSES

		Already had e-learning course(s)		
		No	Yes	Total
Preliminary expectations about e-learning	Online courses are more difficult to absolve than traditional ones	27	6	33
		81,80%	18,20%	100,00%
	Online courses are easier to absolve than traditional ones	108	72	180
		60,00%	40,00%	100,00%
	Online and traditional courses can be absolved with the same ease/difficulty	84	23	107
		78,50%	21,50%	100,00%
Total		219	101	320
		68,40%	31,60%	100,00%
sig = 0,001				

Based on the data we dare to risk the assertion that a significant number of students take up e-learning courses at the Virtual Campus of the College of Nyíregyháza, because they believe that these courses are easier to absolve than the traditional ones.

Students' preliminary expectations are reinforced by the experiences of students who have successfully accomplished online courses. Most of them claim (71 people - 70.3%) that the course they enrolled in has really been easier to fulfill than classroom ones. According to some students (23 people - 22.8%) there is

no difference between the difficulties of the two types of course, and very few (7 people - 6.9%) state that completing the online course has caused them greater difficulties.

TABLE 16: STUDENTS' EXPERIENCES ABOUT THE DIFFICULTIES OF FEASIBILITY OF ONLINE COURSES

		N	%	Valid %
Valid	Online courses are more difficult to absolve than traditional ones	7	2,0	6,9
	Online courses are easier to absolve than traditional ones	71	20,4	70,3
	Online and traditional courses can be absolved with the same ease/difficulty	23	6,6	22,8
	Total	101	29	100
Missing	77	245	70,4	
	99	2	0,6	
	Total	247	71	
Total		348	100	

The expectation of students that they would learn as much from e-learning courses as from traditional ones has been proven, because nearly half of the students (50 people - 49.5%) found so (and for this colleagues creating the learning contents must be acknowledged). Nearly 40% of the students (40 - 39.6%) are disappointed, because they acquired less knowledge during the acquisition of online courses than they would have in the classroom. 10.9% of the college students (11 people) are happy, because they have absolved more from the internet courses than from the classic ones.

TABLE 17: STUDENTS' EXPERIENCES ABOUT THE CONTENT OF ONLINE COURSES

		N	%	Valid %
Valid	They learned more at the online courses than at the traditional ones	11	3,2	10,9
	They learned less at the online courses than at the traditional ones	40	11,5	39,6
	They learned as much at the online courses as at the traditional ones	50	14,4	49,5
	Total	101	29	100
Missing	77	245	70,4	
	99	2	0,6	
	Total	247	71	
Total		348	100	

We have noticed that the higher the students' academic average was, the more likely they felt that online courses provided them with less knowledge than the traditional ones. However, this difference is not statistically significant, either.

TABLE 18: CONNECTIONS BETWEEN THE ACADEMIC AVERAGES OF STUDENTS HAVING ALREADY PARTICIPATED IN ONLINE COURSES AND THE CONTENTS OF SUCH COURSES

	N	Academic average	Minimum	Maximum
They learned more at the online courses than at the traditional ones	10	3,67	2,70	4,30
They learned less at the online courses than at the traditional ones	38	4,04	2,81	5,00
They learned as much at the online courses as at the traditional ones	49	3,83	2,49	4,90
Total	97	3,90	2,49	5,00
sig = 0,112				

With the help of variance analysis we have determined that the college students who have already enrolled in online courses put 1 hour and 13 minutes less time on a weekly basis in their studies during the study period of the semester than those who have never taken part in such courses. This difference is also not statistically significant.

TABLE 19: DIFFERENCES BETWEEN STUDENTS HAVING OR NOT HAVING PARTICIPATED IN ONLINE COURSES WITH REGARDS TO THE AMOUNT OF TIME THEY SPEND ON PREPARING FOR THEIR CLASSES DURING THE SEMESTER

Aready ad e-learning course(s)	N	Hours spent on studying	Minimum	Maximum
No	230	9,07391	0	48
Yes	98	7,85714	0	30
Total	328	8,71037	0	48
sig = 0,241				

Conclusion

We have found no statistically significant difference between the students who have or have not signed up for online courses either in their learning outcomes, the type of their residence settlement, the highest education level of their parents, the financial situation of their family, or whether or not they possess a portable computer. College students' affection toward online courses has not been influenced by the period of time they have used the internet regularly, either. The largest number of students who have participated in online courses have done so because they thought that e-learning courses would be easier to absolve than the traditional classroom subjects. We have only observed significant differences among the college students only in this particular question.

The responses of the students to our questions suggest that the participation in e-learning courses is exclusively motivated by the assumption that these courses are easier to absolve, need less energy and time investment to achieve. Our research results are representative to the second-year full-time students of the College of Nyíregyháza in the 2010-2011 academic year. If we assume that similar students participate in the given year at each of the grades of the undergraduate programs, then our conclusions can be applied to

all of the full-time students enrolled in the undergraduate programs offered by the College of Nyíregyháza. If we continue this line of thought and we accept that all of the students enrolled in the rural colleges of the country are similar, then we can understand why there are only 20 entirely e-learning based undergraduate programs in the whole country.

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STUDENTS' PERCEPTIONS ON E-LEARNING WITH LEARNING MANAGEMENT SYSTEMS IN ENGLISH LANGUAGE COURSES. A QUALITATIVE SURVEY

JANA PUSCHENREITEROVÁ

Faculty of Education, Constantine the philosopher University in Nitra, Slovakia

E-mail: jana.puschenreiterova@ukf.sk

Key words: qualitative survey, e-learning, English Lexicology course, blended learning, LMS (Learning Management System) Moodle

Abstract: The use of LMS (Learning Management System) in language education has an enormous potential that should be taken advantage of. Such systems provide different types of activities and modules that can be very effective when used appropriately. A very important potential of such LMS is time and place flexibility which can increase the motivation to learn languages anytime and anywhere. There are many other potentials, but also drawbacks of the use of Learning Management Systems. The present paper deals with the tertiary students' views and opinions on the e-learning part of the course in English Lexicology, created in LMS Moodle environment at Constantine the Philosopher University in Nitra. The course is taught as a blended learning course, which is most often understood as a combination of face to face and e-learning education. The e-learning part of the course was created in 2008 and needs to be updated in line with the current technological and language requirements. Therefore, the main focus of the present paper is to find out the diversity of views of students on the e-learning English Lexicology course. As for the research method, the qualitative questionnaire survey was employed, because it is an effective method to investigate perceptions and attitudes to different phenomena. The results of the qualitative survey will further serve for updating the e-learning course in English Lexicology and for further research purposes of the author of the present paper.

Introduction

A very significant development within the use of information technologies in the last decade has been the adoption of various Learning Management Systems (henceforth referred as LMS) to enhance and support learning and teaching process (Coates, James, and Baldwin 2005, 19). LMS is an integrated suite of software tools that manages e-learning[1], i.e. it provides online learning content and activities, and furthermore, it facilitates online assessment (Hatzipanagos, Warbuton 2009, 355). Therefore, it can be claimed that LMS enhances e-learning, which can be characterized as the use of the Internet and new multimedia technologies in order to improve the quality of learning and teaching by facilitating the access to resources and services as well as remote collaboration and exchange. When using e-learning in foreign language education, a learner can be exposed to real and authentic language situations, which provide interaction among learners, and motivate students (Malá 2003, 2-3). It is necessary to stress the fact that e-learning courses created via various LMSs do not substitute a teacher but just imitate some features of teacher's work, i.e. when presenting study materials, doing exercises, or analysing and correcting mistakes (Malá 2011 132). It is also important to mention the fact that e-learning has also its drawbacks. Hašková (2004, in Veselá 2009, 18) stresses the fact that the assumption that e-learning has no drawbacks is not appropriate. Both, the teacher and the learners have to be aware of the general pitfalls of the e-learning, such as slow connection to the Internet, lack of equipment, lack of computer skills on sides, teacher and student, and lack of interaction (Al-Dosari 2011; Riasati, Allahyar and Tan, 2012).

[1] We will use the term *e-learning* in this paper as a generic term to refer to LMS and technology supported learning

Due to constant technological developments and changes in curriculum, e-learning nowadays is different in form and use from the e-learning one decade ago. Dašić, Dašić and Šerifi (2012, 312) highlight the most important changes in e-learning from 2000 up to the current understanding of the concept of e-learning.

TABLE 1. THE EVOLUTION FROM E-LEARNING 2000 TO INNOVATIVE E-LEARNING 2010 (Dašić , Dašić and Šerifi, 2012, 312)

E-LEARNING 2000	E-LEARNING 2010
found distributed knowledge	generates new knowledge
more e-tutoring	in possession of a student
students can be isolated	creates a learning community
comes from provider/institution	the tool to support partnership
ignores the context of students' prior knowledge	builds on students' prior knowledge and context
suppresses students' creativity	stimulates students' creativity and strengthening the spontaneous dimension of learning
pushes the roles of the teacher and trainees	enriches the role and trainees
focuses on technology and content	focuses on quality, process and context of learning
substitutes the sitting in the classroom	embedded in the organizational and social transformation process

Garrison (2011, 2-4) claims that there are two primary applications that constitute the description of the e-learning nowadays. One of such applications is *online learning*, as a form of distant education; and the second application is *blended learning*[1], which is the most prevalent form of e-learning in current higher institutions and its current application corresponds with the description of the e-learning in 2010 from Table 1. Thus, blended learning[2] can be defined as a kind of learning that "(…) combines several different methods such as collaboration software, web-based courses, or knowledge management practice. It is also used to describe learning that mixes various event-based activities, including face-to-face classrooms, live e-learning and self-paced instruction." (Malá 2011, 132) This indicates that blended learning not only offers more choices, but also is more effective than the use of the online learning only. Singh (2003, 51) supports this statement by claiming that "(…) the experience gained from the first-generation of e-learning (...) is giving rise to the realisation that a single mode of instructional delivery may not provide sufficient choices, engagement, social contact, relevance and context needed to facilitate successful learning and performance (…)."

Blended English Lexicology course

The present research seeks to elicit the students' opinions towards the e-learning course on English Lexicology created in LMS Moodle[3,4] at Constantine the Philosopher University in Nitra, in the form described below. Due to the fact that the currently used course on English Lexicology was designed in

[2] Since this study is focused on e-learning in the form of blended learning, the other type of e-learning is disregarded.
[2] For the purpose of the present paper, we will use the term *blended learning* as a generic term to refer to the combination of *e-learning* and face-to-face education (Garrison 2011; Singh 2003)
[3] Moodle – an acronym for Modular Object-Oriented Dynamic Learning Environment (Rice 2008)
[4] "LMS Moodle is a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalised learning environments" (moodle.org, n.d.)

2008 with the characteristics of e-learning 2000 described in the Table 1, it should be updated in line with general changes concerning e-learning from the Table 1 above, and (what is important for the present paper), the perspectives of students' needs concerning the use of LMS Moodle course. The present paper provides partial results of the ongoing research aimed at the blended learning English Lexicology course. One of the outcomes of the research will be the overall re-design of the course "English Lexicology" in LMS Moodle at Constantine the Philosopher University in Nitra[1] in 2016. The point of view of students is of particular importance, since the students are the users of the course and thus, their perceptions should be taken into consideration when re-designing the course.

The subject "English Lexicology" is currently taught as a blended learning course; i.e. one part of each lesson is taught as traditional face-to-face lesson in the classroom and the second part is in the form of e-learning course which provides further materials, resources and activities for students' self-study. As already mentioned above, the e-learning course is the created LMS Moodle used at Constantine the Philosopher University in Nitra, and consists of 15 topics. Each topic provides the following modules (see Picture 1): 1) *Page* - links of Moodle pages where the theory is explained; 2) *URL* - links of various topic-connected webpages (with quizzes, additional information, dictionaries, etc.) on the Internet; 3) *File* - lectures in the form of a Microsoft PowerPoint presentation; 4) *Assignment* - which is supposed to be submitted by students by the deadline set by the teacher; and again *Page* - assignment key, which is usually shown after the submission deadline so that the students can check the correct answer. These are the four most frequently used modules within the current version of the English Lexicology course; however, LMS Moodle offers a wide range of activity and resource modules that could be used, namely: a) Activities*:* 1. A*ssignment*; 2. *Chat*; 3. *Choice*; 4. *Database*; 5. *External tool*; 6. *Feedback*; 7. *Forum*; 8. *Glossary* ; 9. *Lesson*; 10. *Quiz*; 11. *SCORM package*, 12. *Survey*; 13. *Wiki*; 14. *Workshop*; b) Resources*:* 1. *Book*; 2. *File*; 3. *Folder*; 4. *IMS content package;* 5. *Page*, and 6. *URL*[2].

Research objectives

The research objectives were set as follows:

- to find out how tertiary students of the English language formulate their opinions towards the use of e-learning course as a part of English Lexicology blended learning course;

[1]The characteristics of the current version of LMS Moodle from the official website: "The heart of Moodle is courses that contain activities and resources. There are about 20 different types of activities available (forums, glossaries, wikis, assignments, quizzes, choices (polls), SCORM players, databases etc.) and each can be customised quite a lot. The main power of this activity-based model comes in combining the activities into sequences and groups, which can help you guide participants through learning paths. Thus, each activity can build on the outcomes of the previous ones. There are a number of other tools that make it easier to build communities of learners, including blogs, messaging; participant lists etc., as well as useful tools like grading, reports, integration with other systems and so on. For more about Moodle, see http://moodle.org, and particularly the main community "course" called Moodle in English" (moodle.org, n.d.)

[2] For more information about activity and resource modules, see https://moodle.org/

- to investigate how tertiary students of the English language evaluate the use of e-learning course as a part of English Lexicology blended learning course.

Therefore, we set the research questions with regard to the research aims as follows:

RQ1 What are the opinions of tertiary students of English language on the use of e-learning course as a part of English Lexicology blended learning course?

RQ2 How do tertiary students of English language evaluate the use of e-learning course as a part of English Lexicology blended learning course?

RQ3 What are the advantages and disadvantages of the use of e-learning course as a part of English Lexicology blended learning course from the point of view of tertiary students?

Research method and respondents

Qualitative questionnaire survey

In order to achieve research objectives, the method of qualitative survey was selected, since it is a research method that can be effectively used in qualitative studies in various fields of study. As for the language pedagogy and the field of technologies in foreign language education especially, it can be claimed that it is efficient to use this method in order to investigate perceptions and opinions on a number of different phenomena that involve various means of technology that have the potential to enhance teaching/learning a foreign language (Puschenreiterová 2015, 197). Another reason was that "(…) this type of survey does not count people with the same characteristics (value of variable) but it establishes the meaningful variation (relevant dimensions and values) within that population. In short, the qualitative survey is the study of diversity (not distribution) in a population" (Jansen 2010, par.6). The intention of the present qualitative survey was to find out what are the opinions towards disadvantages and potentials of the use of e-learning course created in LMS Moodle and diverse perceptions on the use of e-learning course as a part of blended learning from the point of view of tertiary students; thus, we do not intend to count any frequencies. As for the data collection instrument, the questionnaire was chosen. This tool is appropriate, since it can obtain answers from a wider sample of students than an interview.

Following Brown (2001, 6) "(…) questionnaires are any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers". Questions that are the most suitable for qualitative surveys are those that are open-ended. This statement can be supported by Brown (ibid., 212), who claims that a qualitative survey data analysis is the "(…) process of systematically searching and arranging the answers to open-ended survey questions (in interviews or questionnaires)." It is also important to point to the fact that "Questionnaires are not among the most prominent methods in qualitative research, because they

commonly require subjects to respond to a stimulus, and, thus, they are not acting naturally." (Woods, 2006, n.d.) However, questionnaires still have their uses, especially when a researcher wants to collect information from a wider sample than the one that can be reached by an interview (ibid.). Therefore, a questionnaire (see Appendix B) with open-ended questions was constructed and used to gather data.

The questionnaire consisted of a foreword and 5 open-ended questions; since all of the respondents were second grade teacher trainees of English language and literature, there was no needed background information to take into consideration. The questionnaire was in English language and was available as a pencil-paper questionnaire; students were instructed to fill in all of the questions, however, not all of the students filled in all of the answers. The questionnaire was administered in February 2015, after the students completed the English Lexicology course.

The research sample for the questionnaire survey consisted of 28 students (all of them being the 2nd grade students - teacher trainees of English language and literature) who attended the blended learning course in English Lexicology in the winter semester 2014/2015 at the Department of Language Pedagogy and Intercultural Studies, Constantine the Philosopher University in Nitra, Slovakia.

Data Analysis

For the purposes of the analyses of the data obtained from questionnaires, 4 categories of the data analyses were established according to the questions from the questionnaire, namely: Category 1 *Overall opinions of the students towards the use of e-learning course as a part of English Lexicology blended learning course;* Category 2 *Students' personal evaluation of the English Lexicology e-learning course (Sub-category 2.1 The opinions on help of the use of e-learning course in learning of English Lexicology;* Sub-category 2.2 *Kinds of activities and material that should be added to contemporary version of the e-learning English Lexicology course);* Category 3 *Disadvantages of the use of LMS Moodle e-learning course;* Category 4 *Advantages of the use of LMS Moodle e-learning course.* According to the suggestions of Gavora (2000), the question responses were then arranged into smaller units according to the codes, each of which represented one type of response. Cohen, Manion, and Morrison (2007) define coding as the assignment of categorical labels to pieces of data for the purposes of analysis. In the present study, the category labels (i.e. codes), have been created from the collected data. Tables with codes for each category and subcategory can be found in the Appendices (Tables 2-6), altogether with the examples of responses and number of students, whose response was part of the code. The tables with codes were further used for the description of the data analysis below.

RQ1 What are the perceptions and attitudes of tertiary students of English language on the use of e-learning course as a part of English Lexicology blended learning course?

Category 1 Overall opinions of the students towards the use of e-learning course as a part of English Lexicology blended learning course

Survey question 1 *Did you like the possibility to work with the English Lexicology e-learning course last semester? Why?/Why not?*

All of the students under the study answered the first question. The researched students have generally positive attitudes towards the e-learning part of English Lexicology classes. Moreover, there were no responses with extremely negative attitudes; although there were some students who, on the one hand, presented a positive attitude, being, on the other hand, aware of the possible drawbacks that may occur, such as easy cheating or laziness (e.g. *"I did like it, but people remember more when they write the information down themselves. We copied and pasted the exercises through the semester"*). Generally the students consider the use of the LMS Moodle e-learning course altogether with the activities and resources offered as a new, attractive, unusual and different way of studying (e.g. "*It was [a] refreshing change from all the other classes"; "It was a good experience for me. I would like to have more classes like this"; "It was a new method, which I consider quite interesting and [more] unusual than the other classes"; "It was something different"*). The use of the course taught in the form of blended learning was a new experience for the students, as they mostly declared they liked the possibility to discuss the problems with the teacher during the face-to-face phase, study other resources and work on assignments either at home or anywhere possible - the flexibility in time and place was mentioned very often (e.g. *"For me, it was convenient to learn at home"; "Yes, I liked it, I could work from home"; "It was more comfortable to work at home, school computers are too slow"; "I liked the chance to finish the work at home"*). This kind of studying is very motivational as they enjoyed the activities provided within the course and considered them funny and interesting (e.g. *"The lessons were funny and the teacher was awesome"; "It was interesting and I learned a lot"; "It was more fun…"; "E-learning course made subject more interesting and some parts of it were funny"*). Easy and quick access to information connected with English Lexicology can be seen as another factor of their overall positive attitude towards the e-learning course (e.g. *"I liked that I found any information necessary for the test there"; "….I had quick access to the information.."; "I was able to find different information and materials.*"). Last but not least, the students consider the use of the e-learning course as a time-saving activity (e.g. "*Everything was easier and also saved time"; "It saved time….."; "We saved plenty of time when using it, it is logical"*).To sum up, the students from the research sample support the idea to use the e-learning course within their regular study plan, since they regard it as a proper way to integrate modern technologies they are familiar with from their personal lives with their studies.

RQ2 How do tertiary students of English language evaluate the use of e-learning course as a part of English Lexicology blended learning course?

Category 2 Students' personal evaluation of the English Lexicology e-learning course

Survey question 2 *Do you think the use of e-learning course helped you in your learning of English Lexicology? (If so, how?/ If not, why not?)*

The students were asked if they think that the use of the e-learning course helped them in their endeavours to study English Lexicology and the kinds of activities they might have missed. Only several students evaluated the e-learning course as unnecessary stating that it helped them a little only (e.g. "*In general, no."; "I don't think that it helped me to learn more, because it was an e-learning course. I would have to learn it as if it [had been] an e-learning course"; "It was rather easy and helped me a little only"*). On the other hand, most of the students reported they experienced progress in terms of their English Lexicology studies carried out with the help of the e-learning course. The students perceived the course as a clear, well-organised and logically structured source of necessary information and the resources which made their learning more effective and easier (e.g. *"Yes, especially when looking for new information, numerous webpages related to the topic."; "It was my biggest source of information and it also helped me to look for [other] interesting information on other webpages"; "It helped me absolutely, because I'm still coming back to edu portal to find the information for [other] subjects."; "Yes, I could use sources multiple times"; "Yes, because we had all necessary information at 1 place, so it was easy to study – without any complications."; "Yes, it helped, revision was more organized, everything was at one place – website"*). The nature of the activities and materials provided via the e-learning course helped the students with their successful learning of English Lexicology as well (e.g. "*Yes – via many different activities"; "Yes, I think it did. It was not a classical memoriz[ation] of facts, but rather a form of activity"; "Yes, because it was more practical and interesting to fill in exercises than just read materials"; "Yes, I think so, because the activities were interesting and funny*"). A large number of students stated that they learned plenty of new words and improved their vocabulary, which is essential when studying English Lexicology (or Lexicology in general) (e.g. *"It helped me to learn new words"; "I learned new expressions"; "Yes, it helped me, now I know plenty of new words."; "It helped me a lot, I improved my vocabulary"; "Mainly I learned [a lot] of vocabulary*").

Survey question 3 *What kinds of activities or study materials do you think should be added to the contemporary version of the online course?*

Within their evaluation of the English Lexicology e-learning course, the students were asked to list the types of activities, modules or resources they missed in the course. There were students who did not list any activity; the students who were completely satisfied with the activities and resources offered; and the students, who listed the following activities and resources: quizzes, discussion forums, chats, more video resources, and glossaries.

From the point of view of the students incorporated in the sample, quizzes would be helpful especially when revising newly learned topics (e.g. *"maybe quizzes, because it is easiest and funniest to learn"; "quizzes would be great, I memorize newly learned things better*"). Discussion forums and chats could be beneficial when discussing issues from the assignments they do not understand or any other issues connected with English Lexicology (e.g. *"some kind of discussions, where we would discuss why is something like that"; "I would like to discuss the resources, so some kind of forums or something like that*", *"some chats to exchange information with classmate, well I could use Facebook, but here I would chat about lexicology and not about other personal stuff"*). Video resources could serve as a very attractive way of learning, as they are popular today and students perceive more when they can see and hear than when they read only(e.g. "*more activities with the use of videos"; "videos, because from my experience I know we can learn more*"). As for the glossaries, they could be of help within students' self-study of the topics in English Lexicology (e.g. *"I think glossaries within each lesson would be great"; "glossaries only*").

RQ3 What are the advantages and disadvantages of the use of e-learning course as a part of English Lexicology blended learning course?

Category 3 Disadvantages of the use of LMS Moodle e-learning course

Survey question 4 *What are the major disadvantages that you see in the use of e-learning course (within the English Lexicology course)? Name at least 3 disadvantages (1st is the most important disadvantage,…)*

When discussing the pitfalls of the English Lexicology e-learning course created in LMS Moodle, there were problems with the answers as several students either did not respond to this question, or did not see any drawback. On the other hand, the answers reflected five most frequent pitfalls of the e-learning course:

a) the technology-related issues, such as slow computers or a slow Internet connection (e.g. "*no access to the Internet"; "problems with the Internet"; "slow computers"; "slow PCs"*; *"We would be lost if we lost electricity"; "computers are not very reliable"; "Maybe not everyone has the access to the Internet"; "there are old PCs at school"*); b) lack of computer skills (e.g. *"I am not [a] very technical type of person, so it takes me plenty of time to learn how to use it."; "some people are not technologically skilled"; "maybe people without technological skills would struggle"*) ; c) not enough face-to-face communication and feedback from the teacher (e.g. "*The work [during the] e-learning course is impersonal"; "I usually take lesson less seriously and I don't study like I was in the classroom"; "I don't like that there is less face to face communication with the teacher, because I need [the] feedback immediately"; "No personal feedback on any progress"; "you cannot discuss with the teacher"; "After submitting the assignment, you*

don't go through it with the teacher to check it"); d) easy cheating (e.g. *"lazy students get the answers from the others"; "CTRL+C/CTRL+V problem solving"; "cheating – one does the assignment and the rest of the students jus rewrite it"; "Someone can cheat and never learn anything"; "Teachers should probably prevent cheating somehow, we used to copy the assignments sometimes"; "cheating is really easy"; "We only copied and pasted the exercises throughout the semester"*). e) Last but not least, there is a disadvantage which can be regarded as the drawback of the Internet and not of the e-learning course; it is a problem to look for the proper and right information (e.g. *"there [is] plenty of information on the Internet and sometimes I cannot find what I need, or I don't know which answer is correct"; "The Internet is not always right"*).

Category 4 Advantages of the use of LMS Moodle e-learning course

Survey question 5 *What are the major advantages that you see in the use of the e-learning course (within the English Lexicology course)? Name at least 3 advantages (1st is the most important advantage,...)*

When writing about advantages, the students mostly repeated their answers from the Survey item 1. The most appreciated merits of the e-learning course were: a) everything (i.e. materials, resources, activities) in one place (e.g. "*I loved the possibility to revise materials before exams"; "the advantage of all the information in one place is perfect for me"; "everything is [in] one place and I have the opportunity to check the answers online"; "[all] materials and resources on any topic together – excellent idea*); b) flexibility in time and place (e.g. *I can work at home"; "I like [that] I have an access to the course at home"; "working on the course when it is appropriate for me; "it can be done at home, anytime"; "you can do the activities even when you are abroad*") ; c) the use of the e-learning course recognized as time-saving (e.g. *"it is modern and quick"; "it saves time"; "I like fast evaluation"; "typing is quicker than ordinary handwriting"; "typing is much more quicker, we are used to typ[ing]"*).; d) eco-friendly solution (e.g. *"we don't have to use notebooks – it saves paper"; "it is online (no need [for] paper)"; "you don't need papers, everything is online and I cannot lose it like I lose my stuff"; "[doing] activities without the necessity to print the materials*"); e) e-learning as a motivation to study – because it is a different, simpler and more interesting way of study (e.g. *"This way of learning is easy to understand and not complicated"; "there is enough time to think about the activity – do some research – deeper understanding"; "it is educative in a modern way"; "I like the simplicity of the e-learning course"; "simplicity, and I can pay attention to the most significant things"; "better understanding of current issues via resources"; "I like that it is something different, especially I like the funny and understandable activities*"); f) a way of education permitting to connect everyday reality of the students with their studies (e.g. "*I think it is great we can use the Internet and PCs for study purposes"; "the use of the Internet itself is [an] advantage"; "I*

like it when I can use the Internet for study purposes, I can be on Facebook while working on assignments").

Discussion and conclusions

The research shows that students are eager to use e-learning as a part of their English Lexicology blended learning course, even if it is in the form as described in Table 1 (e-learning 2000). These results correspond with the results of the research of Kavaliauskienė and Valūnas (2012), who found out that e-learning in the form of blended learning is acceptable to many students of English for Specific Purposes (ESP). The use of computer for the studies can be, therefore, seen as a highly motivational factor since computers are integral parts of students' life.

Students were able to provide suggestions on activities that should be added to the contemporary version of the e-learning course. The modules suggested by students, such as discussion forums and chats are in concordance with the innovative conception of e-learning (described in Table 1) since they can create a learning community and can serve as a tool to support partnership. Glossaries that would be created by students would enhance the learner-cantered approach, stimulate students' creativity and also generate new knowledge (Dašić, Dašić and Šerifi 2012, 312).

Lists of disadvantages and advantages of the e-learning correspond with the results of the research on the students' perceptions on e-learning in Iran (Yaghoubi et al., 2008), with the results of a large scale research on the views of students on blended learning in Great Britain (Linsey, Edirisingha, and Heaton-Shresra, 2005) and with the results of the research on perceptions of e-learning from the point of view of English Department members and students in Saudi Arabia (Al-Dosari, 2011). Therefore, the most appreciated advantages were the flexibility in time and place, all necessary materials together in one logical system, and the e-learning course seen as a different, simpler and more interesting way of learning; and the most serious disadvantages, according to the students, were various technology connected problems, the lack of face-to-face communication and the lack of computer skills.

The study provided partial results of the ongoing research on English Lexicology course taught as a blended learning course, and will be used in order to update the course in LMS Moodle with respect to the students' opinions and suggestions.

Acknowledgements

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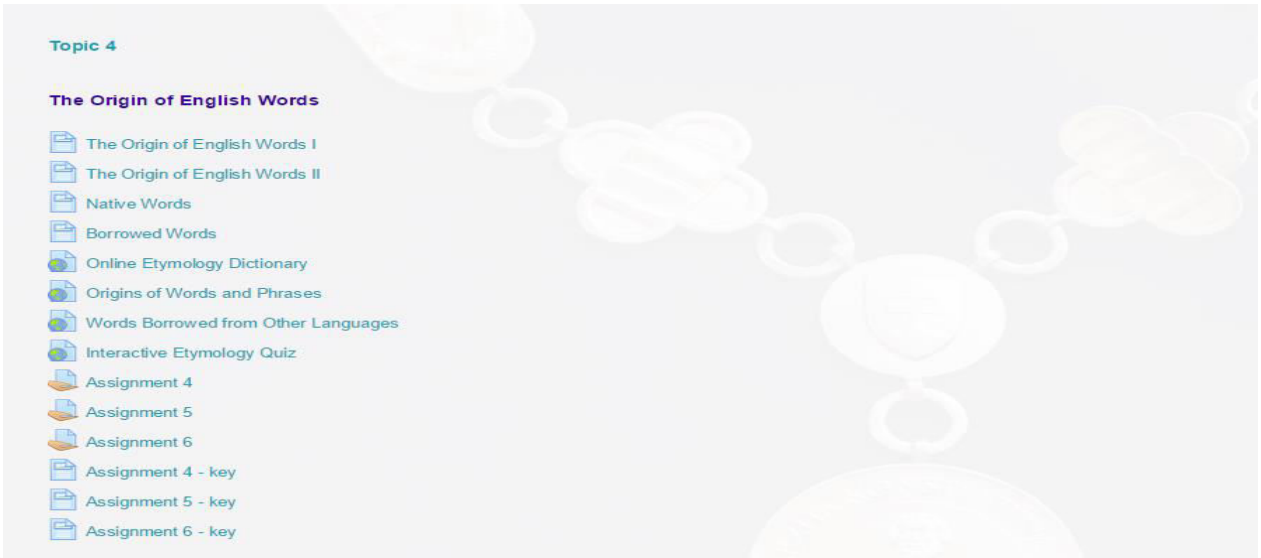
APPENDIX A PICTURES

PICTURE 1. A SCREENSHOT OF A RANDOMLY CHOSEN TOPIC IN LMS MOODLE COURSE IN ENGLISH LEXICOLOGY



APPENDIX B QUESTIONNAIRE

Dear student,
I am a PhD. student at Constantine the Philosopher University in Nitra, Department of Language Pedagogy and Intercultural Studies. I would like to ask you to fill in this questionnaire. The purpose of the questionnaire is to elicit students' perceptions on English Lexicology e-learning course you worked with in winter semester.

The questionnaire is anonymous and it will be used for the research purposes only.

1. Did you like the possibility to work with the English Lexicology e-learning course last semester? Why?/Why not?
2. Do you think the use of e-learning course helped you in your learning of English Lexicology? (If so, how? / If not, why not
3. What kinds of activities or study materials do you think should be added to the contemporary version of the online course (e.g. discussion forums, chats, videos, glossaries, quizzes, etc.)? Why?

4. What are the major disadvantages that you see in the use of e-learning course within the English Lexicology course? Name at least 3 disadvantages (1st is the most important disadvantage,…)

5. What are the major advantages that you see in the use of e-learning course within the English Lexicology course? Name at least 3 advantages (1st is the best one,…)

Thank you very much for your answers ☺

Appendix C Tables

TABLE 2 CATEGORY 1 OVERALL OPINIONS OF THE STUDENTS TOWARDS THE USE OF E-LEARNING COURSE AS A PART OF THE ENGLISH LEXICOLOGY BLENDED LEARNING COURSE

Number of students who answered Question 1 (Did you like the possibility to work with the English Lexicology e-learning course last semester? Why?/Why not?): **28**/28

Code	Example	No. of students
mostly positive opinion, but aware of possible obstacles	*"I did like it, but people remember more when they write the information down themselves. We copied and pasted the exercises through the semester"*	1
negative opinion	*„I didn't like to use it, cause I was too lazy to use it"*	1
positive opinion	*"It was a new method, which I consider quite interesting and unusual than the other classes"; "It was something different"*	26

TABLE 3 CATEGORY 2 STUDENTS' PERSONAL EVALUATION OF THE ENGLISH LEXICOLOGY E-LEARNING COURSE - SUB-CATEGORY 2.1 THE OPINIONS ON HELP OF THE USE OF E-LEARNING COURSE IN LEARNING OF ENGLISH LEXICOLOGY

Number of students who answered Question 2 (Do you think the use of e-learning course helped you in your learning of English Lexicology? (If so, how?/ If not, why not?): **25**/28

Code	Example	No. of students
the use of e-learning course did not help me in my learning of English Lexicology	*"In general, no."; "I don't think that it helped me to learn more, because it was an e-learning course. I would have to learn it as if it would not be an e-learning course"*	4
the use of e-learning course helped me in my learning of English Lexicology, because it was a logical source of all necessary pieces of information	*"Yes, especially when looking for new information, numerous webpages related to the topic."; "It was my biggest source of information and it also helped me to look for another interesting information on other webpages"*	8
the use of the e-learning course helped me in my learning of English Lexicology, because of the nature of the activities and materials	*"Yes – via many different activities"; "Yes, I think it did. It was not a classical memorising of facts, but rather a form of activity";*	7
the use of the e-learning course helped me in my learning of English Lexicology, because I improved my vocabulary	*It helped me to learn new words"; "I learned new expressions"; "*	6

TABLE 4 CATEGORY 2 STUDENTS' PERSONAL EVALUATION OF THE ENGLISH LEXICOLOGY E-LEARNING COURSE -SUB-CATEGORY 2.2 KINDS OF ACTIVITIES AND MATERIAL THAT SHOULD BE ADDED TO THE CONTEMPORARY VERSION OF THE E-LEARNING ENGLISH LEXICOLOGY COURSE

Number of students who answered Question 3 (What kinds of activities or study materials do you think should be added to the contemporary version of the online course?): **28**/28

Code	Example	No. of students
quizzes	*"maybe quizzes, because it is easiest and funniest to learn"; "quizzes would be great, I memorize newly learned things better"*	8

discussion forums	*"I would like to discuss about the resources, so some kind of forums or something like that"*	12
chats	*"some chats to exchange information with classmate, well I could use Facebook, but here I would chat about lexicology and not about other personal stuff"*	4
video resources	*"more activities with the use of videos";*	10
glossaries	*"I think glossaries within each lesson would be great"*	7

TABLE 5 CATEGORY 3 DISADVANTAGES OF THE USE OF LMS MOODLE E-LEARNING COURSE

Number of students who answered Question 4 (What are the major disadvantages that you see in the use of the e-learning course (within the English Lexicology course)? Name at least 3 disadvantages (1st is the most important disadvantage,…): **21**/28

Code	Example	No. of students
technology-connected problems	*"no access to the Internet"; "problems with the Internet"; "slow computers"*	9
lack of computer skills	*"I am not very technical type of person, so it takes me plenty of time to learn how to use it."*	8
lack of face-to-face communication	*"The work with e-learning course is impersonal"*	12
easy cheating	*"lazy students get the answers from the others"; "CTRL+C/CTRL+V problem solving"*	7
problem finding the proper and right information	*"there are plenty of information on the Internet and sometimes I cannot find what I need, or I don't know which answer is correct"*	6

TABLE 6 CATEGORY 4 ADVANTAGES OF THE USE OF LMS MOODLE E-LEARNING COURSE

Number of students who answered Question 5 (What are the major advantages that you see in the use of e-learning course (within the English Lexicology course)? Name at least 3 advantages (1st is the most important advantage,…): **27**/28

Code	Example	No. of students
all necessary materials together in one logical system	*"everything is at one place and I have the opportunity to check the answers online"*	15
flexibility in terms of time and place	*"I can work at home"; "I like I have an access to the course at home"*	19
time-saving activity	*"it is modern and quick"; "it saves time"*	8
eco-friendly solution	*"we don't have to use notebooks – it saves paper"; "it is online (no need of paper)"*	6
different, simpler and more interesting way of learning	*"This way of learning is easy to understand and not complicated"; "there is enough time to think about the activity – do some research – deeper understanding"; "it is educative in a modern way"*	14
way to bring everyday reality of the students into the part of students' life dedicated to studying	*"I think it is great we can use the Internet and PCs for study purposes"; "the use of the Internet itself is [an] advantage"*	7

ANALYSIS OF THE INFLUENCE OF THE MOODLE USAGE ON THE STUDY RESULTS OF COMBINED FORM OF STUDY STUDENTS

MARTINA KUNCOVÁ, HANA VOJÁČKOVÁ

Vysoká škola polytechnická Jihlava, Czech republic

e-mail: kuncova@vspj.cz

Key words: Moodle, e-learning usage, combined study, study results

Abstract: E-learning with the Learning Management System Moodle is nowadays expanding into all levels of education. It is used at colleges and universities to help students learn and study different materials in their own way. In the Czech Republic we see the tendency to use Moodle as e-learning (or blended learning) support of tuition. At the College of Polytechnics Jihlava we have started to use Moodle in 2009. The e-courses for 150 subjects were prepared during the period 2009-2011 within the scope of the project "Introducing E-learning System into Teaching and Creating E-Courses at the College of Polytechnics Jihlava" subsidized from the Operational Programme Education for Competitiveness in the priority axis 2. Afterwards other e-courses for other subjects have been developed especially for students studying in the combined form of study when the face-to-face lessons are only few times during the semester (on Saturdays). The main aim of this paper is to compare the study results of the selected subjects of the combined forms of study at the study programme Economics and Management and study field Finance and Management. The comparison is aimed at the results of the period before the start of the e-learning usage (2010) with the year 2012 (after the e-learning implementation). The results are tested via Chi-square test of independence to find out if the usage of e-learning has had any influence on the frequency of final marks in the selected subjects.

Introduction

The comparison of students´ results connected to e-learning or distance learning is one of the topics that are mentioned in various articles. For example, Houska and Berankova (2011) studied an impact of additional contact lectures on students' results. Carnwell (2000) analysed the influence of e-learning materials usage instead of direct teaching. Carnwell found out an influence of well-designed e-courses with benchmarks and deadlines on the self-study. The impact of e-learning on study results was also tested by Popelkova and Kovarova (2013). These authors did not find any statistically significant relationship between results and final exam. In our research we aim at the comparison of the final marks frequencies of students in different subjects in situations when it was possible to use e-learning materials (in the year 2012) and when they were not available (in 2010). In this article we describe the results of part-time students only, other results are in (Kuncova Vojackova 2014) and together in (Kuncova, Vojackova 2015).

Materials and Methods

The College of Polytechnics Jihlava has five accredited study programmes. In the year 2014 more than 2600 students were enrolled in the full-time and combined forms of study in all programmes. 70% of the students studied in the programme Economics and Management that covers two fields of study: Travel and Tourism (TT), Finance and Management (FM). The part-time students represented 30% of all students. During the years 2009-2012 the project "Introducing E-learning System into Teaching and Creating E-Courses at College of

Polytechnics Jihlava" subsidized from the Operational Programme Education for Competitiveness in the priority axis 2 with the project registration number CZ.1.07/2.2.00/07.0317 has been executed (https://www.vspj.cz/tvurci-cinnost-a-projekty/projekty/evropske/opvk). The main aim of the project was to create 150 e-courses in the learning management system Moodle. The project and its evaluation are discussed in the previous papers (Kuncova and Vojackova, 2012, 2013). The e-courses were prepared mainly for the students of part-time (or as we call them "combined") form of study but afterwards they were used also for the full-time students. The e-courses do not contain only study materials, but also interactive homework or tests for students. The reasons of homework and tests and self-tests are to find out how students understand the topics.

The first part of our research aims at the subjects that are obligatory for both study fields. Moreover, both study fields use the e-learning materials. These subjects are:

- Business Economy (BE)
- Macroeconomics (MAE)
- Marketing A (MGA)
- Microeconomics (MIE)
- Financial Accounting 1 (FIA)
- Public Finance (PF)

TABLE 1. NUMBER OF STUDENTS IN THE SELECTED SUBJECT

Subject / years	**2010**	**2012**
BE	452	159
MAE	156	100
MGA	144	99
MIE	216	155
FIA	144	107
PF	118	78

SOURCE: COLLEGE INFORMATION SYSTEM.

Five subjects (BE, MAE, MGA, MIE, FIA) are taught in the first year of study, PF is taught in the second year of the bachelor study programme. All these subjects end with the final exam mark on the scale A-F (A-E means the students have passed, F is for those who have failed). Each student has 3 attempts to pass the final exam. Therefore, we used only the final marks (the marks from the last term). For the comparison we use the percentage of

students with each mark instead of real number of students as the numbers of students differ (from 78 to 452, see Table 1). However, for the statistical tests we use the real data.

In all selected subjects we divided the numbers of the students with mark "F" into 2 groups – "F" written in Information system by the teacher and "F" written by Information system itself. Afterwards in all comparisons we excluded those who failed and had the mark "F" written in Information system itself. It means that they did not try any final exam or test – those who tried the exam and failed have "F" in the system written by the teacher. The reason for the exclusion of these students is the fact that they probably did not use e-learning materials at all (especially in the first year of study students stop the attendance in the middle of the first semester). In the first year of study it is a lot of students (see Tab. 2-3).

TABLE 2. YEAR 2010 –ECONOMIC SUBJECTS' RESULTS

mark / subject	BE	MAE	MGA	MIE	FIA	PF
A	6.82%	3.85%	7.64%	3.23%	3.85%	8.70%
B	8.64%	11.54%	15.28%	6.45%	11.54%	10.87%
C	13.18%	29.49%	31.94%	11.61%	29.49%	26.09%
D	15.00%	24.36%	12.50%	10.32%	24.36%	17.39%
E	5.00%	10.90%	6.94%	25.81%	10.90%	21.74%
F	5.00%	3.85%	0.00%	5.81%	3.85%	0.00%
F (FROM IS)	46.36%	16.03%	25.69%	36.77%	16.03%	15.22%

SOURCE: COLLEGE INFORMATION SYSTEM, OWN CALCULATION.

TABLE 3. YEAR 2012– ECONOMIC SUBJECTS' RESULTS

mark / subjekt	BE	MAE	MGA	MIE	FIA	PF
A	1.26%	1.00%	7.07%	3.70%	1.00%	37.18%
B	3.77%	12.00%	12.12%	6.02%	12.00%	7.69%
C	8.81%	23.00%	16.16%	16.67%	23.00%	8.97%
D	13.21%	16.00%	18.18%	12.04%	16.00%	8.97%
E	15.72%	23.00%	22.22%	11.57%	23.00%	24.36%
F	17.61%	0.00%	1.01%	0.46%	0.00%	0.00%
F (FROM IS)	39.62%	25.00%	23.23%	49.54%	25.00%	12.82%

SOURCE: COLLEGE INFORMATION SYSTEM, OWN CALCULATION.

For the comparison we use Chi-square test for independence using categorical data (marks, field of study, type of study, year of study) and contingency tables (Kanji, 2006). The Chi-square test of independence uses the observed frequencies for each category (here for the marks) to calculate the expected frequencies. Afterwards the relative square difference for each category is calculated. All these differences are summarized. The sum is compared with

the Chi-square distribution. If the null hypothesis is true the sum (test statistic) is drawn from this Chi-square distribution – so the sum is lower than the critical value of the Chi square distribution with given significance level (usually 0.05) and with (r-1) degrees of freedom where r is the number of rows (categories) – in case we have two data sets to compare. As it is possible to change marks from the scale A-F into numbers we also calculated the average mark for each subject and year, study field and type of study. We try to compare these average marks but the t-test and F-test that are usually used for the comparison of average or variance have limited validity and robustness in our case (violations of assumptions as no continuous data, non-normality of distribution) and must be taken with circumspection only as complement to the Chi-square test results. It is possible to use non-parametric Wilcoxon test instead t-test but as Guiard and Rasch (2004) proved, "there are more disadvantages than advantages in using the Wilcoxon test in place of the t-test".

The next part is aimed at the subjects that are taught only at the study field Finance and Management and students evaluate them as the most difficult to study. These are:

- Mathematics I (MAT1)
- Mathematics II (MAT2)
- Mathematics for Economists (MATE)
- Probability and Statistics (PS)
- Statistical Methods (STM)

Number of students that studied these subjects is in Tab.4. Mathematics I was studied in the first semester, Mathematics II in the second semester, Mathematics for Economists and Probability and Statistics in third semester, Statistical Methods in fourth semester of bachelor study. That is why the numbers of students are falling down from MAT1 to STM as some of the students leave the college without finishing the study. From the 3 mathematical subjects the most difficult seems to be MAT1 (according to the opinion of teachers and according to the marks – Tab. 5 and 6).This is one of the reasons for some students to leave the school and do not finish this subjects – see Tab.5 and 6 where more than 60% of part-time students had "F" grade from IS so they did not try any exam (if they tried and failed they get "F" from the teacher not from the IS). MAT2 and MATE were also difficult as the % of "F from IS" together with "F" is also high (Tab. 5 and 6) but more students have "F" given by the teacher so they tried to pass the exam. The situation with PS subject is similar to MATE as a lot of

student obtained “F” from the teacher and only a few of them (except of the year 2012) gave up the subject.

TABLE 4. NUMBER OF STUDENTS IN THE SELECTED SUBJECTS

Subject / years	**2010**	**2012**
MAT1	264	178
MAT2	106	95
MATE	133	104
PS	153	99
STM	19	89

SOURCE: COLLEGE INFORMATION SYSTEM.

TABLE 5. 2010 – MATHEMATICAL SUBJECTS’ RESULTS

mark / subjekt	MAT1	MAT2	MATE	PS	STM
A	4.55%	4.72%	1.50%	0.00%	5.26%
B	3.79%	7.55%	4.51%	0.00%	10.53%
C	5.68%	17.92%	13.53%	3.92%	5.26%
D	7.20%	23.58%	9.77%	13.07%	15.79%
E	7.58%	26.42%	32.33%	33.99%	52.63%
F	4.55%	19.81%	38.35%	49.02%	10.53%
F (FROM IS)	66.67%	17.92%	13.53%	10.46%	10.53%

SOURCE: COLLEGE INFORMATION SYSTEM, OWN CALCULATION.

TABLE 6. 2012 – MATHEMATICAL SUBJECTS’ RESULTS

mark / subject	BE	MAE	MGA	MIE	FIA
A	1.12%	2.11%	0.96%	0.00%	2.25%
B	2.25%	2.11%	0.00%	0.00%	11.24%
C	9.55%	14.74%	3.85%	2.02%	10.11%
D	8.43%	15.79%	8.65%	6.06%	12.36%
E	6.74%	24.21%	25.96%	27.27%	53.93%
F	9.55%	14.74%	60.58%	64.65%	10.11%
F (FROM IS)	62.36%	26.32%	16.35%	17.17%	3.37%

SOURCE: COLLEGE INFORMATION SYSTEM, OWN CALCULATION.

Results

As it has been mentioned above some of the test can be week according to the non-normality of the data. We see (Fig. 1) that the results from Macroeconomics (Fig. 1) are nearly normally distributed (according to the Kolmogorov-Smirnov test) and they are similar for both years although in 2012 seem to be worse than in 2010. On the other hand the results

of Financial Accounting (Fig. 2) describe the situation where the normality test does not confirm the normality of the final marks distributions. The skewed distribution is given by the conditions (valid from 2008 till now) that the minimum percentage for the success in this subject (studied in the second year of study) is 70%. On the other hand, to succeed in Microeconomics or Macroeconomics at least 60 % is required. The final marks are not influenced by the subjectivity of teacher, as the teachers were still the same as well as the final test corrected by all of the teachers or partly by the e-learning system Moodle.

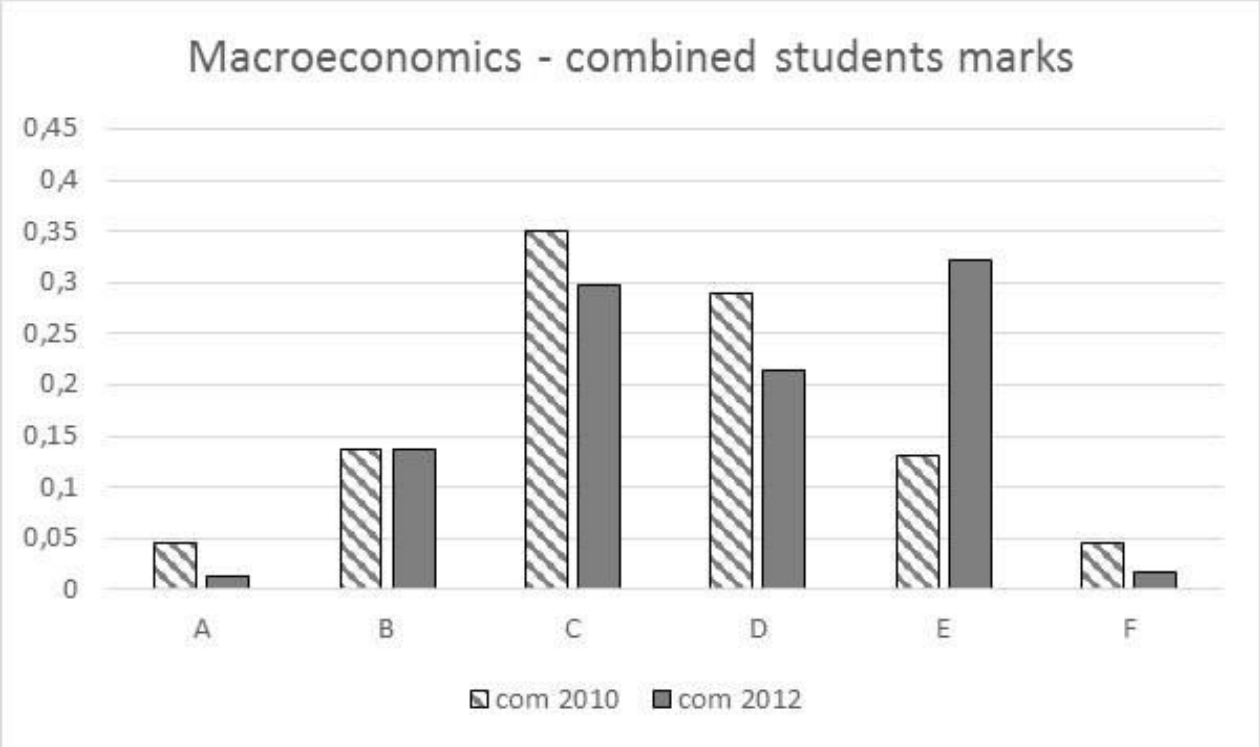


FIGURE 1: MACROECONOMICS – COMPARISON OF RESULTS (% OF STUDENTS WITH GIVEN MARK), SOURCE: OWN CALCULATIONS

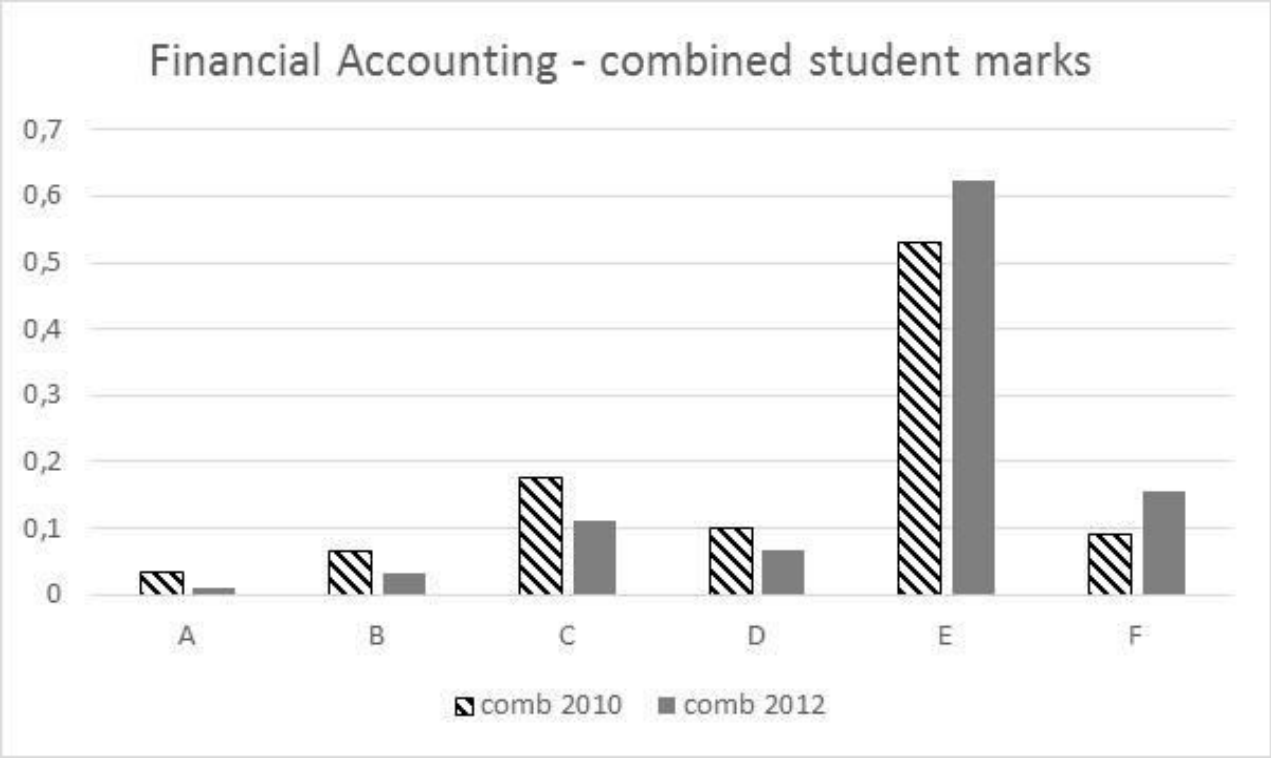


FIGURE 2: FINANCIAL ACCOUNTING – COMPARISON OF RESULTS (% OF STUDENTS WITH GIVEN MARK), SOURCE: OWN CALCULATIONS

We have calculated also the average marks just to see the differences in this mean value for the selected subject during years and for the study fields and type of study. For the calculations mark "A" is equal to 1, "B" = 1.5, "C" = 2, "D" = 2.5, "E" = 3 and "F" = 4 (this is given by the rules of the college, these numbers are used for the average marks calculation). Based on the fact that we do not have continuous data set and the normality was not proven for all the subjects by the normality test, the calculated F-test (showing the equality/inequality of the variances of two data sets) and two sample t-test (showing equality/inequality of the means) must be taken with circumspection only as complement to the Chi-square test results.

When we compare the results of the part-time form of study (Tab. 7) we reject the hypothesis about the independence of the marks between years (only *p*-values shown as it give us the same information as Chi-test values that are all higher than 11.07). All subjects have worse average marks in 2012 than in 2010. Also the average marks differ (as *p*-value of t-test are lower than the significance level 0.05, only for MAE the *p*-value is a little bit higher than 0.05 but in this case the normality of data of the year 2012 was not proven so here we take into account the Chi-square test result). In this situation we cannot prove the positive impact on study result when using e-learning materials.

TABLE 7. Dependence on the year and average marks

	P-VALUE			Average marks	
Subject / years	Chi-test	t-test	F-test	2010	2012
BE	0.00233	0.00	0.15	2.65441	2.90097
MAE	0.00000	0.06	0.35	2.25191	2.38393
MGA	0.00037	0.00	0.09	1.97196	2.37222
MIE	0.00000	0.00	0.00	2.23544	2.54592
FIA	0.00000	0.00	0.21	2.69748	2.93889
PF	0.00000	0.02	0.09	2.19231	2.9663

SOURCE: OWN CALCULATION.

The situation in the part-time form of study with mathematical and statistical subjects seems to be different (Tab.8). According to the Chi-square *p*-values we can confirm the independence of the results of MAT1, PS and STM on the year of study although the t-test says the means differs. As the average marks are going to be worse (from 2010 to 2012) it is hard to say if e-learning helped the students or not. Maybe it reflects the fact that the number of students that can continue their study at the HEI has been falling since 2011 and so the quality of the students hired after 2011 is lower due to lowering requirements for points of the entrance examination at College of Polytechnics Jihlava. As a result, many students with worse mathematical skills are enrolled. PS (and MATE in 2012) seems to be the most complicated subject as the average marks exceeds 3 which means that a lot of students did not pass the subject for the first time. The analysis showed the independence on the year only for MAT2 and MATE but also here the average marks are getting worse.

TABLE 8. Dependence on the year and average marks– mathematical and statistical subjects

	P-VALUE			Average marks	
Subject / years	Chi-test	t-test	F-test	2010	2012
MAT1	0.06178	0.03	0.72	2.4148	2.7388
MAT2	0.00690	0.00	0.09	2.4080	2.7929
MATE	0.00267	0.00	0.18	2.9609	3.4080
PS	0.37674	0.02	0.47	3.3139	3.5122
STM	0.79461	0.05	0.93	2.5588	2.6802

SOURCE: OWN CALCULATION.

Discussion

The research of the final marks frequencies shows that not all final marks are normally distributed. It is influenced by the conditions how to pass the given subject. The tendency not to obtain the best mark but "only" pass is significant mainly for the part-time students. It might be caused by the fact that these students usually work together with studying. The

similar tendency has been found out in the paper of Brozova, Rydval and Horakova (2014). Also Richardson, Morgan, and Woodley (1999) undertook a major study of approaches to studying in distance education study and founded similar result that approach was related to pass rates and final grades but not to course completion. So the "E" mark is very often grade especially when 70% in final exam to pass is needed. For the comparison of two years marks frequencies we use Chi-square test for independence. We may say that there exist differences between the results of each economic subject in selected years (similar as in Brozova, Rydval and Horakova, 2014). These differences can be caused by e-learning usage but as the average marks are worse it can show us that the e-learning materials might be misinterpreted by the students so as not other materials are necessary. May be the worse marks are caused by the lower quality of students due to lowering requirements for points of the entrance examination (but it is hard to test). Moreover, different students´ abilities to study can affect this (and willingness to study), but that is difficult to measure. As other similar studies (Brozova, Rydval and Horakova, 2014; Carnwell, 2000; Popelkova and Kovarova, 2013) we cannot confirm that the usage of e-learning material has an important positive impact on the study results although we proved the difference between the results. In the mathematical subjects the absence of the face-to-face teaching leads to worse results regardless of the e-learning materials (the same findings as Brozova, Rydval and Horakova, 2014) and we also proved that the results of part-time students are different and worse (especially in 2012 with the possibility of the e-learning materials usage) compared with the full-time study form results from all mathematical and statistical subjects (Kuncova, Vojackova 2014, 2015). One "positive" aspect taken from the results is that it is better to mix students from different fields of study in the full time study process to get better marks (Kuncova, Vojackova 2014). We can also make for a view that if the students passed the subjects in the first year of study they have higher chance to pass the rest subjects as the first year of study can separate those students with higher and lower ability to study at HEI.

Conclusion

The comparison of the results between different years of study – before e-learning usage and after it – showed that the differences between students' final marks in part-time form of study exist. We have proved the differences between the results in 2010 and 2012 in economic subjects. But it is not possible to say that these differences are caused only by using of the e-learning materials as in some subjects the results are worse than before (especially in mathematical and statistical subjects). The difference between the students of the two study fields was not proved. According to the previous research we see that the part-time students

had usually worse average marks than full-time students. If this is the reason of few materials in e-learning, no effort to study more than from e-learning, students' ability to study, fewer time or lack of face-to-face lessons it can be a part of further research. As the other authors (mentioned in the introduction and discussion) reached the same results such as very small or any influence of the e-learning onto the evaluation we may conclude that the e-learning is a useful tool for students. However, it cannot be considered as the only tool how to give materials to students and how to study.

Acknowledgements

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GENERATION RELATED DIFFERENCES IN VIEWS ON THE LEVEL OF MEDIATED COMMUNICATION SAFETY ON THE INTERNET		MONIKA FRANIA Faculty of Pedagogy and Psychology University of Silesia in Katowice, Poland

e-mail: monika.frania@us.edu.pl

Key words: Internet safety, mediated communication, seniors, juniors, adults

Abstract: The level of Internet communication safety is related to activities performed in this sphere. An incorrect assessment may always lead to an improper behaviour or inhibition, on one hand preventing the effective use of all network resources and on the other hand creating an irresponsible attitude, which may result in becoming a victim of phishing and cyberbullying, among other risks. The purpose of the research was to answer the following question: How is the Internet communication safety rated depending on the age of the Internet user (belonging to one of three generation groups)? The exploration was conducted among three generations: juniors, adults and seniors. They had not used the new media for the same period of time for objective reasons (in particular given that the Internet has been used in Poland since 1991). Respondents were divided into three-person groups on the basis of their kinship. The author used a diagnostic survey and self-assessment scale to show that the evaluation of certain means of online communication safety differs depending on the generation of the Internet user.

Introduction

In 1936, an English mathematician and cryptologist Alan Mathison Turing proposed a thesis that all solvable problems can be solved algorithmically (Turing, 1936, 230-235). He thereby created a model of an abstract calculating machine consisting of an infinite strip of tape on which symbols are printed, and a head that can read and write (Momot, /online/). Undeniably, his idea had later a major impact on the resulting development of computers (www.komputer.cumprum.pl), without which the Internet would definitely not come to existence. This discovery was announced 79 years ago, at a time when no one had ever dreamt about pocket-sized computers, Google Glass or other gadgets (e.g. wearable technology), not to mention online communication. In the same year, the oldest respondent taking part in this study was born. The youngest respondent was born 10 years ago, in 2005. When his parents were expecting his birth, at Harvard University, Massachusetts, USA, Mark Zuckenberg's project started. The outcome of the project is Facebook, the most popular social networking site. In 2005, the estimated number of computers in use was 5.52 million units in Poland and 223.8 million units in the USA. It means that over 15.7 % of the world population have an Internet access, which accounts for over a billion people (Kaznowski 2005, 6-10).

Changes are still taking place. It is estimated that at the end of last year (2014) over 3 billion people had an access to the Internet. It is hard to assess the number of computers, because devices change forms, which makes them difficult to classify. According to a 2014 report by the Polish Central Statistical Office (GUS), around 77% (10 million) households own at least one computer, and most of them (74%) have an Internet access (Szymański 2014 /online/).

That is what the statistical data say, but the progressive computerisation of many aspects of individuals and groups' lives combined with the dynamic development and metamorphoses of the

Internet are visible to the naked eye. The research, a part of which is presented in this paper, was inspired not only by an analysis of the figures and literature on the subject, but also by a reflection on the rapid change in communication, which occurred during the lifetime of one generation of people. When they were born, the Internet in its current form was still unknown. Yet today, although being called digital immigrants, they use the same media tools and network resources as their half-century younger grandchildren. In fact, elderly people do use this potential. Although seniors are perceived in terms of digital exclusion (Szmigielska, Bąk and Hołda 2012, 141-142) by researchers, and even though they are far from the generation of digital natives, the percentage of the Internet users in this age group continues to grow. In Poland in 2014, 42% of people aged 55-64 could call themselves Internet users. In the 64+ group, 19% of the population use the Internet (Komunikat z badań CBOS: Internauci 2014, 1-2). Naturally, in many cases it is a matter of a different frequency and form as compared to the Internet use by young people (according to the Polish Public Opinion Research Centre – 96% of young Poles aged 18-24 use the Internet), however, the potential and resources are hypothetically available to all age groups.

The network serves currently as a ground for education, entertainment and acquisition of information, but most of all as a means of communication with others. Abundant in paradoxes, the Internet has changed the face of mediated communication making it no longer one-sided as was the case for mass media and mass audience. It can appeal both to individuals and the mass; regardless of place and time; basing on interaction. At the same time, as many users claim, the Internet is a world in which contacts can be more anonymous, and which allows you to open up to a greater extent, be yourself or create your new identity. Yet, is that really so? Does online communication provide a high degree of privacy, anonymity and safety? The small screen may create such impression by isolating the users physically and emotionally as well as allowing them to control the course of communication. However, is it not at the same time a curtain behind which negative human instincts (paedophile tendencies, cheating, manipulation, phishing) awaken? The research was meant to present views on the sense of anonymity, privacy and safety during communication among three generations of Internet users: the youngest ones, often called digital natives; their parents; and seniors, for whom the Internet is an invention that appeared in the last phase of their lives. Due to the large amount of data, this paper will present only the results regarding the sense of safety (analyses of the privacy and anonymity are available in the article – in print). It should be noted that it was not the actual safety of the online communicational activities that was assessed. The subject of this study was the users' opinions and feelings about this issue.

Outline of the research methodology

The study focused on three aspects (the sense of anonymity, privacy and safety) and was conducted according to the same research procedure. It should be noted, however, that the results presented below are partial in nature; hence in this section I will refer only to a selected aspect.

The purpose of the study was to examine/diagnose the opinions and assessment of the sense of online communication safety in selected fields from the perspective of three generations of the Internet users. The results were then compared. The main research problem can be formulated as follows: How is the online communication safety rated depending on the age of the Internet user (belonging to one of the three generation groups)?

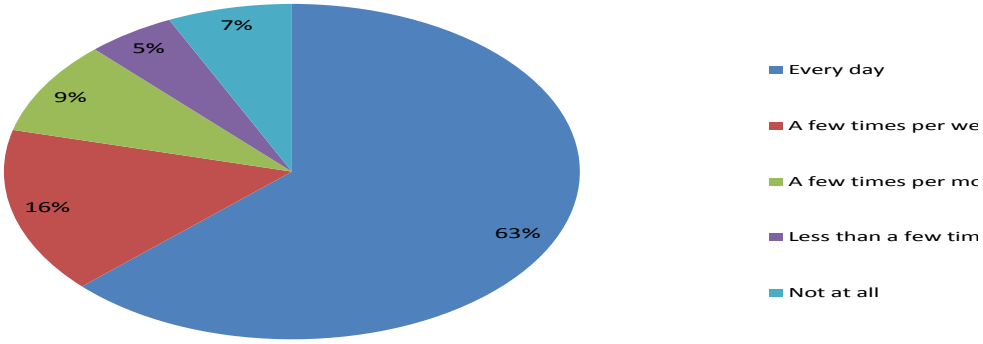
The research assumptions stipulated that the study would be attended by 15 randomly selected families and from each family there would be selected 3 individuals from different generations: 1) a grandparent; 2) a parent; 3) a child. A prerequisite for participation in the study was the ability to use the Internet by all family members (including the seniors). It was difficult to find three respondents comprising a structurally complete family (due to the seniors' age it was sometimes impossible) in which all of them use the Internet. At the same time, (mostly in the case of the oldest generation but not only) the ability or the sole fact of using that tool was important, which not always meant regular Internet surfing during the period of the survey (which explains why 3 respondents said that they did not use the Internet at the time of the survey).

The diagnostic survey combined with a self-assessment poll was eventually attended by 43 respondents from the Silesian Voivodship (Poland). 13 families formed three-person teams. In the case of two families, only 2 people took part in the questionnaire. The respondents answered their questions individually, without knowing the answers of the others.

Results

Although you do not need to use a given media tool to have an opinion about it, it is certainly helpful if you base this opinion on your own experience. The frequency of using the Internet by the respondents varies depending on their age. In this aspect, this is the most important factor. Most of the respondents (63%) surf the web every day. The second largest group (16%) does it a few times a week, which means that over ¾ of the respondents use the Internet often, as presented in Chart 1.

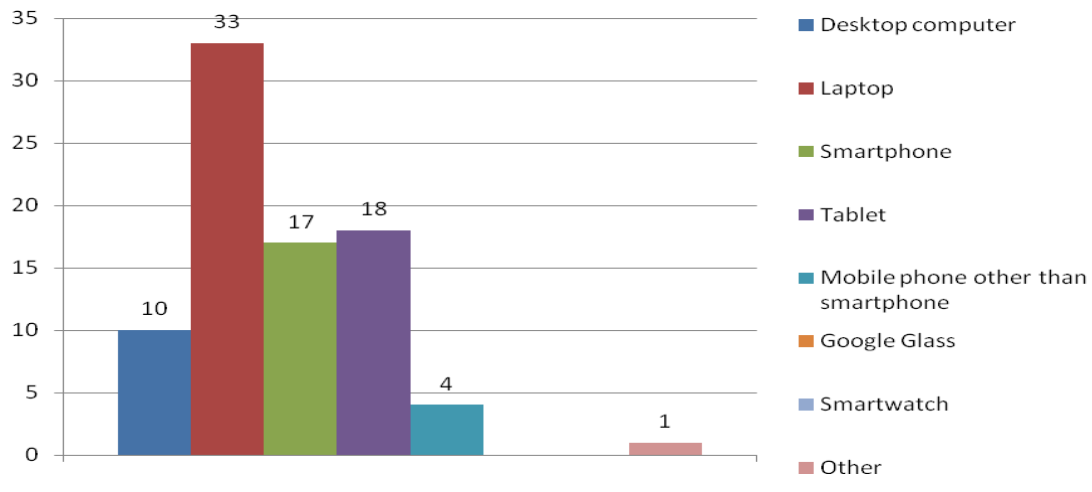
CHART 1. FREQUENCY OF USING THE INTERNET BY THE RESPONDENTS (N=43)



SOURCE: PERSONAL RESEARCH

The respondents were also asked what type of device they use for surfing the Internet. Less than twenty years ago the Internet was associated mainly with desktop computers that people had at home or at the place of work. Also Internet cafés, where everyone could use the Internet after paying a fee, were very popular in Poland. In the era of mobile devices it is often said that you can be connected to the Internet all the time by "keeping the device in your pocket or purse". Wireless networks and free Wi-Fi hotspots have also become fully available. In this small group of the respondents it is possible to notice a tendency of departing from using desktop computers only. Multiple answers were allowed to this question. The most chosen option was laptop (33), followed by tablet (18) and smartphone (17). Desktop computer was as far as the forth on the list.

CHART 2. DEVICES USED FOR SURFING THE INTERNET (N=43)



SOURCE: PERSONAL RESEARCH

Taking into account the context of the survey, which was related to the safety of communication on the Internet, the representatives of three generations were asked what kind of tools/applications/channels they used for online communication and making contacts with others. The results are presented in Table 1. Multiple answers were allowed to this question. Interestingly, private e-mail was chosen most often. Both young and old respondents send messages in the form of letters. Social networking sites, which by definition serve communication, establishing contacts, forming communities and groups, are also very popular. Skype, a telecommunication software product, was also often mentioned. One could consider whether or not e-mail or Skype are modern equivalents of letters and (e.g. free) phone calls. Perhaps, that is the reason for such popularity of these two means of communication among all the surveyed groups. On the other hand, to a relatively large group of young people messages from social networking sites are more important than those presented by the traditional media (Mendyk – Krajewska 2013, 207).

TABLE 1. TOOLS/APPLICATIONS USED FOR ONLINE COMMUNICATION (N=43)		
public chat	**4**	9.8%
instant messenger	**10**	24.4%
private e-mail	**29**	70.7%
social networking sites – public "boards"	**11**	26.8%
social networking sites – private "forums"	**9**	22%
social networking sites – private messages	**22**	53.7%
chat – private messages	**8**	19.5%
comments under posts/articles, etc.	**9**	22%
Internet forums	**5**	12.2%
blog (as an author)	**3**	7.3%
business e-mail	**5**	12.2%
private website	**1**	2.4%
YouTube channel (as an author)	**7**	17.1%
portals/website for publishing personal videos, e.g. Vimeo	**1**	2.4%
portals/website for publishing personal photographs, e.g. Flickr	**2**	4.9%
telecommunication software, e.g. Skype	**19**	46.3%
Other	**2**	4.9%
SOURCE: PERSONAL RESEARCH		

After the respondents had picked the tools, they were asked to assess the safety level of these instruments during the communication process. The results are presented in Table 2 and Table 3. As it turned out, among all of the respondents, regardless of their generation, the often used Skype was acknowledged as the safest (the average of 3.46) and a public chat as the least safe (1.95) (Table 2).

The majority of the respondents rated the tools below the average of 3.00 and in two instances (public chat and comments under posts/articles) the largest group of the respondents rated the channels as highly unsafe.

TABLE 2. ASSESSMENT OF THE LEVEL OF ONLINE COMMUNICATION SAFETY REGARDLESS OF THE AGE GROUP (N=43)

Tool/means of Internet communication	Assessment of the Internet user's safety level regarding selected means of Internet communication on a scale from 1 – highly unsafe to 5 – completely safe (figures and %)**					Total answers*	Average level of safety**
	1	2	3	4	5		
E-mail	1 (2.4%)	2 (4.9%)	**17 (41.5%)**	16 (39%)	5 (12.2%)	41	3.29
Public chat	**16 (40%)**	15 (37.5%)	4 (10%)	5 (12.5%)	0	40	**1.95**
Chat – private messages	2 (5%)	9 (22.5%)	**16 (40%)**	10 (25%)	3 (7.5%)	40	3.07
Internet forum	8 (20%)	**21 (52.5%)**	10 (25%)	1 (2.5%)	0	40	2.10
Instant messenger	5 (12.5%)	7 (17.5%)	**17 (42.5%)**	10 (25%)	1 (2.5%)	40	2.87
Telecommunication software e.g. Skype	1 (2.4%)	5 (12.2%)	**15 (36.6%)**	14 (34.1%)	6 (14.6%)	41	**3.46**
Comments under posts/articles	**15 (37.5%)**	11 (27.5%)	8 (20%)	4 (10%)	2 (5%)	40	2.17

Source: personal research
Note:
*Not all of the respondents assessed the safety of each tool, which may result from the fact that it was not known to the respondent/the respondent did not use it
**Rounded up

Table 3 shows the results of the safety level assessment according to the age groups. For each tool the average for generation groups GI, GII, GIII was assessed. Taking into account only the two "safest" tools (according to the respondents), we may notice that private e-mail is classified as safe more often by seniors than by the younger generation. It is the opposite in the case of Skype. The general tendency, which can be observed by analysing the colour of values (green means the generation group which reached the highest average level of safety rating; red means the generation group which reached the lowest average level of safety rating for a given Internet tool/channel) is that the youngest generation gives the highest ranks to the safety level. Among the youngest respondents, the average was the highest in six out of seven cases. Seniors rate the safety level as the lowest – the average was four times as low. As mentioned before, private e-mail is an exception.

TABLE 3. ASSESSMENT OF THE LEVEL OF ONLINE COMMUNICATION SAFETY DEPENDING ON THE AGE GROUP (N=43)

Tool/means of Internet communication	Assessment of the Internet user's safety level regarding selected means of Internet communication in different age groups on a scale from 1 – highly unsafe to 5 – completely safe (figures and %)*															Average* in different generation groups		
	1			2			3			4			5					
	GI	GII	GIII	GI	GII	GIII	GI	GII	GIII	GI	GII	GIII	GI	GII	GIII	GI	GII	GIII
a) E-mail	1 (6.6%)	0	0	0	0	2 (16.66%)	3 (20%)	9 (64.28%)	5 (41.66%)	7 (46.6%)	4 (28.57%)	5 (41.66%)	3 (20%)	1 (7.14%)	1 (8.33%)	3.53	3.42	3.66
b) Public chat	3 (20%)	7 (50%)	6 (54.54%)	7 (46.6%)	6 (42.85%)	2 (18.18%)	1 (6.6%)	1 (7.14%)	2 (18.18%)	4 (26.6%)	0	1 (9.09%)	0	0	0	2.40	1.57	1.81
c) Chat – private messages	0	1 (7.14%)	1 (9.09%)	3 (20%)	4 (28.57%)	2 (18.18%)	6 (40%)	6 (42.85%)	4 (36.36%)	3 (20%)	3 (21.42%)	4 (36.36%)	3 (20%)	0	0	3.40	2.78	2.54
d) Internet forum	3 (20%)	2 (14.28%)	3 (27.27%)	6 (40%)	9 (64.28%)	6 (54.54%)	5 (33.3%)	2 (14.28%)	3 (27.27%)	1 (6.6%)	0	0	0	0	0	2.26	1.85	2.18
e) Instant messenger	1 (6.6%)	1 (7.14%)	3 (27.27%)	2 (13.3%)	4 (28.57%)	1 (9.09%)	4 (26.6%)	8 (57.14%)	5 (45.45)	8 (53.3%)	1 (7.14%)	1 (9.09%)	0	0	1 (9.09%)	3.26	2.64	2.63
f) Telecommunication software, e.g. Skype	0	0	1 (8.33%)	1 (6.6%)	2 (14.28%)	2 (16.66%)	2 (13.3%)	8 (57.14%)	5 (41.66%)	9 (60%)	3 (21.42%)	2 (16.66%)	3 (20%)	1 (7.14%)	2 (16.66%)	3.86	3.21	3.16
g) Comments under posts/articles	5 (33.3%)	5 (35.71%)	5 (45.45%)	4 (26.6%)	4 (28.57%)	3 (27.27%)	4 (26.6%)	2 (14.28%)	2 (18.18%)	2 (13.3%)	1 (7.14%)	1 (9.09%)	1 (6.6%)	1 (7.14%)	0	2.53	2.00	1.90

Source: personal research

Note: * rounded up; % in a group is calculated with reference to the number of its members (n)

a) GI – n=15; GII – n=14; GIII – n=12;
b) GI – n=15; GII – n=14' GIII – n=11;
c) GI – n=15; GII – n=14' GIII – n=11;
d) GI – n=15; GII – n=14' GIII – n=11;
e) GI – n=15; GII – n=14' GIII – n=11;
f) GI – n=15; GII – n=14; GIII – n=12;
g) GI – n=15; GII – n=14' GIII – n=11;

Green marks the highest average of the tool (the higher the average, the safer the tool is considered); red marks the lowest average of the tool (the lower the average, the less safe the tool is considered).

What are the risks related to online communication and activities in cyberspace? The respondents were asked to give three examples. Their answers are presented in Table 4 as direct quotations.

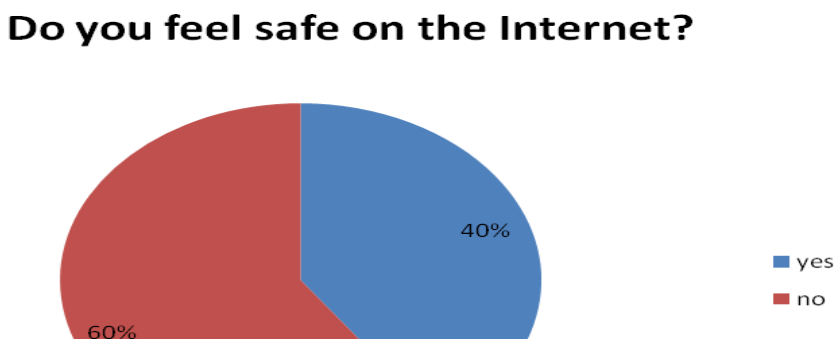
TABLE 4. RISKS RELATED TO ONLINE COMMUNICATION AND ACTIVITIES IN CYBERSPACE – LIST OF ANSWERS (N=43)

Symbol of the family	Respondent's generation group		
	The youngest generation	Middle-aged generation	The oldest generation
I	- access to inappropriate content; - social changes; - addictions;	- viruses; - cyberviolence; - "time stealer";	- stalking; - data theft; - hackers;
II	no answer	- hackers	no answer
III	- fraud; - risks to property; - paedophilia;	- impostorship; - child grooming; - cyberstalking;	- possible addiction; - exposure to fraud;
IV	no answer	- psychological violence; - meeting people who may be dangerous in real life; - cheating Internet users;	- cyberviolence; - stop being anonymous; - children lose contact with the real world, they value only online friends;
V	- receiving unwanted messages, spam; - exposure to fraud; - viruses;	- lack of privacy; - paedophilia; - viruses;	- chance of encountering undesirable content, e.g. pornography; - downloading unwanted content by mistake; - being careless about privacy;
VI	- gathering confidential information by cookies; - using your image without permission; - hacking into an email or account and stealing identity;	- stealing money from the account; - websites which promote hatred, intolerance; - lack of data verification upon registration to various chats and forums, which leads to many problems involving children;	- stealing money from online accounts;
VII	- lack of privacy;	- other users may read your messages; - data theft; - uncontrolled transfer of information;	- too much information about you on the Internet may be harmful to you;
VIII	- violence; - bad words; - data theft;	- inappropriate content; - vulgar photos, comments; - lack of anonymity;	no answer
IX	no answer	- lack of anonymity; - dangerous content; - financial fraud;	no respondent in this age group
X	no answer	no respondent in this age group;	no answer
XI	no answer	- you don't have full information about the person we are chatting with; - someone may use your personal data without	- publishing personal data; - fraud; - sharing photos;

		permission; - someone may use you photos without permission;	
XII	- money swindling; - fraud; - theft of personal data;	- weaning away from personal contact; - language impoverishment; – spread of violence;	- calling names; - ridiculing; - cheating;
XIII	- fraud; - theft; - malpractice;	- lack of privacy; - exposure to vulgar comments; - we don't know who is on the other end;	- fraud;; - stealing; - pornography;
XIV	- dishonesty; - addictions; - you don't know who the person on the other side of the screen is;	- lack of anonymity, someone may misuse the information you publish; - you don't know who the person on the other side of the screen is; - online communication is addictive and consumes a lot of time	- hacking; - misuse of information you publish; - dishonesty;
XV	- information leak; - information gets into the wrong hands; - incomprehensible messages due to the form of communication, i.e. writing;	- phishing; - lack of privacy; - child grooming;	- hacking into bank accounts; - misuse of personal data by third parties; - exposure to libel;
SOURCE: PERSONAL RESEARCH			

Personal reflections, former participation in preventive activities or personal experience may make people aware of the risks involved. In the context of the listed threats, which recurred in some cases, the respondents in all groups were asked about their sense of safety during online communication. The majority (60%) of the surveyed admitted that they did not feel safe online (Chart 3).

CHART 3. RESPONDENTS' SENSE OF SAFETY WHEN SURFING THE INTERNET (N=43)



SOURCE: PERSONAL RESEARCH

Conclusion

The research offered an opportunity to examine opinions on the safety level of online communication from the perspectives of three generation groups. The results of the survey are presented mainly in tables and in charts. In the conclusion I would like to comment on the main problem, which regarded the presented part of the empirical research, which is: How is the online communication safety rated depending on the age of the Internet user (belonging to one of three generation groups)? The declarations and opinions gathered in the survey show that the majority of the respondents (60%) do not feel safe on the Internet. At the same time, over ¾ of the respondents use the Internet at least a few times a week and 63% do it every day. Regardless of the generation group, mobile devices (such as laptops, tablets and smartphones) are becoming more and more popular. Private e-mail, social networking sites and the telecommunication software product Skype are the most popular tools and channels of communication. The opinions on the safety of the selected communication tools vary depending on the generation group. Safety is rated from 1.95 (public chat) to 3.46 (Skype), with the majority of the respondents considering safety of all the tools as average or below average (on a scale to 5.0). The assessment differs markedly depending on the Internet user's generation group, which is presented in detail in Table 3. The young generation rates the communication safety higher than their parents, not to mention their grandparents. In all cases, except for Skype, seniors rate the communication safety rather low. It can be assumed that this results from prudence and a more cautious approach related to lesser trust in general, greater distance to this type of mediated communication or a greater life experience. This hypothesis would suggest a high level of media awareness among the respondents and the resulting attempts to avoid cyberspace threats. It is also possible to come to a contrary conclusion that this is just overcautiousness, which is inadequate to the threat and which stems from ignorance or limited experience in using the tools in question. A similar observation may refer to the young generation – is the conviction about safety adequate to possible threats or rather dictated by negligence and lack of media awareness? It is difficult to provide one and only true answer to these questions. The generation of parents may have the most balanced view because they were brought up without the Internet, but today they have their feet strongly set in cyberspace. Naturally, an adequate level of safety assessment is the most desired from the perspective of education and proper functioning. An overstated assessment produces a risk of becoming a potential victim of criminal behaviour and threats such as phishing, child grooming and cyberbullying. If understated, the assessment may cause

anxiety and barriers, which prevent one from using all the available resources. However, the consequences of such attitudes were not the subject of this research.

All the age groups pay attention to the Internet related technical risks, but still the vast majority are also aware of threats provoked by activities performed by other users. Such awareness may be regarded as desirable, considering the fact that in the eyes of the public safety on the Internet is often associated only with the technical aspects of hardware and software, whereas the multidimensionality of such safety refers largely to people's negative behaviour (Hall, 2012, 35). The study shows generation related differences in views on online communication safety and thereby it may contribute to further qualitative analyses aimed at identifying the principles that govern this situation.

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FULL-TIME/DISTANCE TEACHING CONCEPTS "SAFETY AND PSYCHOSOMATIC HEALTH PROMOTION" OF KYIV'S TARAS SCHEVCHENKO UNIVERSITY STUDENTS (2006-2009 YEARS)

KORNIENKO OLEKSIY

Psychological Faculty,
Kyiv Taras Shevchenko University, Ukraine

e-mail: ovkdefender@gmail.com

Keywords: Full-time/distance teaching, student's psychosomatic health, research data

Abstract: The aim of this article is to inform professionals in psychology, social work, sociologists, scientists, decision makers on the results of educational achievements and longitudinal research results during 2006-2009 years of full-time/distance teaching concept at the Faculty of Psychology of National Taras Shevchenko University (Ukraine)
The tasks that are revealed in detail the aim of the article content are the following positions:
Conduct theoretical, methodological, applied analysis of full-time/distance learning implementation in educational institutions of foreign and national researches. Expand the specific teaching of the concept of "Safety and psychosomatic health promotion" and other subjects at the Faculty of Psychology 2006-2009 academic years as an example of the full-time/distance approach. Demonstrate the results of the introduction of modern full-time/ distance teaching concept: "Safety and psychosomatic health promotion".

Introduction

The main publications of leading foreign and local national researchers have actively discussed the possibility of introduction new informational technologies for the last 10-15 years to higher educational institutions, universities (Kremin 2000; Nikolaenko 2005, 3-10; Elaine, Seaman, 2008, Lockwood 2013; O'Shea, Stone and Delahunty 2015, 41-48).

Accordingly to Nikolaenko's article Ukrainian scientist "Informational revolution in education" was discussed objective factors of this issue in the world. Connecting secondary schools to the Internet in the whole Ukraine is about 15%. The percentage of urban schools, that are connected to the Internet, is about 19%, 10% at countryside. Ukraine is one of the last places on the number of computers in secondary schools. It has 1.3 computers per 100 students (By comparison, Japan - 82, USA - 76, Germany - 52, France - 38, Poland - 14.6, Russia - 10.4.)

More than 1 million students (about 20 percent) enrolled in schools have not a modern computer. According to the organization "World Economic Forum" today by the symbol, "preparedness information infrastructure" among 104 countries Ukraine ranked 82-nd place, along with Zambia and Tanzania.

After taking into account all previous literature analysis we focus on using on-line learning for teaching and research goals at Psychology Faculty Kiev National Taras Shevchenko University.

At the faculty of Psychology of National Taras Shevchenko University (Ukraine) have been implemented the full-time/distance learning concept during 2006-2009 years. This concept was used for example at this subjects: "***Safety and psychosomatic health promotion***" for students of first, third years psychology, social work, sociology departments; "***Methods psychosomatic health promotion***" - for third year psychologists (Ukrainian/English teaching); "General Psychology" for forth year Radiophysics Faculty; "***Psychological assistance in emergency situations***" for specialist, master psychologist and

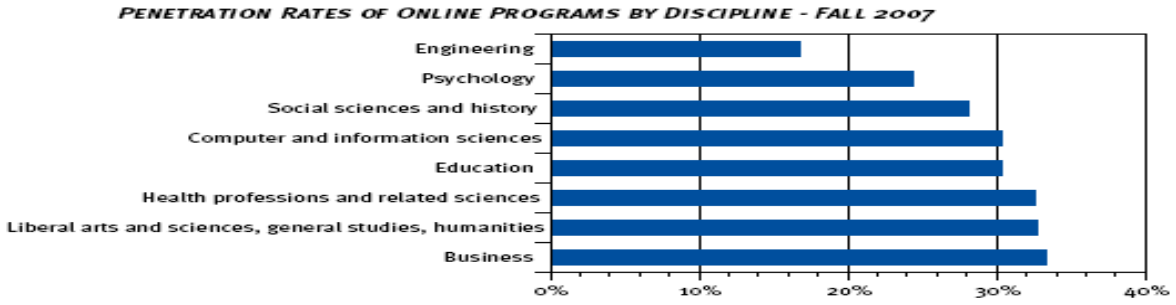
military cadets (Ukrainian/English teaching). The author published his basic theoretical-methodological paper and developed research longitudinal program (Kornienko 1999, 50-53).

The following group of Ukrainian, Russian scientists are can be defined as innovators in learning process who created the theoretical and methodological framework presented its own work and gradual introduction of combined forms of traditional and distance learning: (Stepashko 2000/2001, 141-148; Gurov 2000, 48-49; Kogan 2003, 84-88; Ovsyannikov 2004, 7-14; Hankala 2004, 79-84; Dobrovolska 2004, 27-28; Notar 2005, 35-37; Vozna and Nesterenko 2008, 13-14) presents original works include analysis of works of psychological and pedagogical direction.

Foreign experts represent different results and the development of distance education experience, according to (Bishop-Clark, Dietz-Uhler and Fisher 2006/2007, 491-506) which have focused on the importance of personality type and its impact on effectiveness of distance learning. Elaine and Seaman (2008) provide comparison data dissemination measures for the implementation of this educational system on the example of thousands of research universities in the US for 2007 academic year. Psychology had second last penetration rates among other subjects in using online learning.

PICTURE 1. THE DYNAMICS OF IMPLEMENTATION OF DISTANCE LEARNING ON THE LIST OF SPECIALTIES IN THE US IN 2007 YEAR (ELAINE AND SEAMAN 2008).

Examining fall 2007 penetration rates for the eight discipline areas shows roughly equally proportional representation online. The single exception is engineering, where only 16 percent of the institutions offering engineering programs have a fully online engineering program. This compares to a range of 24 percent (psychology) to 33 percent (business) for the other discipline areas.



The present original article includes research analysis of individual - psychodiagnostic data of 488 students (216 boys and 272 girls) at three faculties Kyiv's Taras Shevchenko University. The research was based on four blocks psychodiagnostic and twelve tests collected data during 2006-2009 years. In the available literature, of national experts we found no mention results of teaching medical-psychological and psychodiagnostics-remedial direction of individual students of various disciplines through combined training methods.

Methods. We allocated four blocks of twelve psychodiagnostics methods, detailed their study, testing in author's dissertation works and other professionals, textbooks, monographs. The author used psychodiagnostics methods from foreign and national experts.

First block was *individually psychological and psychophysiological-oriented* and was consisted from these methods. EPI introversion, ambiversion, extroversion, emotional stability/instability adapted A. Shmelev (Raigorodskii 2001); temperament by Y. Belov (Emelyanov2000); feeling and perception (representative system of personality: "visualize", "kinesthetic", "audiality" by T. Orlova and O. Dobrorodnyeva (1993).

Second block was *personality-oriented* character accentuation based on H. Smisek (Golovey and Ribalko 2002); method of diagnosis temperament Y. Strelyau (Raigorodskii 2001); the scale of personal and situational anxiety C. Spielberger (1990).

Third block was *psychosomatic oriented* method of differential diagnosis of depression V. Zhmurov (1986); Hisenskyy questionnaire adapted to the mental health institute V. Bekhterev (Raigorodskii 2001); methods for rapid diagnosis of neurosis C. Hake and I. Hesa (Raigorodskii 2001).

The fourth block was *interpersonally oriented* method of diagnostics of interpersonal relations by T. Leary (Raigorodskii 2001).

Therefore, we consider it appropriate to present the results of this article about the full-time/distance teaching concept: "***Safety and psychosomatic health promotion***" at the Faculty of Psychology, National Taras Shevchenko University (Ukraine) for 2006-2009 academic years.

Conclusion

The educational process and implementation of the program took place at three faculties: Radiophysics and Psychology, Sociology during 2006-2009 years. The object of the study there were students aforementioned faculties "healthy students" on the verge of standard "normal" and "bodyline psychosomatic health" for the first - fourth years. The subject of the study has individual psychological characteristics (45 personality dimensions) of the first signs of deterioration psychosomatic health (extremes of typology, emotional stability instability, complex manifestations of integral temperament, exhaustion, stomach complaints, pain in different parts of the body, heart complaints, depression and neurosis status, personal and situational anxiety, pathological manifestations accentuation of a certain type, extreme-pathological manifestations interpersonal relations) and their correction, prevention for maintaining optimal health students.

The novelty of the program is to educate and conduct diagnostic psychological studies as full-time and distance interaction of the teacher (psychologist) with students in teaching normative discipline "*Safety and psychosomatic health promotion*" and other items through direct communication with the students during teaching time and email.

There have been in total 488 student's comprehensive research 216 boys and 272 girls of the first and fourth year through full-time/distance teaching program on the 2006 and 2009 academic years at Kyiv National Taras Shevchenko University (Ukraine).

Relevance research were to conduct parallel studies using complex four blocks psychodiagnostics methods in number 12 questionnaires (45 individual-psychological personality dimensions for each person) given the fact that 70% of the data were obtained in terms of direct testing during teaching ours, 30% due to distance learning between teachers and students via email.

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M-LEARNING

iPAD IN ACADEMIC SETTINGS: SECOND YEAR INTO THE PROGRAM

VERONIKA NENIČKOVÁ
E-learning Office
Faculty of Arts
Masaryk University, Czech Republic

e-mail: nenickova@phil.muni.cz

Key words: iPad, m-learning, mobile technologies, academic settings, teacher training

Abstract: iPad in Academic Settings was a pilot project initiated by the E-learning Office at the Faculty of Arts, Masaryk University, Brno, Czech Republic. Since the pilot run, the project has been developing rapidly in the two subsequent semesters.
This paper presents an overview of the project, its structure and workshops. The future of the project is also briefly discussed. In addition, it summarizes the results of the qualitative research conducted among teachers and lecturers who participated in the project and used the devices provided by the E-learning Office.

Introduction

For the first time since the spread of personal electronic devices, such as desktop computers, laptops and smartphones, there has appeared a device – iPad or any other tablet – that can truly advance the way teachers work. Although tablets have been around for only about five years, their popularity among teachers on all levels of the educational system has skyrocketed. Still, a question remains whether teachers can exploit tablets to their full capacity and what it would mean for their workflow. It is also a matter for research whether the devices are mostly used for rather basic procedures, such as surfing the Web, reading emails, taking photos and reading news or for more advanced tasks, such as correcting student work and creating study materials and presentations.

In Spring 2014, E-learning Office at the Faculty of Arts, Masaryk University, Brno, Czech Republic, launched a pilot project investigating possibilities for using iPads in academic settings. The project encompassed providing iPads for classroom use to selected teachers and getting comprehensive feedback from them. Furthermore, a series of iPad workshops was conducted during which lecturers could discover and try out various ways of iPad use. [1]

This paper summarizes the results of the qualitative research conducted among teachers and lecturers who participated in the project and used the devices provided by the E-learning Office and presents an overview of the updated and modified version of the project that ran in the academic year 2014/2015. Our current thinking about possible iPad applications in academic settings as well as the structure and content of the workshops, which specifically target such an environment, are laid out in the paper. In addition, our reflections and the future of the project are discussed. This paper offers insight into benefits and challenges of m-learning in higher education.

iPAD in Academic Settings – A Pilot Project (spring 2014): Results of Interviews

After the end of the first run in the Spring Semester 2014, we interviewed the six teachers whom we had provided with the devices at the beginning of the semester. We asked them to comment on their

[1] The pilot project was described in detail in (Neničková and Sudický 2014)

experiences after the first week of use[2] and after six months. In the second feedback, we were particularly interested in hearing about their experience over a longer period of time and plans for using the device in their work. The interview data was processed using the SWOT analysis method.

First, the positive comments that teachers made after the first week of using the devices did not change by the end of the semester. New ones were added as well probably because they gained more experience with the devices. As for the negative comments, some did not change, and some were resolved during the semester. The main difference can be seen in the range of applications teachers have come up with since over the course of the project.

Based on the conducted interviews, the iPad user experience in the academic settings can be divided into several categories. These categories are presented below.

Weakness

Generally, the ones mentioned originate from the iOS-specific features and differences between iOS and other systems, which is fully understandable considering the fact that only one out of six teachers had previous experience with Apple products. For example, they felt they were missing a central file manager application at first, but, when they started using such an app, they stopped after a while because, according to them, they realized they did not need it. Majority of the issues were resolved over time when teachers got comfortable using the iOS.

Strengths

With regards to strengths, all teachers mentioned how amazed they were by the device response time that does not increase, not even after a few months of intensive use, and by how fast the system operates. The second positive comment five out of six teachers had was about the device long battery life. They also liked the fact that they could have all their files at hand wherever they were, which, they felt, increased their work efficiency.

Opportunities

The most interesting category for us is the Opportunities because it tells us how teachers used or plan to use the devices at and for work. In addition to email communication and browsing the Internet, all of them consider making educational clips a possibility. Five out of six mentioned using dictionaries, making audio recordings, correcting students' work and giving lectures/presentations with the device. Moreover, one teacher said that she could not imagine taking notes on diploma theses without an iPad anymore. Others were interested in converting voice into text, recording Skype calls and using an ATLAS.ti application for a field research. Another teacher was amazed by the high quality scans of old documents iPad can make

[2] Summary was published and is available online (Neničková and Sudický 2014, 210-211).

and with the ease of their readability on the device. She appreciated how much easier the device had made her work in archives. Two out of six teachers mentioned the issue of digital literacy. One said that he wanted to compare the iOS with his previous Android experience. Another teacher expressed concern over the pressure she feels to keep up with technology because of how comfortable students are with it.

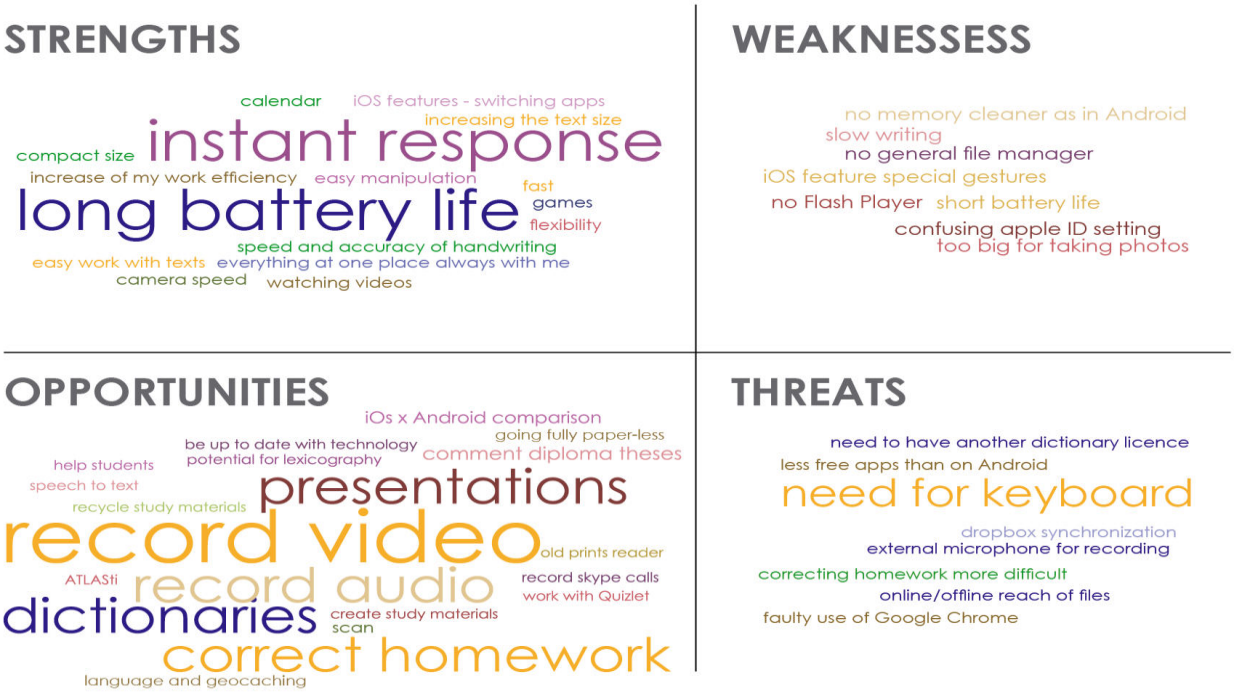
Threats

Teachers also shared the downside of their iPad experience. Half of the teachers mentioned that they might need an external keyboard to exploit iPad to its full capacity. We, however, believe that, while it would indeed be more comfortable to write long texts with an external keyboard, it is not necessary for short ones. By the end of the semester, one of the teachers purchased an external keyboard.

Some were also concerned about the audio recording quality. They felt they would need an external microphone every time they wanted to make a recording. We were able to convince them, however, that it very much depends on the purpose of the recording.

During the first interviews, teachers were often shocked that there was no USB flash drive slot on the device. However, they quickly got used to the cloud storage services. In the iPads provided by the E-learning Office, there was no sim card slot as well. Therefore, the accessibility of cloud-stored files offline was limited. With regards to this, half of the teachers indicated that they had to plan ahead, which was a little bit annoying.

PICTURE NO. 1 SWOT ANALYSIS



One of the teachers purchased an iPad while participating in the project, and four teachers followed in her steps when the run was over. So, five out of six teachers found iPads useful enough to invest in their own devices.

iPAD in Academic Settings: An Overview (autumn 2014)

After the end of the first workshop series in the Spring Semester 2014, we evaluated the interviews and took the results into account for the next run. We felt that there still were interesting topics to be covered and that it would be beneficial to build up on the topics of the first five workshops. Also, we wanted to offer more content and help the participants of the first workshop series acquire new skills.

The second workshop series was divided into ten workshops with each of them covering one topic. Five workshops were following up on the topics from the previous semester (we call them the basic ones), while the other five workshops were new (the advanced ones). The basic ones were updated, deepened, extended and modified because we had twice as much time for each topic with the advanced workshops being added. Each workshop was 90 minutes long. In contrast to the previous semester where participants could choose between two week days and two times of day, this time we decided not to repeat the same workshop more than once. Moreover, both basic one and advanced workshops on different topics were conducted on the same day: the basic workshops took place every second Thursday in the afternoon, and the advanced ones in the evening. Thus, two new topics were introduced every two weeks, which gave the participants some time to experiment with their devices and to apply their newly-acquired skills in real life, for example, in class, in the office and while studying. To provide even more support to the participants, we always distributed printed study materials and continuously updated the project Moodle course. This way, they could review all the materials at their convenience and earn up to 11 digital badges for course task completion.

Topics of the new workshop series:

1a. How to work with iPad for beginners and advanced users

1b. How to educate yourself and work with scientific sources on iPad

2a. How to use iPad on the road and at home

2b. How to collaborate over distance with iPad

3a. How to present and interact with the audience at lectures and conferences using iPad

3b. How to create engaging multimedia presentations on iPad

4a. How to recycle teacher and student work on iPad

4b. How to make creative study materials on iPad

5a. How to create educational clips and tutorials on iPad I

5b. How to create educational clips and tutorials on iPad II

1a. How to work with iPad for beginners and advanced users

The first basic workshop focused on the settings and general usability of the device. This included using special gestures, making reading more comfortable and using the in-built Mail app that enables accessing multiple email addresses at the same time without the need to log in every time. In the new series, we worked with the new iOS version (iOS 8), which meant also focusing on updates, in, for example, the Safari browser.

1b. How to educate yourself and work with scientific sources on iPad

The participants were shown a few ways of accessing and saving PDF documents (on cloud services) and online articles (in Evernote and Pocket). They were given tips on how to manage RSS from various sources (Flipboard), how to find, follow and become a part of a scientific community on a social network (Twitter) and where to browse for presentations (SlideShare Presentations). Special attention was given to self-education, especially in foreign languages (TuneIn radio and several TV apps). MOOC courses were discussed as well (Coursera).

2a. How to use iPad on the road and at home

During the second basic workshop, the participants learnt how to work with files stored in a cloud (Dropbox and Google Drive), how to create documents (Google Docs, Google Spreadsheets and Pages), how to correct student works in DOC (Google Docs) and PDF (Adobe Reader) formats, how to type Czech characters, how to use styluses for handwriting (Penultimate), how to organize work (Calendar, Wunderlist), how to scan documents (Genius Scan), use maps and the print screen function (Google maps) and, finally, how to relax (Breeze) and stay mentally healthy (Grid Diary, Lumosity, Elevate and Unstuck).

2b. How to collaborate over distance with iPad

We talked about how and why to collaborate with colleagues using iPad (Hangouts, FaceTime and Skype), how to view documents on iPad when it is connected as a second display, how to edit them while speaking (Evernote and Google Docs) and how to do all that using iPad only (Fuze).

3a. How to present and interact with the audience at lectures and conferences using iPad

The third basic workshop demonstrated the technical capacity of iPad when it comes to giving presentations (AirPlay service, TeamViewer and adapters/cables). We focused on working with presentations without annotating them (cloud services, slideshare.net and Prezi), on how to control the presentation remotely (Penxy) and on how to share it as a url link and use a laser pointer (Electric Slide). We also included applications that allow annotating a presentation, using a laser pointer (PowerPoint and Keynote), controlling it remotely (SlideShark) and sharing it with the audience as a url link (Whiteboard Projector and Air Sketch). Finally, the participants learnt how to successfully present to remote viewers from their homes while streaming their presentations and web cameras on one screen (Fuze).

3b. How to create engaging multimedia presentations on iPad

As an introduction, we gave the participants some tips on how to create presentations on iPad in commonly used formats (PowerPoint, Keynote, Google Slides and Presentation Maker). Then, we focused on creating simple yet effective and engaging multimedia presentations on iPad (HaikuDeck, SlidePocket, FlowVella and Prezi). We closed with guidelines on creating introductory educational videos and teasers (Videoscribe and Adobe Voice).

4a. How to recycle teacher and student work on iPad

This workshop dealt with adding voice comments to documents, pictures, photos and collages (Recording 2 and Explain Everything), turning student PDFs and DOCs into study materials (Adobe Acrobat and Microsoft Word), working with photos and pictures and creating unusual collages and using them for, for example, vocabulary practice (Bamboo Paper, Skitch, InstaPics and Explain Everything). Finally, we talked about simple ways of creating comic books on iPad (Halftone 2) and pedagogical benefits of using them in higher education.

4b. How to make creative study materials on iPad

Participants of this workshop learned how and why take lecture and conference notes/presentations to a new level by adding a voiceover comments and written annotations to them (Explain Everything). Participants also learned how to add them to a course in our Moodle-based LMS. We looked into how to spruce up materials by adding links and photos to text (Adobe Slate). Finally, other types of study materials, such as mind maps (Mindomo) and flash cards, and self-study (Brainscape, Quizlet and Bitsboard) and instant response apps (Socrative), were discussed.

5a. How to create educational clips and tutorials on iPad I

Overall, the purpose of the final basic workshop was to explain how and why "flip the classroom“, that is, how to manage seminar and lecture time more effectively. Participants were shown how to make tutorials in basic whiteboard applications (such as Educreations), and then we moved on to more complex ones (Explain Everything). We discussed a few audio recording and editing tools (Recording 2, WavePad, Hokusai, Rode Rec and iRig Recorder) as well as some video editing apps (VideoPad, Video Trim & Cut and Cute CUT). At the end, the participants had an opportunity to discuss the role of video animations in foreign language teaching (Sock Puppets).

5b. How to create educational clips and tutorials on iPad I

We finished these series with how and why combine text, pictures, annotations, video, voice comment, object animation and camera recordings to make simple and effective educational videos (Explain

Everything). We also discussed good practices in educational video production with regards to foreign language teaching and humanities.

Impact on the Project Team

With the end of the second iPad in Academic Settings workshop series, there are a few questions to be answered. Namely, is there an audience we have not reached out to yet that would be interested in another run of workshops? Are there any topics left uncovered? How should we support workshop participants who have now become advanced users themselves?

A. Is there an audience we have not reached out to yet that would be interested in another run of workshops?

During the last month of the project, we had a few teachers asking both in person and via email about the workshops and whether we were going to organize them again. These questions came from teachers who either have not attended any of the workshops or have attended some and were interested in attending more. In our experience, when there is at least one truly inspired teacher at a department, a few other teachers from that department will usually get interested in the topic as well. Having an 'iPad ambassador' within a department is probably the fastest and the best strategy of making people interested in the technology and in how it can help them in their work, which eventually leads them to our workshops. Moreover, we would like to reach out to faculty stuff who have never attended the workshops before and show them what a potential iPad has for teaching and learning. This is why, we believe, it makes sense to organize another series of workshops.

B. Are there any topics left uncovered?

With regards to the topics, we believe we succeeded in covering the majority of ways the device can be useful to a Humanities teacher. For special questions and requests, we offer individual consultations. We do not plan to extend the workshop content at the moment.

C. How should we support workshop participants who have now become advanced users themselves?

What we do plan to do, however, is to support those teachers who have become advanced users. We got the inspiration from the University of Brighton and their App Swap Breakfasts (Armstrong 2014). There, users who became experts in iPad use for education purposes have a chance to share their knowledge and experience with others. We decided to follow in their steps and provide teachers with an opportunity to meet over a cup of tea or coffee and talk about the ways they have been using or would like to use iPads in their work. For each such meeting we chose a topic, for example, presenting or instant response tools. The time will tell whether these sessions are indeed as beneficial for the teachers as they seem from our point of view.

Conclusion

We are convinced that iPad has a tremendous potential to benefit educators if used appropriately. The goal of our workshops was to promote awareness of its capacities while keeping entry-level technological literacy requirements low enough to attract as wide an audience as possible. More advanced users were welcome to join in at later stages of the project. The fact that we were able to provide the participants with the devices was also an important factor in the project success. The teachers had a chance to try them out before, if they felt like it, committing to the platform and the device. Content-wise, we attempted to narrow the topics and applications down to the ones teachers might need most when it comes both to teaching and contributing to the scholarly/scientific community. We hope to continue offering comprehensive support to the faculty stuff and to maintain the high level of workshop content in the future.

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USING TABLETS FOR PROJECT-BASED LEARNING IN ENGLISH AS A FOREIGN LANGUAGE: COURSE DESIGN

TEREZA POTUCKOVA

Faculty of Arts
Masaryk University, Czech Republic

e-mail: t.potuckova@gmail.com

Key words: Tablet, PBL, EFL, Course design, iPad

Abstract: The paper examines various ways in which tablets can be used to facilitate project-based learning through designing and piloting a course for students of English. The paper offers a review of recent scholarly texts written on the topic of using tablets. It then presents some key concepts of project-based learning and the use of tablets for language learning. Emphasis is also put on the 21st century skills and their role in PBL. The paper then tries to address the integration of technology into the English classroom and the connection between the behaviouristic approach of CALL and the way it is tied to using tablets in the 21st century. The objective of this paper is to design a course for EFL learners that would incorporate PBL and the use of tablets, in this case iPads in particular. This course consists of ten lessons. The evaluation of the course includes a feedback form that was completed by students after finishing the course. Subjective feedback is also provided by the teacher. The final chapter is devoted to limitations and suggestions for further research, which serve as a reflection to the course that is designed and taught.

Introduction

The recent development of a device called 'tablet' has changed the way we live today. Tablets are now used in our daily lives and they are slowly finding its way into almost every aspect of life including education, business, and even free-time. They are extremely easy to use and offer an almost unlimited amount of options for utilization. The field of using tablets in education has drawn a lot of attention in the last few years. Stephen Bax, who is interested in the phenomenon of 'normalization' says that:

> ''A technology has reached its fullest possible effectiveness in language education when it has arrived at the stage of 'normalisation', namely when it is used without our being consciously aware of its role as a technology, as a valuable element in the language learning process.''(Bax 2011)

In a quest to achieve normalization, the Czech Ministry of Education, Youth and Sport created a proposal for digitalizing education in the Czech Republic by the year 2020. The plan aims for integrating tablets into elementary and secondary schools. Their plan includes teacher training and the purchase of great amounts of tablets and other technological tools to enhance the learning process. In some parts of the world, it is becoming a standard for schools to use tablets. Research[1] done in the United Kingdom shows that:

- 6% of all UK schools are currently using 1:1 tablets
- 69% of schools are currently using tablets in teaching and learning
- 49% of schools without tablets are considering introducing tablets
- 42% of schools without tablets say they "might" be considering introducing tablets.

[1] http://tabletsforschools.org.uk/europe/#sthash.UU7PYCKj.dpuf

In addition to the growing interest of using tablets in education, another reason for undertaking this research is based on a personal interest in the integration of technology into teaching. In my experience as a language learner, technology was rarely used to facilitate instruction. When it was used, the lack of experience on the part of teachers did not allow for any kind of enhancement. After taking a course on using iPads in education I started focusing on tablets in general and the potential they offered for learners of English. I find tablets very user friendly and engaging for the learners as well as teachers. For those reasons I decided to design and pilot a course for learners of English that would incorporate the use of tablets, so that I could experience the 21st century classroom for myself and evaluate the possibilities it offers.

The paper aims to explore the possibilities of using a tablet for project-based learning (PBL) in English as a Foreign Language (EFL) through designing and piloting a course. A major part will be concerned with a course design for students of English that will be based on project-based learning and will include the use of tablets, specifically iPads. At the end of this work, the possibilities for using tablets for project-based learning will be analyzed. Students filled in a questionnaire at the beginning of the course as well as at the end of it to better focus the collected data. Both the teacher's and the student's perspective will be included. Students were also asked to fill in self-reflection forms concerning their work on the project.

The first part outlines key concepts in project-based learning and the use of tablets for language learning. The second part deals with integrating technology into language learning. This part is followed by research done on using tablets for the purposes of learning and the use of tablets in PBL.

The main aim of this paper, is detailing the design and implementation of a course for learners of English where PBL and the use of tablets play an important role. The theoretical basis for this chapter lies in Kathleen Grave's book about course design and The Buck Institute of Education, which provides vast resources for PBL. As a theoretical framework for the use tablets, the SAMR model, proposed by Puentedura as well as the Pedagogy Wheel, designed by Allan Carrington are used.

What follows is course evaluation. The evaluation includes a questionnaire filled in by the students prior to the course, a feedback form that was completed after finishing the course and self-reflection forms concerning students' feelings about their work on the project. Students' answers to these forms are discussed in this chapter to provide some results of the research. Subjective feedback is also provided by the teacher.

Tablets Development

There has been a lot of development in the field of tablets. Tablets are now used by people in their daily lives. ''However, the use of tablets as instructional tools in different fields of education is relatively at its infancy.'' (Savas 2014). From the limited number of studies done on the effectiveness of using tablets for

educational purposes, a few conclusions were derived: ‘‘Tablet PCs are useful in providing a more flexible way of presentation to the instructors with the options of editing and revision instantly (Xiang, et. al. 2009), in freeing students from physical barriers in assessment (Siozos, et.al 2009), and facilitating collectively discourse capabilities (Alvarez, Brown, and Nussbaum 2011)’’ (as cited in Perihan 2014).

Now moving on to the context of ELT, the studies done in this field are even more limited. The lack of professional development training seems to be the main issue in incorporating tablet PCs to the EFL classroom in some parts of the world, it is definitely the case of the Czech Republic. However, some studies do exist and they are a valuable source for teachers. One such source is the SAMR model. The SAMR model, developed by Dr. Ruben Puentedura, provides a guide for teachers who want to integrate technology in their classroom. The model consists of four levels defined as follows:

- **Substitution:** Computer technology is used to perform the same task as was done before the use of computers.
- **Augmentation:** Computer Technology offers an effective tool to perform common tasks.
- **Modification:** This is the first step over the line between enhancing the traditional goings-on of the classroom and transforming the classroom. Common classroom tasks are being accomplished through the use of computer technology.
- **Redefinition:** Computer technology allows for new tasks that were previously inconceivable. (Puentedura 2013)

The four levels are often depicted in the form of a ladder. The amount of educational enhancement goes from the bottom (substitution) to the top (redefinition). When creating tasks for learners with technology, teachers should always ask themselves a couple of questions to find out whether the desired activity benefits, in any way, from the use of technology. The SAMR model can help with that. The first level of enhancement is substitution. In this level, the task is not enhanced by the use of technology. One example could be using a word processor instead of pen and paper or writing a story. The teacher should consider what he or she will gain by substituting the older technology with the new one. The second level is augmentation. This level offers some kind of enhancement. The question to consider is whether using the technology adds a new edge to the task that would not be possible without it. For instance, if students use a word processor that has spell-check, it adds new possibilities, therefore fulfilling the requirements for level two of the SAMR model. These two bottom levels are associated with the word enhancement. Using technology according to them is with no doubt beneficial, but they do not offer anything that would be considered very creative for the students. That is why there are two more levels that are associated with transformation. They are named as such because they allow for a major transition in the learning process. The third level on the ladder is modification. For a task to be considered redefined, it has to fulfill the

following criteria. Technology is, on some level, fundamental for executing the task. Common tasks are being accomplished by the use of technology. An example for using modification would be using Google Docs for writing a story and sharing the story with classmates. This kind of task would be impossible to do without technology. The top level of the SAMR model is redefinition. Tasks designed with this level in mind are those that would be impossible to do without technology. For instance, having students write a story and then make a video of them acting it out. A traditional task, such as writing a story, reaches a whole new level by redefining it for the use of technology. The SAMR model is often used in connection with Bloom's taxonomy. Puentedura (2014) analyzes the connection in his article. He says that the two enhancement levels (Substitution, Augmentation) are associated with the three lower levels of Bloom (Remember, Understand, and Apply). The two transformation levels (Modification, Redefinition) are associated with the upper levels of Bloom (Analyze, Evaluate, Create). Figure 3 illustrates this association. To be able to use the SAMR model in practice, a lot of research is involved.

Most of the enhancement through the use of tablets desired for PBL is done through applications. There are thousands of applications designed for education, but it is not always an easy task to find the perfect application to fit a specific activity. Teachers from all over the world contribute with their findings to online discussion forums, blogs, websites and other easily accessible media. Through this cooperation, it becomes easier to create a successful lesson with tasks designed in a way that benefits the students. The following figure describes the different ways of using the SAMR model in a real classroom. The tasks below are designed specifically for learners of English who have access to tablets. A great model for choosing the right applications for ELT has been designed by Allan Carrington. He developed a chart that he calls ''The Pedagogy Wheel''. The wheel incorporates the SAMR model and Bloom's taxonomy to create a guide for anyone wanting to use technology in the classroom.

Tablets for Project Based-Learning

Let us now discuss what it really is that makes tablets an enhancement tool for PBL. In the past few years, some reports have come to light, presenting the impact of tablets for learners. Some of the studies discuss the use of iPads specifically. According to Lys (2013) ''positive learning effects have been found in reading and writing (Harmon 2012; McClanahan, Williams, Kennedy, & Tate 2012), in collaboration and engagement (Henderson & Yeow 2012; Milman, Carlson-Bancroft &Van den Boogart 2012), in motivation to learn (Kinash, Brand, & Mathew 2012; Webb n.d.), in online research (Webb n.d.), and in confidence in being in control of the learning (McClanahan et al. 2012).''

The touchscreen itself allows for a more personal connection. Godwin-Jones (2001) talks about a report done on creating mobile apps from Forrester Research. According to this report it is important to keep in mind the emotional bond that is often created when a mobile app is developed. Tablets are highly

customizable devices, in terms of apps, and therefore very personal for the users. When an app is launched on a tablet, it is the only thing visible on the screen. That is a very positive factor because it helps focus student's attention on one task at a time.

One of the greatest advantages of using a tablet, as well as other mobile devices for PBL, is that they enable students as well as the teachers to see the results immediately and allow for changes necessary within the tool and the project. The iPad, which is the device used for the course designed in this thesis, has an extra feature that other tablets do not have and that is AirPlay. Airplay enables any iPad's screen to be projected on a projector. One way this feature can be applied is by using Apple TV, which is a small black box that has to be connected to a projector. This feature is very useful for situations in which a group of students wants to show their work and present it to the rest of the class wirelessly. It works just as well with individuals and of course, the teacher. Anyone can connect to Apple TV if they are connected to Wi-Fi and there is Apple TV connected to the projector. For the teacher, the benefit lies first and foremost in the ability to move freely in the classroom while showing the iPad screen to students. Another very useful function of the iPad is AirDrop. Through this function, students can share files by simply clicking on the AirDrop icon and selecting the device of the student they want to send the file to. Learners have to be in the same classroom for this feature to work, and of course, they need to be connected to Wi-Fi. These functions have a great potential in the PBL classroom. AirPlay can be used during the process of project development, especially when a group of students wants to present their work to the other groups. It can also be used by the teacher to present language or other class materials to the students without being limited by cables.

In the case of project based learning, according to Laan (2012) ''the passive 'teacher tells students' teaching has turned to a more 'hands-on' approach with students finding the best ways to present their own results. In small groups, they will be delegated tasks and feed ideas to each other. In collaborative projects students have a chance to enhance their skills in communication, critical thinking, productivity and problem solving. '' The use of tablets promotes collaboration, which is one of the most important aspects of 21st century skills and PBL mentioned earlier. Anything done with the use of a tablet is easily sharable via any cloud service such as Dropbox or Google Drive. Most tablets have a built in camera. When students need to take pictures or shoot videos for their projects, they do not need any extra devices, they can do that with their tablet. Once they shoot a video or take a picture, there are various applications that can be used to edit the content. It makes work on the project easier for the students and the options are almost unlimited. For the most part, it is the apps that move PBL to a whole new perspective. Although, it is important to remember that even the greatest app can be used in the wrong way and create a negative learning outcome. For the tablet to be an enhancement tool, each activity has to be carefully considered,

for instance with the use of the SAMR model introduced earlier. It is the teacher who plays the most important role in the process of implementing tablets, not the applications.

Tablets can be used for all of the stages of development of a project mentioned in the beginning of the chapter as defined by Fried-Booth. They also expand the possibilities for the form of the final product of a project. For instance, students can use the iMovie application to create a video that will serve as the final product of their project.

A course design for PBL with the use of iPads is suggested as a part of research. With the limited resources for using tablets for PBL in the context of this course, the course design was made on the basis of a book by Graves (2000) *Designing language courses: A guidebook for teachers*, and the Buck Institute for Education as well as other research findings discussed in the previous chapters. The main objective of the course was to discover the ways in which iPads can be used for enhancing PBL in the EFL classroom. For this course in particular nine iPads were used.

It is of vital importance to use the iPads in a way that is of some educational value to the students. Using iPads as well as any other mobile devices for the sake of using them is the wrong way to incorporate them into education. Each activity that is designed for the use of iPads in this course was designed to somehow benefit the students. If an activity was more effective without the use of iPads, then that is the way it was done. The pedagogy wheel is one of the tools that can be used for determining the appropriateness of the use of technology for a specific activity.

The Buck Institute of Education offers vast resources for PBL. One of the resources deals with the essential elements of project design. It includes information about significant content, 21st century competencies, in-depth inquiry, driving questions, need-to-know, voice & choice, critique & revision and the public audience.

Feedback

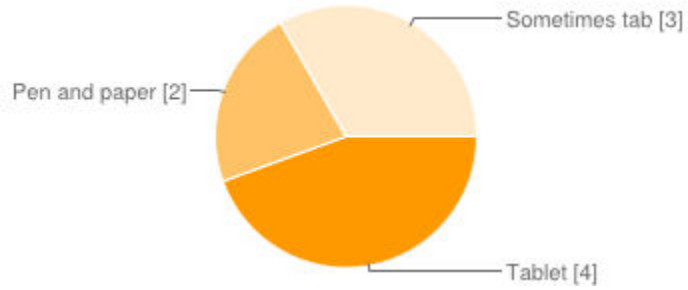
It is important to evaluate the course based on feedback from students. During the course, students filled in a self-reflection form concerning their work on the project. At the end of the course, they filled in a questionnaire concerning the course in general and their views on using the iPad. The self-reflection form used here is a form provided by the Buck Institute of Education. The filled-in forms can be found in Appendix G.

The feedback form students were asked to submit consists of three parts. The first part deals with general feedback on the course and students' views on iPads. The second part consists of questions dealing with the applications used during the course and their evaluation. The third part is an open-ended question providing students some space for their subjective course evaluation.

In the first part of the feedback form, students were asked how comfortable they felt using tablets after finishing this course. For the most part students answered that they were very comfortable with the use of tablets, only one student felt that more time was needed to get used to tablets. Students were also asked about their preferences for note taking. Throughout the course, some students struggled with taking notes on the iPad. Chart 1 represents the students' answers.

CHART NO.1- WHEN TAKING NOTES DURING THE LESSON, DID YOU PREFER USING A TABLET OR PEN AND PAPER?

When taking notes during the lesson, did you prefer using a tablet or pen and paper?



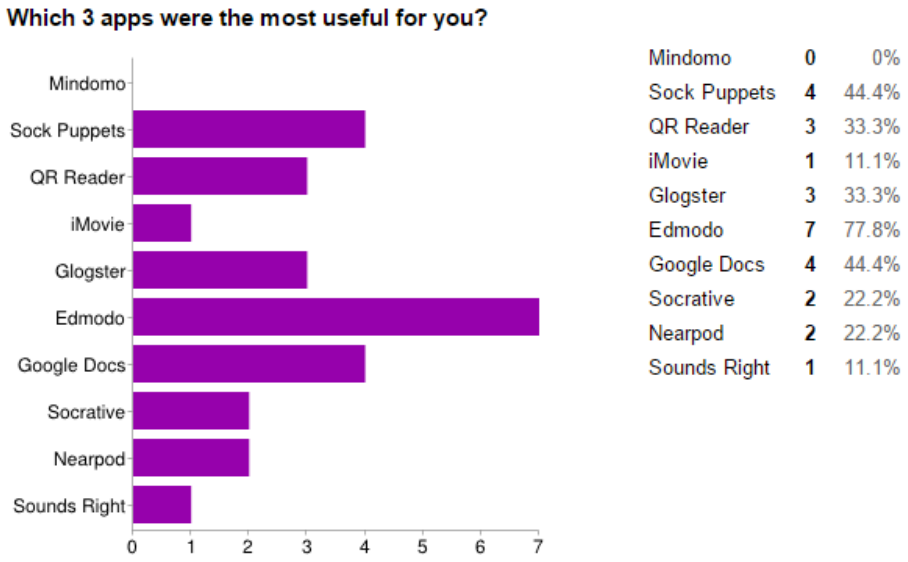
Tablet	**4**	44.4%
Pen and paper	**2**	22.2%
Sometimes tablet, sometimes pen and paper	**3**	33.3%

I was also interested in how students perceived the fact that each of them had their own tablet. They were asked if they thought it necessary for everyone to have their own tablet or whether a few tablets per group would be enough. Seven out of nine students felt that everyone should have access to a tablet. The reason behind that might be the fact that they themselves had access to tablets at all times and were not able to try working with just perhaps one tablet per group. It also suggests that they liked having their own tablet. The first part of the form is concluded with an open-ended question, asking students what the best thing about using a tablet in class was. Most answers related to the fact that tablets made the lessons more engaging and interesting. Internet access was also viewed as a great benefit. Some students appreciated that they could easily share content with their classmates through AirDrop and several students mentioned that tablets equal fun.

The second part of this feedback form deals with feedback on applications. Ten applications are evaluated in terms of effectiveness for learning, user-friendliness and the level of engagement they provide for the students. Among the most effective apps for learning according to the students are Edmodo, Nearpod, Glogster and Google Docs. In terms of the app being user-friendly, students chose Sounds Right, Nearpod and QR reader. Among the most engaging apps students chose Sock Puppets, iMovie, Glogster, Mindomo and Sounds Right. Students also had the chance to evaluate Sock Puppets and Glogster in an open-ended question. The reason for choosing these two apps for students to evaluate is that I was not sure how the students felt about them. The result was a list of contradictory views. Some students loved using

the apps while others did not. Some students admitted to not enjoying Glogster, but they could see its benefits for learning. When evaluating Sock Puppets, most students agreed that it was a lot of fun, but some admitted that they did not see how else they could use the application in education. One student thought the app had no effect on learning. On the other hand most students appreciated the fact that they could listen to their voice. The last question in this part intends to find out which three apps are the most useful in the eyes of the students. The results can be seen in Chart 2.

CHART NO. 2 – WHICH 3 APPS WERE THE MOST USEFUL FOR YOU?



The final part of the feedback form provided students with space to evaluate the course. Most students appreciated the practice of communication skills and the possibility to try using the iPad for learning English. See Appendix E for the full analysis.

Students were also asked to fill in a self-reflection form to evaluate their performance in the project. The form was adapted from the Buck Institute of Education and distributed to the students after finishing the course. The form is displayed in Figure 11. Students were asked to provide general information about the project and then discuss their work on it. Most students found shooting the final video to be the most enjoyable part of the course together with using the iPad. Among the most important things they learned during the course students mentioned collaboration, cooperation and practicing English in general. Some students mentioned that more time for instruction of navigating the iPad would be welcomed. The answers to the question concerning what students felt they did their best work on were quite varied. Some students answered that they were proud of their Glogsters while others felt they did their best job during the planning phase. The filled in forms are scanned in Appendix G.

Conclusion

The paper examined the ways in which tablets can be used to facilitate project-based learning by

designing and piloting a course for students of English. The first section of the paper presented the key concepts of project-based learning and the use of tablets for language learning. The second section of this paper was devoted to integrating technology into the English classroom.

The main aim of this paper was exploring the possibilities of using tablets for PBL in EFL which was done by designing and piloting a course. This course consisted of ten lessons taught over five weeks in January and February, 2015. There were nine participants and based on their course evaluation, they felt that the course was a success and a benefit for their learning. After piloting the course, some limitations came to light. One of them was the time devoted to technical issues. A lot of time seemed to be devoted to instructions concerning the iPad. If I were to teach the course again, I would incorporate an extra lesson for instruction of how to use the iPad prior to the course. I would also sustain from having a weak A2 student in the same group with strong B2 students as it proved to be limiting to some extent.

Tablets proved to be a very engaging tool for the students, offering almost unlimited possibilities of incorporating them into the curriculum. In terms of tablets in PBL, students most appreciated being able to access the internet at all times, the easiness of sharing files using the AirDrop function, and using the iMovie application to shoot the video for their final project. They also agreed that it is better for everyone in the class to have their own device. Among the best applications as stated by the students were Edmodo, Nearpod, Sock Puppets and Glogster. To conclude, it seems that the field of using tablets for PBL in EFL would definitely benefit from more scholarly attention.

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OTHER

DOT ENUMERATION, SYMBOLIC NUMBER COMPARISON AND MENTAL NUMBER LINE ESTIMATION SKILLS IN DETERMINING STUDENTS' DYSCALCULIA TENDENCIES

SINAN OLKUN, ZEYNEP AKKURT DENIZLI

Faculty of Education, TED University, Turkey
Faculty of Educational Sciences, Ankara University, Turkey

e-mail: sinanolkun@gmail.com

Key words: mathematics learning difficulties, canonic dot counting, symbolic number comparison, mental number line, mathematics achievement

Abstract: The aim of this study was to investigate whether it was possible to determine students with Mathematics Learning Difficulties (MLD) risk with a screening tool containing three basic number processing tests (BNPT). Participants were 478 students from 12 state primary schools in Ankara. Four tests were administered to the students. Firstly students were administered a curriculum based Mathematics Achievement Test (MAT) and they were divided into three groups as MLD risk, low achieving, typical achieving based on this achievement test. The three remaining tests, Canonic Dot Counting (CDC) Test, Symbolic Number Comparison (SNC) Test, and Mental Number Line (MNL) Test were administered to students individually. These tests were used to measure the basic number processing skills of the students. In the analyses, Inverse Efficiency Scores (IES) were calculated for two of the BNP tests, CDC and SNC. The total absolute errors were calculated for MNL estimations. The scores obtained from the BNP tests are expected to be inversly proportional to MAT score. When the scores of CDC-SNC-MNL Tests and MAT were examined, it was found that 11 of the 12 first graders, and all of the 2nd, 3rd, and 4th graders categorized as MLD risk got scores lower than grade level mean, in at least one BNPT. The results showed that screening tool has a very high potential to determine students with MLD risk at the primary school level. It can also be said that once the students' defficiencies in basic numerical skills are determined it would be possible to arrange intervention studies based on individual needs.

Introduction[1]

An important reason behind the very low achievement in math is developmental dyscalculia (Murphy, Mazzocco, Hanich and Early 2007). Two major hypotheses were suggested for the causes of dyscalculia that hinders students learning of numbers and calculations (Rousselle and Noel 2007). The first one is the core deficit hypothesis. This hypothesis claims that dyscalculia originates from a disorder in the number module or core system of number in the brain. Core number system is assumed to be responsible for caunting, calculation, and estimation of numerical quantities (Feigenson, Dehaene and Spelke 2004). The second hypothesis, called access deficit hypothesis, suggests that dyscalculia is caused by the disorder in accessing magnitudes or quantities from sysmbols or vice versa (Rousselle & Noel 2007).

Mathematics learning difficulties (MLD) can be detected through simple numerical tasks such as enumerating a countable quantitity, perceiving numerical magnitudes from symbols, numerical comparisons, and perceiving the relative magnitudes of numbers (Butterworth, 1999; Desoete, Ceulemans, De Weerdt, Pieters 2012; Heine, Tamm, De Smedt, Schneider, Thaler, Torbeyns, Stern, Verschaffel, Jacobs 2010). Some studies have found that students who were not good at these types of tasks also had very low achievement in mathematics (Geary, Bailey, Littlefield, Wood, Hoard, Nugent 2009).

Research shows that students with MLD risks should be determined as early as possible in order to maximize the help to remediate the difficulties. The importance of using multiple tasks in the screening

[1] Funding for this work was provided by the Scientific and Technological Research Council of Turkey (TUBİTAK), under the grant number 111K545.

tool was also stressed. Therefore there is clearly a need for a screening tool to determine the students with MLD risk as early as possible. This study aims at determining primary school students at risk for MLD. The scores of students with MLD risk on basic number processing tasks were compared with the age relevant averge scores.

Method

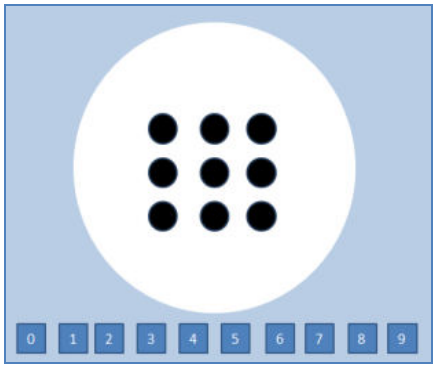
The research was carried out in 12 state primary schools in different regions of the capital city of Turkey, Ankara. Students with a prior diagnosis of attention deficit and general learning disorder were excluded from the data. Finally, the participants were 478 students; 119, 120, 120, and 119 students from 1st through 4th grade respectively. Data were collected in their regular schools in a 3 week period.

First, students were administered a curriculum based math achievement test (MAT) prepared separately for each grade level. The tests are not a general math achievement tests but includes only numbers and number related patterns and problems. Reliability and validity studies of these tests were previously carried out by Fidan and Olkun (2013). KR-20 coefficients of the tests were 0.80, 0.92, 0.93, and 0.96 for the grades 1 through 4 respectively.

Tests were administered within one class hour. MBT was used to divide students into three groups, as MLD risk, low achieving, and typical achieving. Students, then administered the basic number processing tests (BNPT) via tablet PCs, individually. In this test, there were three subtest namely Canonic Dot Counting (CDC) Test, Symbolic Number Comparison (SNC) Test ve Mental Number Line (MNL) Test.

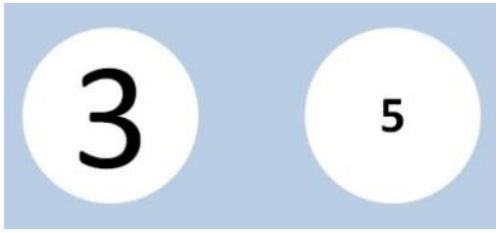
Canonic Dot Counting (CDC) Test: In this test (see CHART 1), students are required count canonically arranged dots shown on screen. The number of dots changed from 3 to 9. They should answer by touching the related numeral placed at the bottom of the screen from 0 to 9. There were 21 questions in this test. Students were asked to answer the questions as fast and accurate as possible since both speed and accuracy scores are important in these types of tasks. Latency and accuracy were recorded.

CHART 1. A SAMPLE ITEM FROM THE CDC TEST



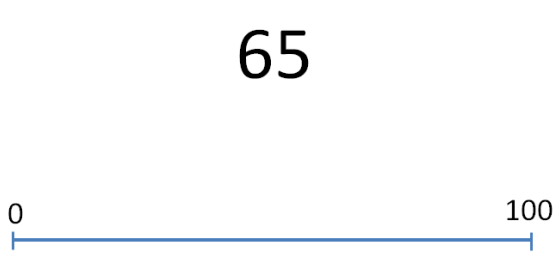
Symbolic Number Comparison (SNC) Test: In this test (see CHART 2), students were asked to compare the two one-digit numbers shown on the screen and touch the numerically larger one as fast and accurate as possible. While the numbers changed from 3 to 9, the distance between the to be compared numbers was either 1, 2 or 3. The pyhsical size of the numbers were either consistent (i.e., 8 was printed larger than 6), neutral (i.e., both 8 and 6 were printed the same size), or inconsistent (i.e., 8 was printed smaller than 6). There were 36 questions in this test.

CHART 2. A SAMPLE ITEM FROM THE SNC TEST (INCONSISTENT)



Mental Number Line (MNL) Test: In this test (see CHART 3), there were three types of numberlines (0-10, 0-100 and 0-1000) on which students were required to locate a number shown above the numberlines. There were 9 questions in the 0-10 numberline, 24 questions in the 0-100 numberline, and 25 questions in the 0-1000 numberline. The 0-1000 numberline was asked only to 3rd and 4th graders. The latency was not importan in these tests so was not recorded.

CHART 3. A SAMPLE ITEM FROM THE MNL TEST (0-100)



Statistical Analysis

First, students were divided into three groups as mathematics learning disorder risk (MLDR), low achieving (LA), and typical achieving (TA) based on their MAT scores. In each grade level, the lowest 10% was determined MLDR, 11-25% was LA, and 26% and up was TA.

The Inverse Efficiency Score (IES) (Bruyer and Brysbaert 2011) was used for the CDC and SNC tests. IES was suggested to be used when the percentages of correct answers were high, and there was high correlation between the latency and the percentages of incorrect answers. A negative correlation was expected between MAT and CDC and SNC tests. For the MNL tests total absolute error scores were

calculated, i.e., TAES=∑|to be estimated number-estimation|. Again, a negative correlation was expected between MAT and TAES.

To see the effectiveness of the screening tool in discriminating MLDR students from the others we put all of the test scores of each MLDR student in one chart. In order to be able to put all the scores in one chart, the scores (IES values of CDC and SNC, TAES of MNL, and MAT scores) were converted into t distributions.

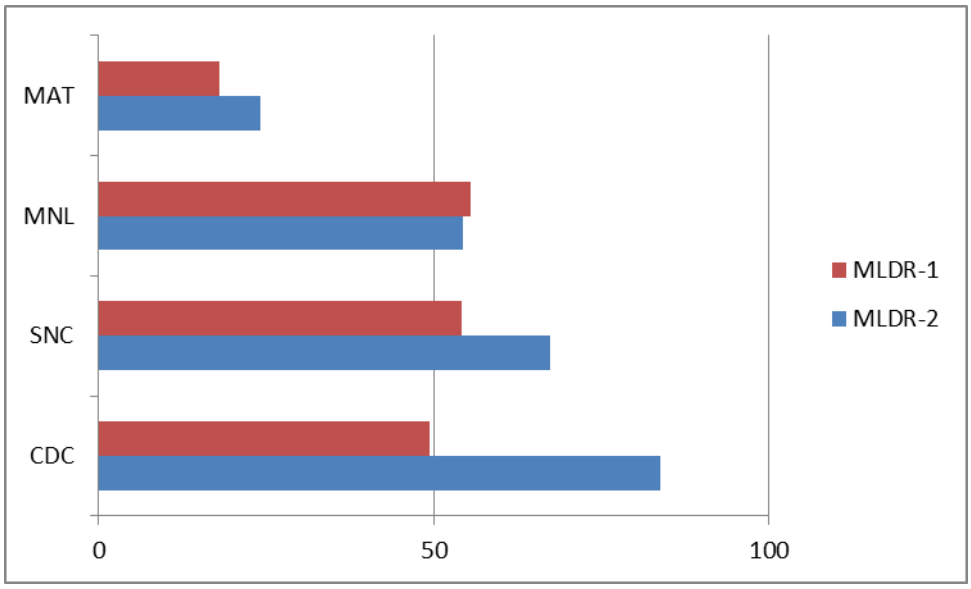
Results

In the first analysis, 12, 11, 12, and 13 students from 1st through 4th grade respectively were determined as MLDR based on MAT scores. The BNPT and MAT scores of these students were converted into t scores and put in a chart for further examination to see if any there was any pattern.

First graders

At the first grade level, 12 out of 119 students were determined as MLDR. After the analysis, it was seen that 4 out of 12 first graders got above average scores in all of the three tests. Five students got above average scores in two tests (one student in SNC and MNL, one student in CDC and SNC, three students in CDC and MNL tests). Two students received above average scores in one test (MNL). Only one student got below average scores in all of the tests. That means, this student performed as good as an average student in all of the BNP tests. In short, 11 out of 12 students got above average scores or performed worse than average in at least one of the three tests. These results showed that the BNP tests were found to be effective in determining MLDR students in the first grade. Chart 4 depicts two first grade MLDR students' test scores.

CHART 4. BNPT SCORES OF TWO FIRST GRADERS WHO ARE ASSUMED TO BE MLDR

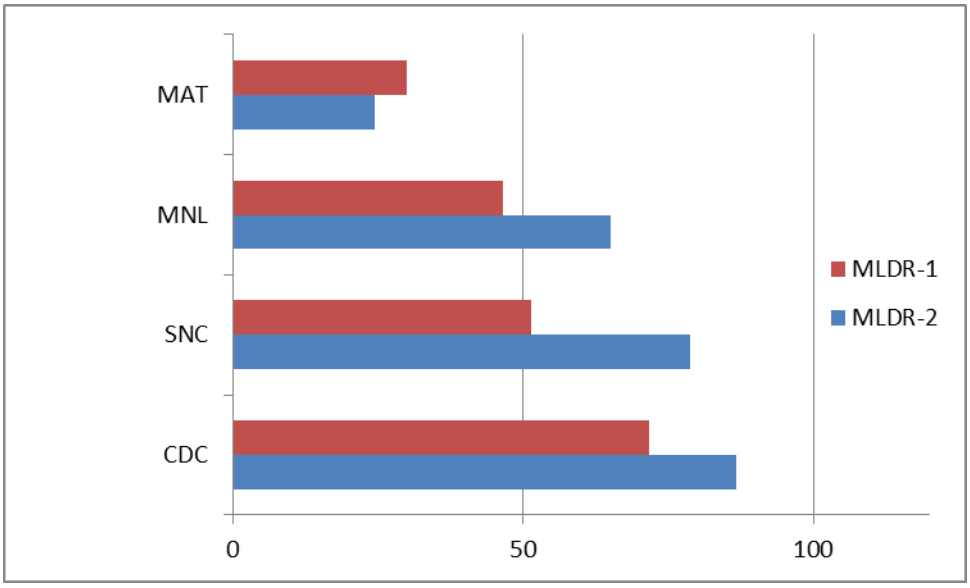


As seen in Chart 4, the first student (MLDR-1) received above averag scores in MNL and SNC tests, the second student (MLDR-2) got above average scores in in all the three tests (MNL, SNC, and CDC). In addition, the second student's latency in CDC test was extremely long.

Second graders

At the second grade level, 11 out of 120 students were categorized as MLDR. While 6 of them received above average scores in all the three tests, other 5 students received above average scores in two tests (2 in MNL and CDC; 2 in SNC and CDC; and one in MNL and SNC). In other words, all of the second graders got above average scores in at least 2 of the tests. This finding shows that, the screening tool was even more effective for the second graders than for the first graders in determining the MLD risk. The graph in Chart 5 shows the two students' BNPT scores, previously determined as MLDR based on their MAT scores.

CHART 5. BNPT SCORES OF TWO SECOND GRADERS WHO ARE ASSUMED TO BE MLDR



Closer examination of Chart 5 shows that the first student (MLDR-1) received above average scores in CDC and SNC tests. The second student (MLDR-2), on the other hand, got above average scores in all of the tests. In other words, they both performed below average in these tests.

Third graders

At the third grade, 12 out of 120 students were predetermined as MLDR based on their MAT scores. Ten out of these students got above average scores in all of the tests. Other two students scored above average in 2 tests (one in CDC and SNC; one in CDC and MNL). In other words, all of the third graders previously determined as MLDR got above average scores or performed below average in at least 2 out of the 3 tests. This finding shows that, the screening tool was even more effective for the third graders than for the first

and second graders in determining the MLD risk. The graph in Chart 6 shows the two students' BNPT scores, previously determined as MLDR based on their MAT scores.

CHART 6. BNPT SCORES OF TWO THIRD GRADERS WHO ARE ASSUMED TO BE MLDR

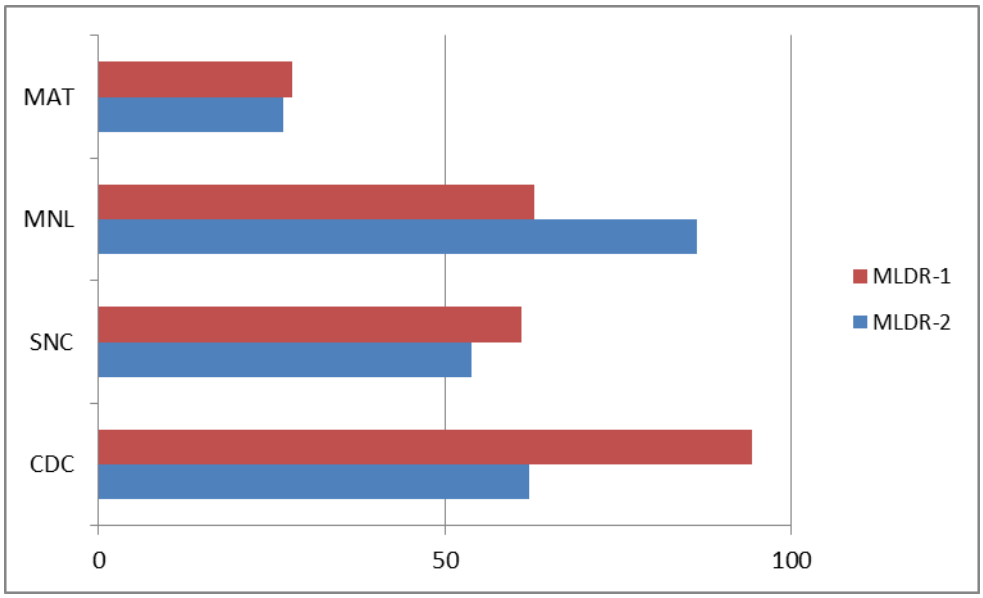
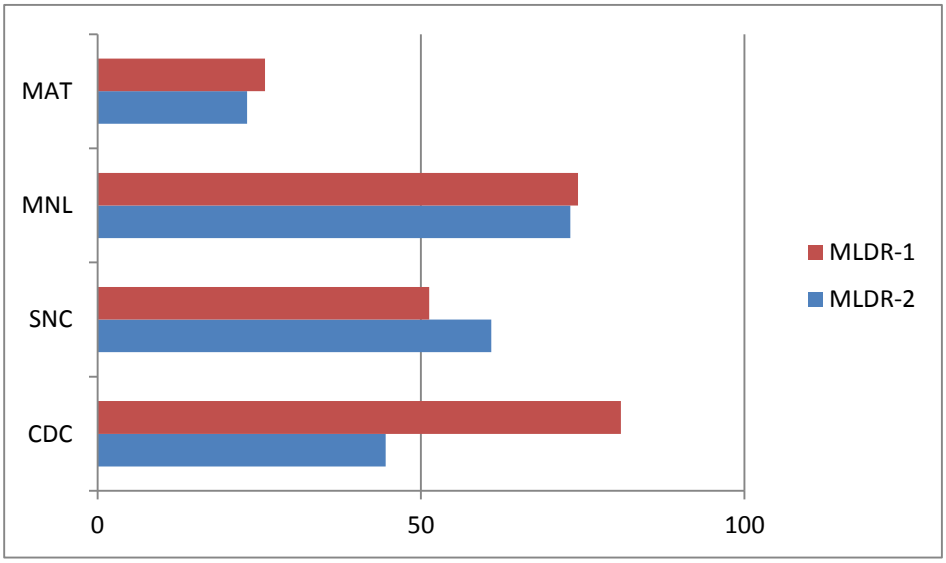


Chart 6 depicts that, the two students got above average scores in all of the BNP tests. Especially the first student's (MLDR-1) latency in CDC test was extremely long. The second student (MLDR-2) on the other hand made much more errenous estimations in MNL tasks.

Fourth graders

At the fourth grade level, 13 out of 119 students were determined as MLDR. While 5 out of 13 students received above average scores in all of the BNP tests, the other 8 students got above average scores in two tests. Four students in SNC, three in CDC, and one in MNL test got below average scores. At the fourth grade level, all of the students scored above average in at least two of the BNP tests. This finding shows that the screening tool was effective in determining students with MLD risks. Chart 7 depicts the two of the students BNPT scores.

CHART 7. BNPT SCORES OF TWO FOURTH GRADERS WHO ARE ASSUMED TO BE MLDR



A closer examination of Chart 7 shows that the first student (MLDR-1) got above average in all of the tests, while the second student (MLDR-2) received above average in MNL and SNC. The second student's latency was better than the average.

Discussion

The results showed that the basic number processing tests (BNPT) currently developed in tablet PC environment was very effective in determining MLD risk in primary school students, especially at the second, third and fourth grade, third grade being the most effective. Except one student in the first grade, all other students previously determined as MLDR got above average scores or performed below the average in at least one of the three BNP tests.

The CDC test was designed based on core deficit hypothesis. The finding that majority of the students previously determined as MLDR got above average scores in this test lend support to core deficit hypothesis. The SNC test was developed based on acces deficit hypothesis (ADH). Many of the 2nd, 3rd, and 4th graders got above average scores in this test. As claimed in ADH, these students might have difficulty in accessing magnitudes from symbols or vice versa. The ADH was also supported. Many of the students in all grade levels had above average total absolute errors in estimating relative place of numbers on the number lines. This difficulty is also explained in core deficit hypothesis.

Taken together, the currently developed BNP test were found to be very effective in determining the students with MLD risks. Except the first grade, students previously determined as MLDR in all other grade levels got above average scores in at least two of the three BNP tests. First graders, on the other hand, were newly learning to read and write at the time of test administrations. Therefore what we measure with MAT might not be their actual performance in math. This might have caused them to be placed in a

wrong group. First graders should be screened with different paradigms less dependent on reading and writing. Alternatively, first graders could be screened twords the end of the school year. Students of this age could also be given some other numerical tasks. Despite thise facts, only one student scored below average in all of the tests. So the screening tool was still effective at the first grade level.

MLDR students may not have difficulty in all of the tasks. In other words, students might be good at in one test but not so good at in other tests. Therefore, in such a screening tool it is better to include different types of tasks in order to chatch as many types of difficulty as possible.

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DIGITAL INFORMATION CURATION AS A FORM OF FORMATION OF PERSONALIZED LEARNING ENVIRONMENTS

MICHAL ČERNÝ

INTERES Project - Department of Czech Literature and Library Studies - Faculty of Arts,
Masaryk University, Czech Republic

e-mail: mcerny@phil.muni.cz

Key words: PLE, digital information curating, education, constructivism, e-learning

Abstract: Digital information curation we could define as a systematic actions leading to the arrangement of the artifacts in the collection of information that is accessible to users in a comprehensive and meaningful form, ie in a collection.
Digital information curation is a very interesting activity lies on the border of education and information sciences. For information science takes way acquisition, processing and storage of materials and documents, which are then arranged by specific way and sort. Also accepts the metadata description of materials and collections, as well as experience with creating digital libraries. Of education naturally draws way of working with materials and methods of their didactic selecting, processing or setting goals and a sense of both individual fragments of collection, as well as a whole.
This activity can stand completely out of the education process, but it has an important place in connectivism and constructivist learning. Especially in building a personalized learning environments and developing information and media literacy. All collections are formed by students themselves, teachers, librarians and other professionals and can become a natural part of the learning environment that will enable personalized education in the cyberspace.
In this paper we focus on the actual description of the phenomenon in the context of interdisciplinary links between pedagogy and information science, but also on some case studies and probe. They will be analyzing problems, but also the benefits and challenges that come with this phenomenon.
We will also analyze some competency models, on which we will try to show the key areas in which should be a curator - educator and an information scientist - educated that this activity could run really well and sensibly.

Introduction

Digital information curation we could define as a systematic actions leading to the arrangement of the artifacts in the sort of information that is accessible to users in a comprehensive and meaningful form, ie in a certain collection. It is an activity that is inherently interdisciplinary. Curator must have a good knowledge of pedagogy and psychology, as well as from information science. The following are important technical skills, visual sensibility and knowledge of the area from which the collection is created.

From the information science takes way of obtaining, processing and storage of materials and documents, which are then arranged in a certain way and sort. Research also accepts information regarding conduct or topics related to digital library. Of pedagogy, then naturally draws way of working with materials and methods of their didactic choice, processing or setting goals and so on.

In this paper, we show what is the relationship between curatorship and constructivist-oriented education, or the way in which the phenomenon of curation is related to building a personalized learning environments. We also focus on the issue of competence that the curator or teacher must have for this activity.

Constructivism

Constructivism is based on the philosophy and psychology of Jean Piaget. It works with the notion that subject and object are not strictly separated from each other, but that constantly influence each other - occur accommodation and assimilation. Both processes are always reciprocal (Piaget, 1976, 11-12).

The second starting point is the belief that rather than creating a common universal truth, constructivism leads to formation of constructs in the mind of every individual. This concept of teaching tries to bring

students to independent thinking, dedication to issues that interest them. Due to the complexity of the world is not the purpose of education to teach simple propositions, or to pass a set of knowledge and skills, but rather to focus on solving complex tasks and competence development.

Typically is associated with a heuristic or discovery teaching and learning competency. Emphasis is placed on the independence and autonomy of the pupil. The teacher is rather a guide, a man who expresses surprise or helper, not the one who controls the educational process (Mayer 2004, 14-17).

Constructivism is closely connected to connectivism, which emphasizes the role of computer networks in the education process. On the internet there is the possibility to search for information, as well as to publish them. Pupils also follow through it social contacts and build communities. If modern teaching does not come from some of the alternative pedagogies, will probably associated with constructivism (Siemens 2005, 3-10).

Curricular reforms, which he recently underwent both elementary and middle school also accentuates the constructivism. Thus educational theory, which puts at the heart of interest not subject matter, but the individual, his previous interests, attitudes and so on. Teaching should be conducted in such a way as to heuristically (by independent discovery activities) learns every individual. This of course puts great demands on both, the preparation of lessons, as well as to individualize the entire education, which must respect the different mental concepts, specifics, but also learning styles of individuals.

The whole education tends to be personalized environment in which educational content and form will tailored for individual students. Linked to this is consideration of whether it would be effective to move from a model of learning by individual disciplines to a model that would be based on competencies. Each student would be able to expand its portfolio of competencies at their own pace, according to the distinctive tastes, interests and attitudes. The teacher in this model performs primarily as a particular mentor, which with selecting appropriate "competence package" helps (Hockemeyer 2003, 80-81).

Digital information curation

Term curator comes from the Latin “curator”, that means a guardian or trustee. He is a man who creates collection of certain objects. In the ordinary sense it is a person who creates a whole from fragments. For example, on the common exhibition selects images, creates labels, order and placement of works reflects on the visual appearance of the exhibition or catalog. It is the man who creates the whole context and meaning of the exhibition, which is experience for the audience. (Mihailidis and Cohen 2013)

We can distinguish digital curator and curator of information. Information curation is very extensive term and includes any activity associated with the curatorial information artefacts. (Whittaker 2011, 2) Curator acts as a sieve which selects objects or structures that the user will be able to view. Performs evaluation of resources and so on. It should prevent to get the final product information redundancy, poor

or fragmented. This activity is largely associated with the information professions which are connected to the positions of librarians, authors of specialization gateways and databases. (Higgins 2010)

Digital curation is a set of activities that lead to the preservation of digital materials and make them accessible. Unlike the information curation here only works with digital objects. For example, the Digital Curation Centre (DCC) is considering three levels - preservation of digital objects (this activity is related to the digitization of collections or libraries), disclosure of the content and adding some added value or context.

And in the case of educational facilities and learning environments we can talk about curation of content that is closely tied to digital curatorship. Online curator (if we use the concept of Bořivoj Brdička (2013)) is a man who tries to create informational and interesting collections that are typically used primarily for education. Naturally, it offers connections curation and competency-based learning (What is one of the important elements of constructivism), each competency is associated with a certain curatorial work.

Steve Whittaker - author probably the most famous model of digital information curation - said that information curation is an activity which has three basic phases - getting information, their management (especially organizing) and presentation (at the right time, as appropriate). However, in order to set appropriate model of the information curation, it is necessary to know the information behavior of those for whom we perform curatorial activity (Whittaker 2011, 4-6).

Curator is the translator between the content of a complex and often not easy to understand contents and the viewer, a student or just a random user who has an interest in the issue. Curator of the information will it not only well treated, but also organize and describe the way that they will understand the user's language and style of thinking. This certainly does not mean using colloquial speech or go into a simple vocabulary, but actually organize things so that the anticipated viewer could easily absorb and concentrate primarily on content.

Now the knowledge of users is extremely important. What is deeper and more complex, the better results can be achieved. We usually are not enough to superficial information that the target group uses a specific tool, but it is necessary to understand how it is used and for what. Various forms of education and various educational aims may continue to work with resources significantly different. Curation itself does not have to be at first sight quite clear and obvious.

As already mentioned, one of the simplest models of information curatorship is that which comes from Whittaker. The model emphasizes the relationship between curating information and personal data management (PDM) (Whittaker 2011, 6). PDM is a set of activities and competencies that are for today's internet and tactile devices users often quite natural - the ability to work with bookmarks, save and write

notes online, build a personal information structure that allows us to go back to the important things or information on we encountered (albeit initially only by accident).

The three-phase model is valid but equally well for personal use as for information curatorship, which typically leads to a wider audience. It also follows that being a curator is a necessity today's information society, not an option (at least at the basic level) for a few information professionals, librarians or progressive educators.

The first phase - data acquisition. The first phase consists in curation of information retrieval. One should systematically build database sources from which they can draw and which brings him a profit. In this section, it is also necessary to carry out filtering of data - are relevant quality, interesting, will ever be need to something? How can they help me personally or my students? This phase is crucial also in that it requires gaining access to quality resources as much as possible. In the case of academic institutions are prepaid database, but own EIR are also accessible for libraries. For pedagogical community then there are many repositories, which can be different ways to use and benefit from them.

This is one of the key phases where it can be expected that information professionals to actively work and promote electronic resources. We will not at this point go into a deep case studies, whether and why they EIR are not very used in both academic environment as well as outside of it. Curation should clearly be directed to materials that appear to be interesting and relevant for the topic made available, possibly supplemented by a form which will be the target group well-usable.

The collection does not necessarily represent some static, a fixed product, but normally it works with RSS feeds and other tools for content delivery. Not as a problem, for example, choose the appropriate section of the magazine selected it, and actively classify to collections.

The second phase - management. This stage consists in the fact, that it is necessary to find a system which allows the information store some meaningful way. The topic storage and processing of EIR, but in this context and other materials, is very extensive and complex. Can be carried out both on a professional level, which is used robust protocols for data harvesting and subsequent computer processing using regular expressions to obtain a set of data with which we work. But we can also use the much simpler methods, such as working with your own Wiki, tools for managing notes, simple digital library and so on. The important thing is that we had the opportunity thus stored and managed data in some way to find and work with them. Before we start with the actual processing of the data, it is necessary to have at least a general idea about how to handle the data we want, what we need to process metadata, or if we cannot help document database and manipulate files by using full-text search or something like that. For large projects we are then usually need a combination of various methods (Benbya, Passiante, Belbaly 2004, 215).

The third phase - recovery. The capacity of the recovery are relatively abundant. First, it is necessary to establish educational objectives, ie to what and to whom will be given collection designed. Accordingly, it is then possible to select different forms, such as a blog, bulletin board, website, digital library, multimedia presentations and so on. At this stage, knowledge of information behavior of students or other users is the crucial one, you can extract a lot from it and also a lot to lose. Currently, it is necessary to ensure precepts design that is functional yet aesthetically. Inappropriately looking, outdated Web pages with frames are now able to study hard to motivate. Also, visual appearance, layout and work with the story are part of this creative activity.

Personal learning environments

In the context of a constructivist and connectivist teaching created the concept of personal learning environments (Personal Learning Environment - PLE). Discusses over open and closed system of PLE building. Open system is based on the idea that each student himself chooses applications, tools and resources that suit him. Such a model well reproduces situation that sooner or later everyone gets in everyday life. Significantly increases the demand for information literacy, and the teacher has little opportunity to intervene thus conceived system.

Closed model has a more conservative impression. School, library or teacher creates a learning objects (ie performs the process curator activities) and offers more quality resources and applications. The student then within a school environment created or recommended by the various training modules and resources to arrange as it suits him. Such an approach is advantageous in that the teacher and student are sure that there should be no significant formation of misconception or complete departure from school curriculum.

Open access provides the option where the entire personal learning environment cares student and creates it yourself, or can be found the fairly frequent community model in which each collection manages a group of people, either on the basis of clearly pre-defined obligations, or purely freely and democratically. It is evident that an open model will place greater demands on the activity and independence of the individual, but it corresponds well with the constructive theory, develops autonomous learning and the independence of the individual.

Both the first and the second approach has of course a number of advantages and problems, and it is not possible to say some universal recommendations. Obviously the ideal would be a gradual transition from a closed to an open model where the students are taught the build environment and affect more and more themselves. It is therefore a process analogous to what we reported about the information education.

Usually they are given three steps as part of the design PLE:

1. Setting educational goals, ie what we want during the schedule to achieve.

2. Control of self-education in terms of content and processes to determine the time when it will devote, resources from which we draw and so on.
3. Communication to other manner similar to 'education. This aspect is very important - building a community of education and learning, opportunity to address similar problems and experience should be an integral part of learning. (Van Harmelen 2008, 40-41).

All three steps are important to functional setting of PLE. Setting goals is also required for personal use (if no one set limits, mostly in vain falters). It is appropriate to provide a clear schedule of tasks, milestones and evaluation processes. Do not go for tests in the classic sense, but we can say that by the time we read the book, calculate an exercise or something similar. Bulgarian proverb says that "Who doesn't know where is going, he arrives somewhere else", and in the case of education, this can be obviously applies too. If we use the PLE as a tool for the individual work of students, it is necessary to make the approach most participatory and partnership, to learning and educational goals set together with him. (Van Harmelen 2008, 35-41).

In the second step it is necessary to select the appropriate tool set and procedural aspects of the process. It is the design of the educational environment. Well-chosen tools and strategies for dealing with them represent a large part of the success and could not be underestimated. You can enjoy a classic e-learning tools, but also applications like Netvibes, ProPage, Jolicloud etc. Therefore tools that are based on the idea of working with widgets of various kinds. (Youjing and Wujing 2011, 6520-6522) Today can be found also the fact that widgets are used directly in the operating system Android.

In the field of pedagogy we can also recommend Scoopit or Edmodo that are designed specifically for learning and enable good cooperation for individuals among themselves, and also in some ways working with the role of the teacher. (Crompton and Loertscher 2013, 21-22) One can however uses also a number of other instruments, such as the Curator for iOS. But it is popular to work with digital libraries or Tumblr too. Very interestingly also works Trello, which primarily serves for the organization of tasks, but it can be well used to working with sources, notes and so on.

An interesting experiment in this regard seems ROLE, which is an experimental psycho-pedagogical project seeks to develop a comprehensive PLE, on the basis of small widgets and still in a relatively uniform and nice-looking environments (Govaerts, Verbert, Dahrendorf, Ullrich, Schmidt, Werkle, Law 2011, 125-138).

The third area is what is commonly referred as social learning. Thus building up social ties and contacts to persons or groups that are engaged in similar activities as we do. That may be people who can fulfill the roles of classmates and learn with them, as well as leaders of the industry, the elite, which is good to see that men keep track of what is happening in the field really interesting and inspiring. Both are equally

important. Thanks to modern technology, students can watch Chomsky or Penrouse, which can give their relationship to particular disciplines whole new dimension. Meanwhile, most of information and assistance to a person usually gets in groups where everyone is "in the same boat," something to learn, to experiment with something together, so that solves the same problems.

Examples of competency models

At this point we should look in more detail, such competence should be equipped a digital information curator, which focuses on the process of education. The literature in this regard is not uniform and it should be in a position apparently seen as the intersection of teaching and the profession of librarianship. For example, in Article Competencies Required for Digital Curation: An Analysis of Job Advertisements defined six basic curatorial responsibilities (or more areas of competence). (Kim, Warga, Moen 2013, 73-79).

1. Communication and presentation skills that target both the user (in our case a student) and also for the contracting authorities 'library' and colleagues. The ability to explain what the collection contents, why would anyone should use and how is extremely important. It decides whether its creation has a sense.
2. Technological skills are associated with the ability of man to work with the tools and technologies that will allow the process of curating actually use. Here you can see a great variability in individual specific positions and approaches.
3. Industry-third-orienteering skills are applied in the fact that man is able to predict the development and direction of the industry and technology. In order to have the curatorial work of some long-term added value, it is necessary that its design and technical implementation of "one step ahead" compared to the period's mainstream.
4. Managerial competencies related to the fact that only rarely can the whole process to implement a single person - from technical design to concrete implementation in educational process. It is necessary that he could not only communicate with people, but also to manage, implement and evaluate the design of all components of the project.
5. Competencies for design of objects and services are essential for a good pedagogical grip, didactic correctness and appropriateness. In this context, it underlines the role of design services - primarily the result should reflect what the institution or students need.
6. System's and analytical skills serve to the ability for design of the entire system in a single interconnected, technologically and educationally robust unit. It is not appropriate to create a series of particular isolated solutions, but rather strive for a robust integrated solving.

A somewhat different perspective offers the article A Sample of Research Data Curation and Management Courses, which is much more focused on competencies, which could be rather associated with the position of the digital librarian. The primary task is choosing the correct data format for storage

and other uses, and also with a view to the future, creating sets of objects with quotes and other sources and metadata description. Then there is the care of the archiving and retrieval of data or even the creation of strategies and plans for long-term data management within the organization.

While in curatorship in the context of libraries can be traced back at least some orderly line, if the teaching profession, it is necessary to work with a teacher competency model. These often do not reflect all ICT and curatorship are explicitly not engaged. May be, for example, based on an international career ISSA Quality Framework, which is defined by the following areas of the educational process:

- communication,
- family and community,
- inclusion, diversity and democratic values,
- planning and evaluation,
- educational strategy,
- learning environment,
- professional development. (Krejčová and Kargerová 2003).

Another division offers such as the Professional Standard for Dutch Teacher Educators:

- interpersonal skills,
- teaching skills,
- professional competence and didactic,
- organizational skills,
- skills for collaboration with colleagues,
- competence cooperation with the environment,
- competence for reflection and self-improvement. (Koster and Dengerink 2001, 347-350)

Under this model can already be seen fairly close link between curatorial and pedagogical competencies, especially at the level of communication, management and evaluation. Teacher in contrast to the curator must have extra didactic competencies (professional and industry) and pedagogical, otherwise comparing competency models are very similar.

The third competency approach to the teacher's standard is the current Czech Ministry of Education, Youth and Sports document entitled Framework of professional qualities of the teacher, that is closer to the mentioned document of ISSA. According to it, it is necessary to study eight areas of teacher's quality:

- lesson planning,

- learning environments,
- learning processes,
- evaluation of pupils' work,
- reflection of teaching,
- school development and collaboration with colleagues,
- working with parents and the wider community,
- professional development of teachers. (Tomková 2012, 13)

Because that digital information curatorship should be part of - at least partial - teaching profession, it is necessary to try to incorporate it in some of these areas. Will most probably interfere with the first three. For system solution will be curatorship also build on the sixth point. If we consider the data-driven education, so naturally there will also be an evaluation and assessment competences (ie 4 and 5).

Also important is the competency model by TPCK (Hechter, Phyfe, Vermette 2012, 140-146), which works with three basic areas of competence of teachers – in the first area there are the pedagogical and psychological competencies that include traditional disciplines such as pedagogy, general and special didactics, education and developmental psychology, etc. The second area is the knowledge of the subject, which the teacher teaches. Now it is possible to identify two sub-areas - it is not only the knowledge of relevant scientific disciplines (physics, chemistry, or perhaps history) but also the appropriate didactics to be accorded status of an independent discipline. The third area is technical and information skills. In them, may be identify the area of computer literacy and skills associated with the operation of modern teaching aids, and information literacy.

We can thus conclude that digital information curatorship is - if we understand it in the context of educational facilities and sets - very closely tied to the skills associated with the profession of teacher, but in some areas, it may be necessary to carry out their expansion, particularly where it comes to technical skills and metadata. On the other hand, we can say that when enforces adaptable model of teaching (and all of it linked concepts), will be teacher "convicted" to the curation.

Several curatorial experience

At this point we would like to offer a view of two curatorial projects, which took place at the **Division of Information and Library Studies** at Masaryk University in Brno and curating closely related. We will not offer any systematic research, but we would like at this point to offer at least basic information and results.

The first project was connected with the project Inspiromat (http://ceinve.tumblr.com/), which was implemented within the project CEINVE. It was originally created for the platform Tumblr from where he

was briefly moved to Blogger. The operation was active from fall 2012 to spring 2014. Its purpose was to provide students with information literacy courses to continue their studies even after their termination and possibly to expand their horizons in other related areas. It was created seven categories:

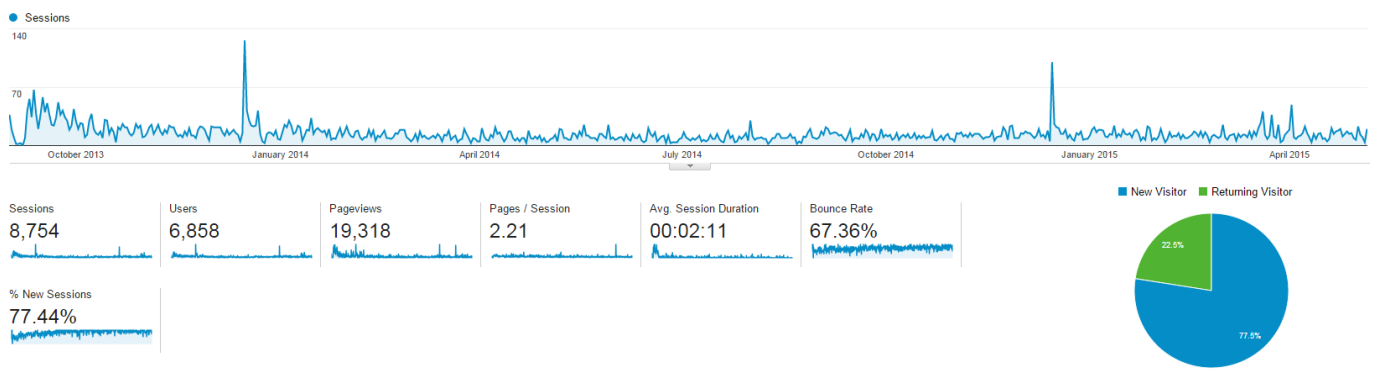
- Thinking and creativity
- People
- Book
- Tools
- Graphics and Design
- Video
- Mishmash

The last category was originally free as indeterminate, but gradually transformed the topic of education. Users can either read the messages in chronological order or filter them by those categories or keywords. Students but unfortunately did not show sufficient interest of content and project that was loosely closed. Here are some data that we have managed to get through Google Analytics:

- Monthly visits were around one thousand visits
- During an average visit was displayed for approximately 2 pages
- The percentage of return users were 44%
- 35% of visitors were from Brno, 17.5% from Prague, other cities had a share of more than 4%
- Tablets and mobile phones had only 3.6% of visits.

Data about behavior of users are also relatively interesting - most often were used categories of creativity (990 visits), followed by education (379 visits - but that does not originally own category, it is therefore purely on the visit via a click on the tag listed in one of the cells) and graphics (337).

CHART 1. ATTENDANCE SUMMARY OF INSPIROMAT.CZ

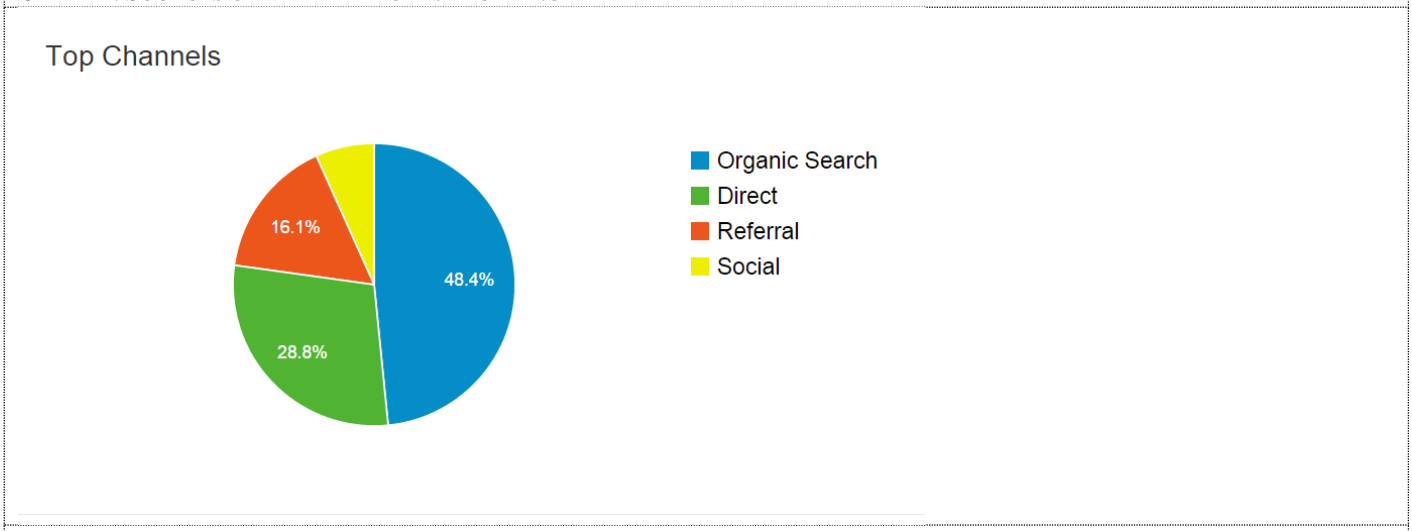


SOURCE: GOOGLE.COM/ANALYTICS/ 2015

Commenting on the above data it is possible to make a few notes - the average number of pages viewed per visit may cause a small impression, but the site was designed so that the majority of content was possible to get directly from the front page. Viewing the two sides may not correspond to only one reading comprehension (text + title page), but also click through from the front page to the tag. They were also relatively frequent clicks on infographics that are do not appear on the front page large enough for comfortable reading.

The data implies that Google has generated the most visits (37.7%), followed by direct visitors (28.4%) and Facebook (10.0%). Facebook then probably will include visits to most of the courses trainees, but not in the current year, but a cross-section of these. For the original audience and service served between 10-40% if we assume that direct traffic consists of just students.

CHART 2. SOURCES OF WEB TRAFFIC INSPIROMAT.CZ

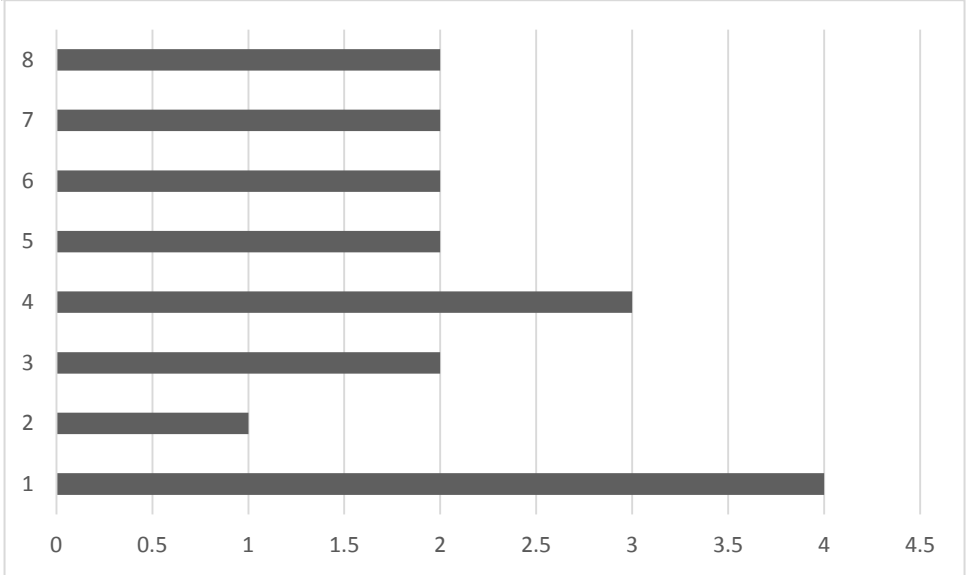


SOURCE: GOOGLE.COM/ANALYTICS/, 2015

Reasons for termination of curatorial activities were two - firstly minor traffic that failed to increase in the long term, and then the intensity of creation the contents, which has been found for the team of authors too high. Interestingly, it has already generated content still has an almost constant attendance about 15 visits a day after more than a year after the end of an active contribution.

Second curatorial project at KISK was associated with the use of Google Classroom as a learning environment for students enrolled Educational Technology, which took place in the autumn of 2014. They were students of first and second year master's program. Google Classroom is not a conventional LMS environment, but rather a platform for digital information curatorship or support for an inverted class. A pilot research, which was performed on students (return of the questionnaires was 50%) did not produce a clear positive or negative aspects of the system. Both positive and negative feedback how to use the principles of curatorship - sharing documents, discussion about them, etc., as the environment itself were approximately equal, as compared with LMS Moodle or e LMS IS, which uses Masaryk University.

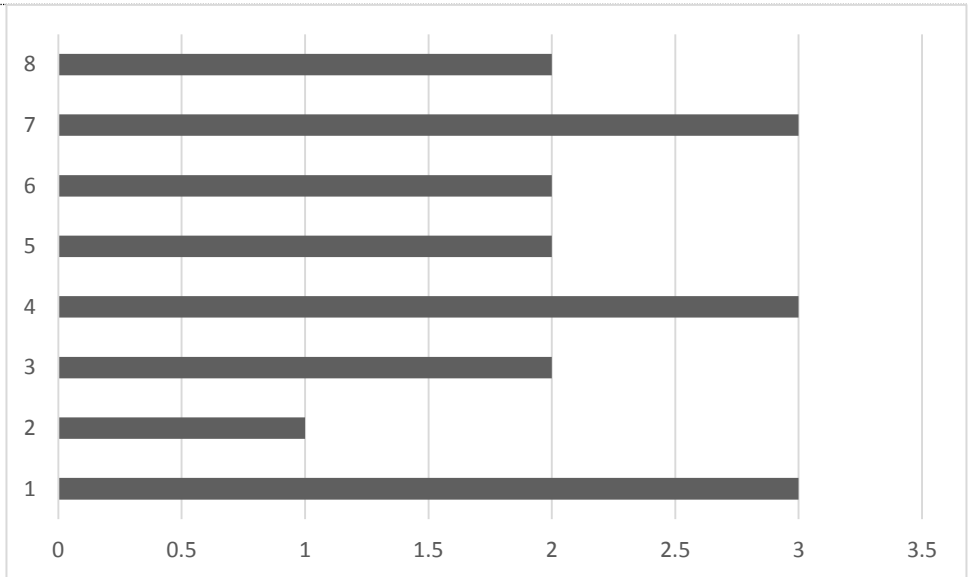
CHART 3. HOW DO YOU WORK IN AN ENVIRONMENT OF GOOGLE CLASSROOM?



The horizontal axis is a trademark of flow of the process (1 the best and 5 the worst), the vertical axis number answers.

The answers can be selected as: "Well, I focused there, it was more intuitive than Moodle, everything was in one, I did not have to look at the forums, each post is further commented, and I could from someone get their feedback. Overall satisfaction." Another student, however, states that: "The environment in which they are stored in individual lectures and assignment of tasks is a little broken. It is badly visible, where one module begins and where it ends, where is the task. It would need a stronger division, that's blended."

CHART 4. WITH GOOGLE ENVIRONMENT CLASSROOM I:



The horizontal axis is a trademark of flow of the process (1 the best and 5 the worst), the vertical axis number answers.

For questions about how you work with the learning environment, the average answer was 80 %. Students evaluate the deployment of the Google Classroom (http://classroom.google.com/) in teaching in dominant majority as a major change for themselves as also for teachers. This may imply that they reflect a certain change in the paradigm of working with materials and learning process. The overall impact on the

learning environment was seen as slightly positive (negative was one reply, positive three and four neutral answers). Through the above it is interesting to note that seven of the nine people could imagine use Google Classroom in teaching and only one should be in any case inapplicable (the last person would not want to to work in education).

Conclusion

Relationship between digital information curating and modern education, or the building of a personal learning environment, is very tight. Typically today it is not just about individual fragments, such as lone videos, articles or websites, but they are increasingly becoming part of the whole courses implemented by e-learning (typically distributed as OER, the majority are MOOC courses). Also begin to formed a web environment, such as Bibblio (http://bibblio.org/), which allows each individual curating independently perform. In this context, it seems clear that there will have to quickly modify competency models for teachers, as well as librarians and especially the students themselves. For them will be curating one of the competencies that are necessary in the information society.

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SOCIAL NETWORKING SITES IN HIGHER EDUCATION: POTENTIAL BENEFITS AND DRAWBACKS

JURAJ DATKO

Department of Language Pedagogy and Intercultural Studies, Faculty of Education, Constantine the Philosopher University in Nitra, Slovak Republic

e-mail: juraj.datko@ukf.sk

Key words: Social networking sites, higher education, benefits, drawbacks

Abstract: Recently, social media, particularly social networking sites such as Facebook, belong to the daily reality of most university students. We target social networks from an educational point of view, pointing to their potential educational value; and hence, the proposed theoretical paper aims to summarize potential positive and negative implications of social networking sites (mainly Facebook) for higher education.
The meta-analytic approach to the relevant research dealing with social networks in higher education enabled us to create inventories of potential benefits and drawbacks of social networking sites for the tertiary level of education. Among other positives, Facebook has the ability to substitute course management systems. The negatives include a significant negative correlation between time spent on Facebook and academic performance. In conclusion, the reviewed research on social networking in higher education proposes mixed results, although a slight majority of authors report positive impacts of social networks.

INTRODUCTION

The debate starts with arguments from a philosophical point of view. Selwyn (2010) claims, that three inter-connected concepts support the use of social media in education: a.) changes in the nature of learners, who are now highly connected, collective and creative; b.) changes in the relationship between the learner and knowledge consumption and construction; and c.) emergence of education driven by the user. McLoughlin and Lee (2010) argue that one of the key principles of social constructivism – the view of learning as being conversational and collaborative in nature, can be applied in social-media-supported education as well, since social media enable dialogues, discussions, shared activity, collaboration, active participation, interaction, or both personal and mutual meaning construction. According to Hung and Yuen (2010), the use of social media (and particularly of social networking sites) in formal education can be supported also by the situated learning theory (SLT) which extends the notion of knowledge construction via setting the learning in a particular participatory social context and physical environment (e.g. as in a course Facebook group). From the SLT perspective, learning becomes integrated within a "community of practice" (Mills 2011, p. 349). Lave and Wenger (1991) suggest that in a community of practice (such as an EAP course Facebook group), members of the group learn from interactions with other group members (e.g. peer communication about unfamiliar concepts in the study material), collectively share and create resources and practices (e.g. jointly developed collection of resources on education systems in some of the English speaking countries), and get opportunities to grow on the personal, professional and/or intellectual level (e.g. improvement in students' ability to process facts, ideas, and thoughts from multiple sources). Social constructivism and the situated learning theory imply a perspective for utilizing social media in higher education, mostly due to their participatory, collaborative, interactive and social aspects. Moreover,

the ongoing changes in students' nature and their approaches to knowledge creation and the emergence of user-driven learning seem to support this direction.

METHODOLOGY

The presented paper inspects the potential educational value of social networks (such as Facebook) and aims to summarize potential benefits and drawbacks of using social networking sites in higher education. The presented literature review is based on analysis of selected journal articles that deal with the topic of social networking sites (SNS) in higher education. The research material includes twenty-five research articles published in twenty scientific journals with different focus areas such as computer assisted learning, online education, education technology, art, environmental and medical education, media, or social and behavioural sciences. The analyzed papers were acquired via Google Scholar, Science Direct, ProQuest and ERIC databases. Their publishing years vary from 2007 to 2014. Our meta-analysis incorporates three main analytic categories, namely research aims, samples and results of the selected scientific studies. It is also important to notice that a dominant part of the reviewed research is based on subjective theories, including participants' views, perceptions, opinions, or attitudes, as reconstructed using questionnaires or interviews.

POTENTIAL BENEFITS AND DRAWBACKS OF SOCIAL NETWORKING SITES IN HIGHER EDUCATION

The philosophical assumptions about using SNS for educational purposes seem to be promising. However, the reviewed research on social networking in education proposes mixed results, although the majority of authors report positive impacts of social networks.

King et al. (2009) integrated an educational social networking environment into a healthcare course and found that SNS facilitated effective communication among students. Brady et al. (2010) surveyed North Carolina State University students' perceptions towards using Ning for learning purposes. Seventy percent of the participants (N=50) agreed that Ning offered more communication opportunities than the traditional classroom setting, while (82%) reported that this social network was helpful also in out-of-the-class communication (ibid.).

Ryan's et al. (2011) qualitative approach revealed that Facebook helped the research subjects (a set of doctoral students enrolled in a methodology course at a U.S. university) to adapt to their study programme and life in a new cultural environment, and thus had positive influence on community building and socialisation. Based on the responses of 120 freshmen enrolled in an elective course for students of architecture, McCarthy (2010) concluded that a vast majority of the research participants (95%) felt that the integration of Facebook helped them in developing peer relations. Similar results were presented by Schaffhauser (2009) who studied two teachers' classroom experiences with SNS (including Facebook) and found that social networks aided in demolishing "barriers" between learners.

Ophus and Abbitt (2009) studied university students' perceptions (N=100) towards the use of Facebook group as a biology course supplement. The participants indicated communication with their classmates (95, 5%), posted study materials (86,3%) and schedule views (82,8%) as the main benefits. A later study of university students' perceptions of Facebook utility by Irwin et al. (2012) proposed results comparable with the previous findings. More than two thirds of the respondents (namely 78%, N=135) reported that it could be an effective learning tool, while increased interaction, participation in course discussions and access to notes were highlighted as the most likely outcomes (ibid.).

Jong et al. (2014) found that from the research sample (261 Taiwanese university students), (59%) admitted that they wanted to use Facebook for educational matters (e.g. to discuss unknown concepts, problematic tasks and course information with their peers). This implies that Facebook usage is for at least some of the participants driven by educational purposes. Interestingly, (81%) of the research subjects reported that they have already experienced educational use of Facebook. Besides these results, "[...] (a) the convenience in sharing educational resources, (b) immediacy of learning what teachers posted on the Internet and (c) interactions with other users [...]" were considered as the main positives among the students (ibid., p. 210).

Another research project, aimed to determine the educational value of Twitter, also mentioned some of the benefits discussed in the previous two paragraphs (namely peer interaction, immediacy of feedback and access to study materials) and added several more. This semester-long study conducted by Junco et al. (2011) at Lock Haven University concluded that Twitter can be used to involve students in ways that are beneficial for their psychosocial and academic development. These potential benefits are applicable to Facebook as well, and they include (besides the already listed) opportunities and motivation for active learning, independence from time and location, and ability to repeat the course material as much as desired (ibid.).

There is also evidence that proves Facebook's ability to substitute traditional course management systems. After analysing Likert-type data from Singaporean teacher trainees (N=28), Wang et al. (2011) found that Facebook was viewed as a successful LMS platform (scoring 3,9 in a 5-point scale), although it did not support direct upload of course materials in pdf, doc, or ppt formats at that time. In a different study, conducted by Schroeder and Greenbowe (2009) among undergraduates enrolled in an introductory chemistry course at Iowa State University (N=128) and based on the analysis of students' postings in WebCT forum (a course management system) and in the course Facebook group, the authors revealed that although only (41%) of the participants followed the Facebook group, the number of postings was almost four times higher than in the WebCT forum (67 compared to 16), and the patterns of communication appeared to be more complex.

There exist numerous other authors who point to benefits of social networking for formal education, including Robelia et al. (2011) – environmental learning, Durkee et al. (2009) – e-learning, Talug (2012) – lifelong learning, Shin (2010) – art education, etc.; however, there exist a minority of researchers who are cautious in over-privileging this emerging educational perspective. Before moving to the research results that present negative implications of using SNS for formal educational purposes, we summarise the already mentioned positives in the following table (Tab. 1).

TAB. 1 – POTENTIAL BENEFITS OF USING SOCIAL NETWORKING SITES IN HIGHER EDUCATION (BASED ON THE REVIEWED LITERATURE)

Potential benefits of using SNS in higher education
facilitation of peer communication outside the classroom
assistance in socialisation, community building, development of peer relationships, demolishing barriers between learners
online discussions among learners, peer interactions, and (″limitless″) access to study materials and course information as students' likely outcomes
students' experience with social networking for learning purposes as a potential advantage
prompt feedback (from both teachers and students)
opportunity and motivation for active learning
independence from time and location
ability to substitute LMS

Results of several studies imply a hesitant attitude among instructors towards using SNS in higher education. A survey of 136 faculty members at a large southeast U.S. university uncovered that social networks were viewed as helpful for increasing interaction among peers (56%); however, only (24%) of the pedagogues utilized social networking in their pedagogical practice (Ajjan and Hartshorne, 2008). This might be connected with the lack of knowledge and skills on the teachers' side. Sadaf et al. (2012) interviewed twelve pre-service teachers (all being comfortable users of Web 2.0 instruments), and they agreed that methodological guidance in implementing SNS into the teaching process would be required for their effective use. Another potential reason for teachers' reluctant approach to social networks in education – the "tricky" relationship with learners, was offered by Mazer et al. (2007) who found that their research participants (a small-scale sample of American university students) perceived teachers who practiced little self-disclosure on Facebook as less credible than those who cared more about the revealed private information. Additionally, according to Laire et al. (2012), some teachers even fear that the borders between private life and educational matters might start to blur. Their worries seem to be connected directly with the uncontrollable and unpredictable nature of this communication channel (ibid.).

Madge et al. (2009) proposed another argument against over-privileging of SNS in formal education and stated that social media tools were not created for pedagogical purposes and shouldn't be applied simply due to their availability. From the sampled 213 British college students, only less than (10%) of

them supported Facebook utility as a teaching tool, since it was important for their social life but not for formal educational purposes (ibid.). Roblyer et al. (2010) explored the uses of Facebook among students and faculty members at a mid-sized university in the southern United States. They revealed that although (95%) of the students and (73%) of the faculty had Facebook accounts, communication related to educational matters was rare (ibid.). Jones et al. (2010) conducted interviews with a random sample of university students (from four U.S. institutions of higher education) and came to the conclusion that (70%) of the participants had a social networking account, but its use for educational purposes was least on the list. They continue to say that the research subjects had a tendency to separate educational matters (unpleasant) from their social life (pleasant) (ibid.).

Few authors presented negative impacts of the time spent on social networks on students' academic achievements. Using data from National Annenberg Survey of Youth (N=303), Pasek et al. (2009) found a small (however significant) negative correlation between time spent on Facebook and academic performance. Business students from a large public university (N=340) participated in a study by Paul et al. (2012) in which Pasek's et al. (2009) findings were replicated, pointing to a reliable negative relation between students' grades and time spent on SNS. After analysing qualitative data from 219 students in higher education, Kirschner and Karpinski (2010) uncovered that students who spend their time on Facebook have limited time to focus on coursework and academic matters. Among the research participants, the distraction aspect was reported as the main reason of Facebook's negative impact on their academic performance (ibid.).

TAB. 2 – POTENTIAL DRAWBACKS OF USING SOCIAL NETWORKING SITES IN HIGHER EDUCATION (BASED ON THE REVIEWED LITERATURE)

Potential drawbacks of using SNS in higher education
lack of methodological knowledge and skills (on the teachers' side) to successfully utilise social networking sites for pedagogical purposes
reduced teacher credibility (in the eyes of students) due to their little self-disclosure in the Facebook profile
the boundaries between private life and formal education might disappear
lack of rules for this new way of communication
over-privileging of the availability of social networks as caution
mixed perceptions of education-driven use of Facebook among students
negative correlation between academic performance and time spent on social networking sites
the aspect of distraction

CONCLUSION

Social networks (and particularly Facebook) do not prove to be the ultimate educational tools, since both positive and negative implications for higher education can be identified in the cited literary sources

(though a major portion of the reviewed research seems to be optimistic). The potential benefits of SNS for tertiary level education include: improved teacher-student and peer communication in the out-of-the-class context, prompt feedback on the side of both teachers and students, assistance in socialisation, community building and demolishing barriers, online peer discussions and interactions about coursework and limitless access to study materials and course info as students' likely outcomes, students' previous experiences in using social networks for educational matters as an advantage, opportunity and motivation for self-directed (active) learning, time-space independence, and ability to substitute course management systems. As for the potential drawbacks of SNS in higher education, the analyzed journal articles mention the following: lacking didactic skills on the teachers' side to meaningfully implement social networks into the educational process, tricky teacher-student relationship (i.e. reduced teacher credibility caused by little self-disclosure practiced on Facebook and blurred lines between personal life and formal education), lacking rules of communication, overvaluing the availability of SNS, students' mixed perceptions of education-driven use of social networks (namely Facebook), a reliable negative correlation between time spent social networking and academic performance, and the distraction aspect.

The most obvious limitation of our meta-analysis (and its results) is the reliance on mostly subjective data, as the inspected scientific studies are in most cases based on participants' subjective theories (i.e. their perceptions, views, attitudes or opinions) and more objective research data (such as pre- and post-tests, correlations, etc.) are present only in few of them.

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DIGITAL READING AND TEXT COMPREHENSION: COMIC READING AS A NEW METAPHOR FOR DIGITAL READING

KRISZTINA SZABO

Doctoral School of Philosophy and History of Science, Budapest University of Technology and Economics (BME), Hungary

e-mail: kriszti.szabo@filozofia.bme.hu

Key words: Digital Reading, Text Comprehension, Comic Reading, Digital Literacy, Reading Online

Abstract: In my paper I consider Internet usage as a kind of reading. In the past few decades the quality rather than the amount of reading changed in the first step. In the history of reading, the latest big change was the penetration of the World Wide Web, which made possible to reach and read texts and other digital contents from all over the world, no matter where we are. The changes in reading are so rapid and technology-centered that it is hard to keep up with them. However, we should do so because we must understand new ways of reading and comprehension in the digital era. In order to answer such questions like what kind of text we have in the digital space or how we comprehend digital text supported with visual and multimedia elements we need new metaphors. Text comprehension is not only decoding and summarizing texts anymore but a much more complex process.

In my paper I will present my ongoing research on digital reading. According to my hypothesis digital reading as a new metaphor can be similar to comic reading in several aspects. Concerning my research method it is a secondary research based on a theoretical comparative analysis including the followings: comic vs. digital text (the role of hypertext, hyperpictures, pictures and other visual elements); reading process (linearity and reader's activity). If pictures and comics facilitate comprehension in the case of reading picture books and comics then they probably could help the reading process of digital contents as well. In this sense my hypothesis could serve as a step forward to understand digital reading.

Introduction[1][2]

In my paper I will start from the following standpoint: using the Internet is a kind of reading. In the past few decades the quality rather than the amount of reading changed in the first step. In the history of reading the latest big change was the penetration of the World Wide Web (Hillesund, 2010), which made possible to reach and read text and other digital contents from all over the world, no matter where we are. The changes in reading are so rapid and technology-centered that it is hard to keep up with them (Dyson and Kipping 1998; Sivak 2003; Dougherty 2011; Coyle 2008). However, we should understand the new way of reading and comprehension in the digital era. In order to answer such questions like what kind of text do we have in the digital space or how do we comprehend digital text filled with visual and multimedia elements we need new metaphors. Text comprehension is not only decoding and summarize anymore but a much more complex process. As Nonie Lesaux claims that "reading is a dynamic and multifaceted process that requires continued development if students are to keep pace with the increasing demands of school texts and tasks [...] Reading effectively, readers not only decipher words on a page but also use their accumulating

[1]This current paper is a developed version of a previous article (Szabó 2015).

[2] This ongoing research is conducted in the framework of Integral Argumentation Studies, OTKA – K-109456 at the Doctoral School of Philosophy and History of Science, Budapest University of Technology and Economics.

knowledge to assess, evaluate, and synthesise the presented information." (Murnane, Sawhill and Snow 2012, 12).

In my paper I will present my ongoing research on digital reading. According to my hypothesis – as a new metaphor – digital reading can be similar to comic reading in several features. Concerning my research method it is a secondary research based on a theoretical (see References) comparative analysis. This means that during my work I reviewed the relevant literatures concerning digital reading, comic reading and the main literacy theories that are available for me in these first steps of my research. Based on these literatures, by comparing the followings: comic vs. digital text (the role of hypertext, hyperpicture, pictures and other visual elements); reading process (linearity and reader's activity) I intended to get a better understanding on the current opinions about digital reading and literacy in order to make a comparison of digital reading and comic-book like reading.

In my essay first I will summarize some reading theories and metaphors, then I will present my hypothesis as a new metaphor for digital reading. In order to confirm my theory I will discuss the main characteristics of digital text, visual elements and non-linear reading. Then I will make a comparison between digital reading and comic reading. After a short discussion about the role of pictures, I will summarize my results and make an outlook to possible further research.

Reading theories and new metaphors

If we concern Internet usage as a part of reading then we can quickly realize that we should rephrase our theories and metaphors on reading and literacy. These two latter – reading and literacy – are in a tight connection with each other: reading is the process which we do while we are mentally connecting letters, words, phrases, sentences, paragraphs with each other, in order to understand them (as texts). (Reading) literacy is about the way or method of the above mentioned text-understanding/text-comprehending process, which could mean several cognitive reading techniques and strategies. Now, the contemporary theories and metaphors of reading and literacy are not enough anymore to explain reading and comprehending processes in the digital era. As Murnane-Sawhill-Snow put it: "a new definition of literacy is required" (Murnane, Sawhill and Snow 2012, 6) because "[…] it is [important] to remember that comprehension is the essence of reading and that it has to be taught and cannot be left to chance!"(Opitz and Elridge 2004, 772).Therefore we need new, more improved literary theories. In the field of literacy there are – with the phrase of Rapp and van den Broek (2005) – lots of "mini-theories" about the reading process separated from each other accurately that

is why it is hard to distinguish them or – what is more important – to use them in parallel in order to get closer to the main core of digital text comprehension. In the following I will present some of these "mini-theories" which"may account for complementary and even mutually supportive aspects of reading comprehension" (Rapp and van den Broek 2005 276) and which try to capture the basic characteristics of digital reading.

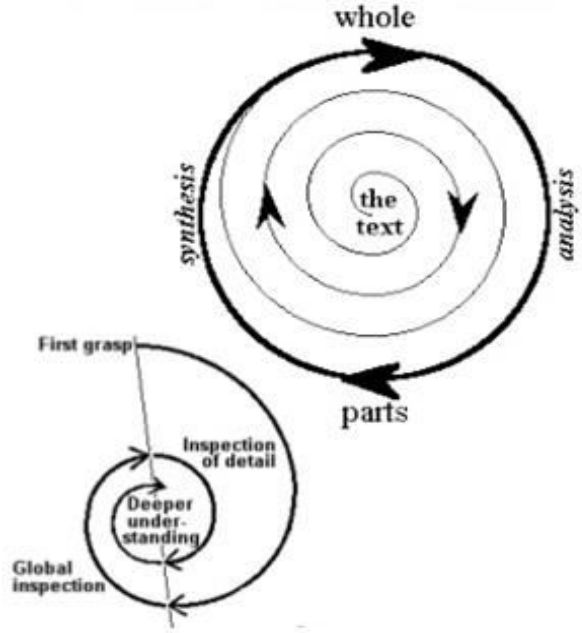
First there is the memory-based perspective which says that "each word, phrase, or concept that a reader processes triggers an automatic spread of activation to other, related words and concepts in memory for the text read so far and background knowledge. In this account, the reader has little or no control over the information that is activated at any point during reading." (Rapp and van den Broek 2005, 276-277). Second, according to a Constructivist Reading Theory readers make their meanings about the text during an active, constructive process quasi independently from the intention of the author. Third, theories of reading process and reading products concentrate only on reading and contents separately. "The former describe how cognitive activity fluctuates during reading, how working-memory limitations or textual features influences such cognitive activity, and so on" (Rapp and van den Broek 2005, 277). The product-driven research which is about the notion of text representation in the memory, while a relatively shallow process of reading concentrates on reading information, summarizing paragraphs and identifying the main idea of a text (Murnane, Sawhill and Snow 2012, 6-7). However, according to Rapp and van den Broek"the obvious fact is that the two must be closely connected" (Rapp and van den Broek 2005 277) Fourth, the simple view of reading claims that "reading comprehension depends on accuracy and speed of word reading and oral understanding of the words to be read" (Murnane, Sawhill and Snow 2012, 7). At last, according to Schema Theories of text comprehension reading is a process when a reader's knowledge is updated by "integrating information encountered in text with information already stored" (Murnane, Sawhill and Snow 2012, 7).

Rapp and van den Broek (2005) find hard to navigate between these theories, which sometimes contradict each other and are not able to reflect on the depth of reading comprehension. To satisfy this purpose they made a Dynamic Text Comprehension (DTC) theory which tries to mix the best parts of the "mini-theories" mentioned above. It is complex, complementary, flexible and more open than the other theories distinguished; therefore it could possibly catch more successfully the nature of digital text and digital literacy. The central model of DTC called "Landscape model of reading", which replicates mental text comprehension processes of hypertextual, complex and fluidly connected digital reading. It

indicates that during the reading process we understand a text first with the help of the latter content we read. Then we connect these items of information to the next reading section and we make a mental representation based on the newly read text. After that readers give their previous information and knowledge to the new mental representation to get the full meaning of that part of the text. And then this whole process goes on from the beginning (Rapp and van den Broek 2005, 277).

At this point I would like to refer to a similarity, which I will not discuss deeply in this paper, but I feel the necessity to mention it. This is the following: the Landscape model of reading by Rapp and van den Broek reminds me and shows similarities to the so-called Hermeneutics Circle and Hermeneutics Spiral of text comprehension that can be seen in Figure 1. The picture shows a bit simpler but almost the same process of reading as Rapp and van den Broek's. It could be important, because from this we can realize that classical and digital reading processes could be bound together in the framework of a common theory, constituting a basic philosophical theory of literacy and understanding. Unfortunately, here I do not have the chance to write about this phenomenon deeper, because it would lead us far from my main goal.

FIGURE 1: THE HERMENEUTICAL CIRCLE OF READING



SOURCE: http://image.slidesharecdn.com/howwhyofreading-150302183300-conversion-gate01/95/how-why-of-reading-6-638.jpg?cb=1425321224, accessed on 14th April 2015.

Continuing with the theories of reading and literacy it is easy to realize how reading itself changed in the Digital Era. For instance, "e-reading [...] takes place on a multitude of

electronic devices and is rapidly increasing in popularity." (Murnane, Sawhill and Snow 2012, 13). From the above we can claim that these changes concern not just the "reading devices" (i. e. move from printed books into digital books), but the theories of reading and literacy. Thus we should talk about their digital variants, namely about digital reading and digital literacy, too.

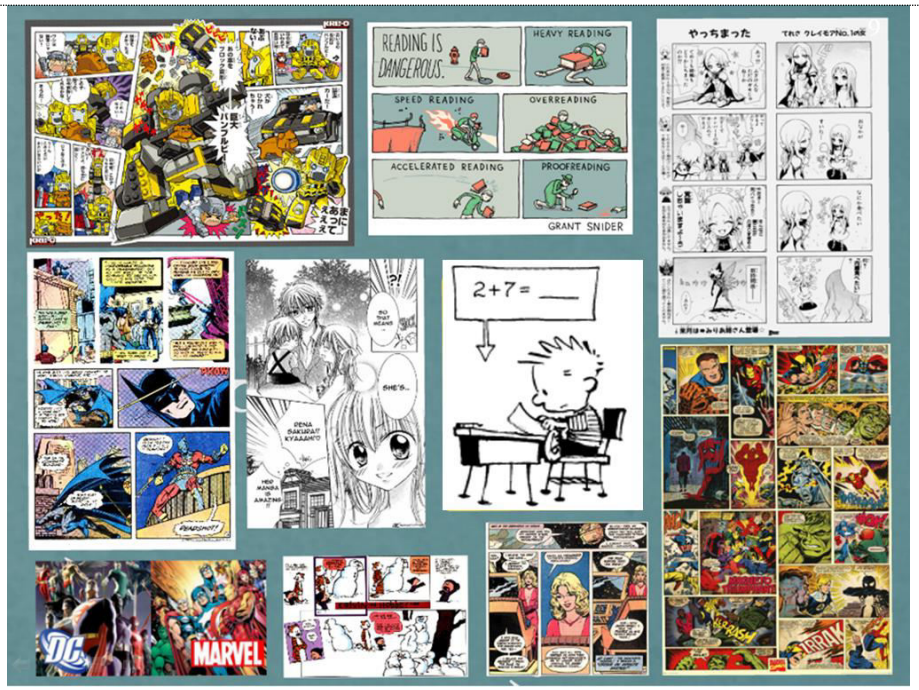
A question automatically arises: what is digital reading and digital literacy? The fist, namely digital reading is what we do when we would like to understand digital texts. In my opinion, digital text is any kind of text which we read with the help of a digital device such as cell phones, smart phones, tablets, laptops, PCs and e-book readers. These texts are hypertexts (Bolter 1991; Bolter 2001; Pullen 2006; Cull 2011) because they are linked to each other with hyperlinks so we can easily switch and jump between them, like in a kind of eternal, never-ending and always refreshed text. These contents are not just texts embedded and connected with links but they also include some types of visual elements, namely pictures, gifs, videos, web design elements etc. These visual elements play a role that is not only illustrative but they also give an explicative and additional semantic level to the text that could help us to understand a deeper meaning of the text. When one read a digital text characterized by the above features s/he does a non-linear kind of reading (Aarseth 2004; Hillesund 2010): jumping from one section of the text to another, clicking between the links and sites, zooming in and out of a visual element etc. This fragmental, active and highly dynamic reading is the most essential part of digital reading (Bearne et al. 2007) because it makes text comprehension a much more complex process than linear reading – and these are the things which the researchers of digital literacy occupy with. Now, in order to understand this whole reading mechanism (digital reading and literacy) we need new metaphors, such as the one I will present and make an attempt to justify in the following section (Pullen 2006; Ulin 2009; Cull2011; Walsh 2010).

A POSSIBLE NEW METAPHOR: COMIC BOOK-LIKE READING

As the Hungarian comic book researcher Tamás Dunai puts it, "reading comics is a process could be most compared to the active user activity of the Internet" (Dunai 2007, n. p.). Starting from this point of view and reviewing some literature on the field of comic reading (Bolter 2001; Koós 2004; Maksa 2007; Kovács 2009 etc.), I came up with my hypothesis which says that digital reading can be similar to comic reading in several aspects. There are several types of comics according to cultures, traditions, eras and ages (See Figure 2) (Comics

Research 2010). Comparing reading methods of them with the reading method of digital texts is a difficult task, but not impossible.

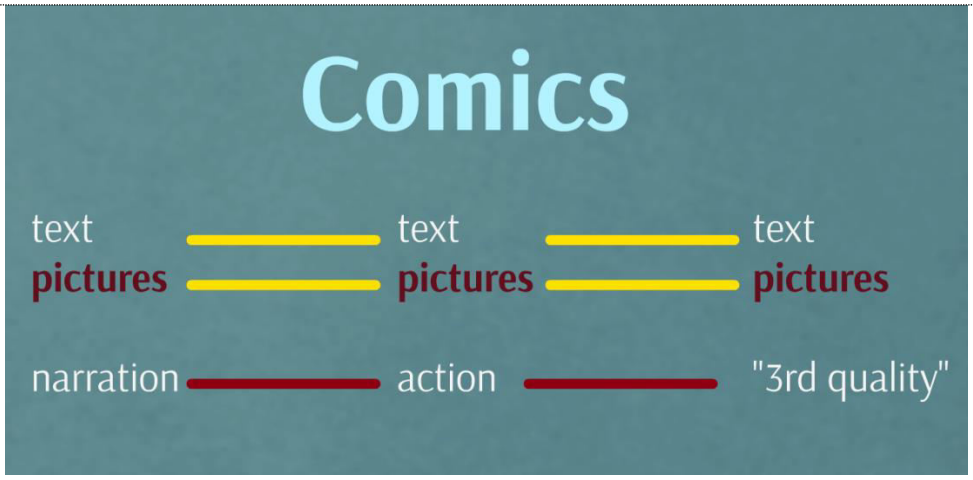
FIGURE 2: SOME COMIC TYPES



SOURCE: ORIGINAL ILLUSTRATION CREATED BY THE AUTHOR

Starting from the basic features we can claim that comics have some general characteristics which are almost the same no matter what type of comic we talk about. First of all we can say that comics consist of text and visual elements, namely pictures (Comics Research 2010). They together make a mixture of letters and visuality that is why we can call them hybrid pictures. According to Gulanowski (2015), text and pictures create a complex meaning, a special third quality (see Figure 3), which we can sort out during the reading process. These three levels are also being called text, pictures and narration as well as text, picture and action.

FIGURE 3: THE THREE LEVELS OF COMICS (GULANOWSKI 2015)



SOURCE: ORIGINAL ILLUSTRATION CREATED BY THE AUTHOR

The reading process conforms to the duality of text and pictures and because of that special third quality reading becomes fragmental and non-linear. Readers usually switch hectically from one panel of the comic to another, depending on completely their own method of interpretation (ComicsResearch,2010). Thus reading comics is a fragmental, non-linear reading and needs a kind of visual comprehending skill, an active user activity to understand this whole complex system of text, pictures and the third quality of meaning. If one reads comics on the Internet this process could become even more difficult because there are comics working with the help of a hyperlink system, so pictures are hyperpictures, too. These webcomics are nowadays on a rising branch precisely because of the Internet penetration. Based on the above here is a short comparison of the two types of reading (Figure 4):

FIGURE 4: SIMILARITIES OF DIGITAL READING AND COMIC READING

	DIGITAL READING	COMIC READING
SIMILARITIES	fragmental, non-linear, scanning, contents are freely walkable, hypertext/picture, hybridtext/picture, special cohesion and coherence, active user activity, several content type	

SOURCE: ORIGINAL ILLUSTRATION CREATED BY THE AUTHOR

At this point it is necessary to face with some controversies of digital reading and comic reading. The first one is that comics are narrative texts, thus their aim is to tell a story. But this latter, namely storytelling is a different kind of process than information gathering and knowledge acquisition. The former is about understanding a story, a situation or an event within a special narrative framework. The latter is a kind of collecting process which aims to get pieces of information and knowledge without an exact plot or narrative frame. It is also important that on the surface it is easy to compare these two types of reading but in order to make a more detailed comparison, in a deeper level it would be essential to make a sharp

distinction between types of digital texts on the one hand and types of comics on the other hand. Figure 5 shows some differences in the aims of digital reading and comic reading.

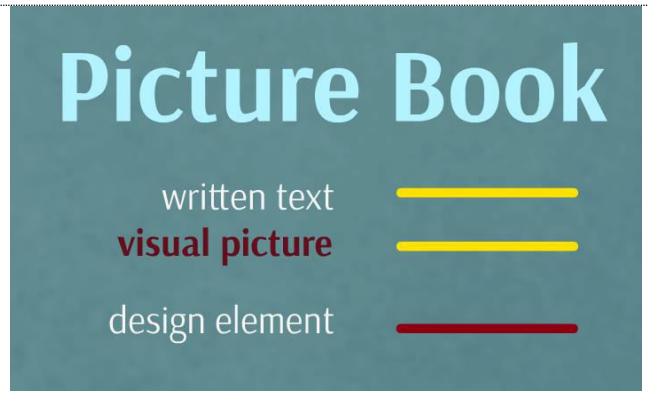
FIGURE5: DIFFERENCES IN AIMS OF DIGITAL READING AND COMIC READING

	DIGITAL READING	COMIC READING
DIFFERENCES OF AIMS	(storytelling) (entertaining) information gathering knowledge acquisition etc.	only storytelling and entertaining

SOURCE: ORIGINAL ILLUSTRATION CREATED BY THE AUTHOR

From the above comparison a question arises: what is primary: text or pictures? Some say that in order to comprehend digital texts and comics firstly we need to become readers. This suggests that text is the primary quality in the process of reading comprehension. But then what is the role of the picture? Does it help to understand texts? Has it got a secondary role? Are texts able to stand alone themselves without pictures? Or on the contrary: are pictures indispensable in comprehension? Are texts the secondary qualities which help to understand visual elements? In order to answer these questions I turn to a theory of picture books. According to Suzette Youngs and Frank Serafini (2011) picture books consist of three sorts of elements (See Figure 6). They are the following: written language, visual picture and design element. This latter comes from the other two parts, so it is a third quality – just like in the case of comics.

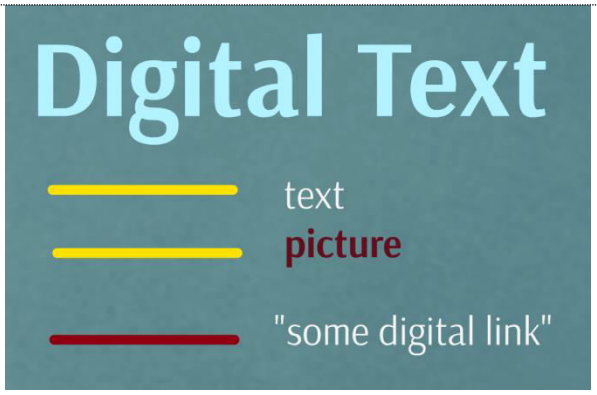
FIGURE 6: THE THREE SORTS OF ELEMENT OF PICTURE BOOKS



SOURCE: ORIGINAL ILLUSTRATION CREATED BY THE AUTHOR

Regarding digital texts they have also three qualities and in this case the third one – besides text and pictures – is "some digital link" (See Figure 7).

FIGURE 7: THE THREE QUALITIES OF A DIGITAL TEXT



SOURCE: ORIGINAL ILLUSTRATION CREATED BY THE AUTHOR

Now then, if we put together these three text types: picture books, comics and digital text and compare their three qualities we can easily discover that in each case text and pictures together provide a third quality – the design element, the narration, the action and the "digital link". This triple signal system – we call it multimodality – gives the meaning of each contents. Based on the above, pictures have got an essential role in comprehension. They drive our attention, provide frame and pattern, clarify, explain, complete and give meaning to the contents.

However, one can raise doubts against texts with pictures because s/he thinks that this path would lead us back to picture reading, which is an already outworn style of reading. According to these, too much ready-made content, more images and less text have a negative effect on our mental processes and comprehension because they do not encourage us to think deeply and, what is more, they can easily confuse the reader. However, in my view the rediscovery of pictures and visual elements serve the process of deep comprehension. As Youngs (2010) puts it: "When readers progress from noticing the visual, textual, and design elements in picture books to interpreting and analyzing these texts, they construct an interpretive trajectory" (Youngs 2010 in Youngs and Serafini 2011, 117). According to these, if pictures in picture books and comics facilitated comprehension then why would not they help the reading process of digital contents as well? I think in this sense my hypothesis could serve a step forward to understand digital reading, because it shows how pictures and texts cooperate in a texts/contents in order to create meaning. It is clear for me that we should involve the viewpoint of comic-book like reading into the researches of digital reading. Thus I need to dig deeper in the comparison of digital reading and comic reading – for instance involve the method of eye-tracking heating – in order to develop a more precise metaphor.

CONCLUSION

In my paper I started from the theory that surfing on the Internet is a kind of reading and in order to understand its new mechanisms we need to develop new metaphors. Based on the comics reading literature, I built a hypothesis claiming that digital reading can be similar to comic reading in several aspects. In my essay I reviewed some background literature on reading theories and metaphors and found that Rapp and van den Broek's Dynamic Text Comprehension theory seems to be the best alternative tool to get closer to digital reading. Following that path I presented my research on digital texts, visual elements and non-linear reading. Then I made a comparison between digital reading and comic reading and found some basic similarities and differences between them. Finally I concluded that further research is required to confirm or dismiss my hypothesis. It is certain that the rediscovery of pictures and visual elements in the field of digital reading is an essential part of getting closer to understanding literary comprehension processes. "If success in the twenty-first century depends increasingly on advanced literacy skills and the education and training they make possible, it is important for educators, policy makers, and the public to understand what advanced literacy is. In short, a new definition of literacy is required – one that highlights the skills that children need to deal with the new demands." (Murnane, Sawhill and Snow 2012, 6) Moreover, as a final and practical aim, my research tends to show a possible new way for those who create digital contents in order to teach (i. e. teachers or web designers), too. Thus it will be a matter of future research to further develop the understanding of digital reading, digital literacy and the reconsideration of digital contents.

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A CROSS-DISCIPLINARY APPROACH: ESP INSTRUCTIONAND IMPLEMENTATION OF NEUROMARKETING METHODSAS CURRICULUM INNOVATION

STEPANKA HRONOVA
PAVEL ROSENLACHER

University of Finance and Administration, Czech Republic

e-mail: stepanka.hronova@mail.vsfs.cz

Key words: Cross-disciplinary collaboration, professional language instruction, ESP, applied linguistics, English language, marketing communications, neuromarketing, eye camera, marketing research

Abstract The article deals with the topic of cross-disciplinary collaboration in the area of university students' preparation in English language in the study field of Marketing Communications in connection with the content and methods of a newly incorporated subject of Neuromarketing which is a relatively new and progressive discipline. For the benefit of students, mutual interconnectedness of dimensions within the process of creating knowledge is enriched in its explicit element by the use of verbal tools of a foreign language. Thus, in the process of sharing the obtained knowledge, principles and hands-on acquired skills of a particular field of study within the frame of applied linguistics, the foreign language learning process (second-language acquisition) is boosted and simultaneously the depth of memorability (recall) of professional terminology is enhanced. The above-mentioned branch of neuromarketing is gradually gaining its position on the Czech market specializing in marketing research. As opposed to the traditional marketing research, this attitude uses biomedical technology, e.g. respondents' brain activity monitoring, their heart rate, or their eye tracking monitoring. One of the starting points can be seen in deeper comprehension of respondents' typical behaviours in the context of marketing research. It can be ascertained that in question there is a less traditional method which is currently starting to develop its potential and seeking new experts to work in this specific area. It is particularly just this discipline which contributed to the syllabus innovation of the study field of Marketing Communications at The University of Finance and Administration, enabling its students to take an active part in the neuromarketing research carried out as a constituent part of classes. In doing so, these students simultaneously gain invaluable hands-on experience in this particular discipline. This paper presents eye tracking monitoring results which were used directly in the Neuromarketing instruction, and, at the same time, it informs about a unique opportunity for students to present their findings and exchange their experience based on the research. They are able to do so during English language seminars with the use of the professional English terminology and concepts which had been previously taught.

INTRODUCTION

The paper focuses on possibilities of innovation and collaboration in the framework of two university subjects: English for specific purposes and the newly offered subject called neuromarketing. Options on how to upgrade the curriculaare to be found in the application of new scientific approaches to teaching and on linking the research with methods of instruction within the concerned departments applying the cross-disciplinary approach.Thanks to this, undergraduate as well as graduate students of the university can be involved in a process of verification and validation of new methods in a form of team projects or their final papers both of which concern application of neuromarketing and its methods in practice. Moreover, these participants are trained in the professional English vocabulary of the given field and subsequently they are given a chance to present findings of their research / paper in English during the ESP seminars.

In its first part, the paper deals with English for specific purposes and its instruction. The second section is devoted to the subject of neuromarketing itself. Furthermore, it brings outcomes of a research carried out by the university students. The results of their eye tracking monitoring are presented with the use of graphical representation – a heat map –at the end of the paper.

THE KNOWLEDGE CREATION PROCESS

Two university teachers, authors of this article, took part in a cross-disciplinary cooperation in the area of university students' preparation in the study field of Marketing Communications (MC). Their students could benefit from the fact that while during the process of knowledge creation described by Takeuchi and

Nonaka on a SECI model (1995), where four phases exist (two tacid and two explicit which are usually done in Czech language among monolingual group of people) this new approach enabled students to enrich one of the explicit elements of the learning process and knowledge dissemination with the use of verbal tools of a foreign language – professional neuromarketing terminology and by the presentation skills acquired and trained previously during their English classes.

METHODS OF INSTRUCTION IN ESP

The nature of language learning has changed over the last decades. Now, it can be described as a 360° process. The teacher or instructor is not the only one to give students the benefit of her/his knowledge and skills, thus the process is no longer linear. The student occupies the centre ground and is surrounded by human as well as technological facilitators enabling the student to identify the most effective ways to master the information and data available (Hronová and Knihová 2013). Methods of ESP instruction which are trying to familiarize students with the phraseology and professional vocabulary they will need for their future careers have changed dramatically as well. During the English seminars, the best blend is being offered to ensure the most effective results. In class, the interactive and rich multimedia presentations inviting the experts from given fields through available videos are offered to complement the more traditional methods of the coursebook use with balanced activities - as far as the language skills are concerned. The term *computer assisted language learning* can be used to describe some of the language instruction methods and practice used where students are encouraged to expose themselves to the language in a variety of situations. The CALL is explained by the European Commission in its material as follows: "Computer assisted language learning (CALL) refers to any process in which the learner uses a computer to improve foreign language competence. The technology includes not only computers but also smart phones, tablets, MP3 players, and consoles." (2014) For the home preparation and further studies, a variety of complementary activities is recommended including the use of virtual environment with interactive exercises and educational English language content.

ESP FOR MARKETING COMMUNICATIONS

For the particular group of students who took part in the neuromarketing research, neuromarketing terminology was prepared (see examples in Table 1, Figure 1 and Enclosure 1) and used during the English lessons together with explanation and practical testing of presentation skills inclusive of signposting language. In one of its parts, the language training for the-marketers-to-be tried to enrich not only their knowledge of English professional vocabulary but it also tried to focus on the following: presenting facts, figures and visuals; naming various types of graphs; commenting on the trends and data with the focus on neuromarketing. When presenting their findings in front of a group in English, real situations which are likely to occur later during their professional careers were actually simulated this way.

Table one brings lexicology in context of a sentence. First, students are given an English term, then its Czech translation and finally, a sentence is presented to see the use of the term in context.

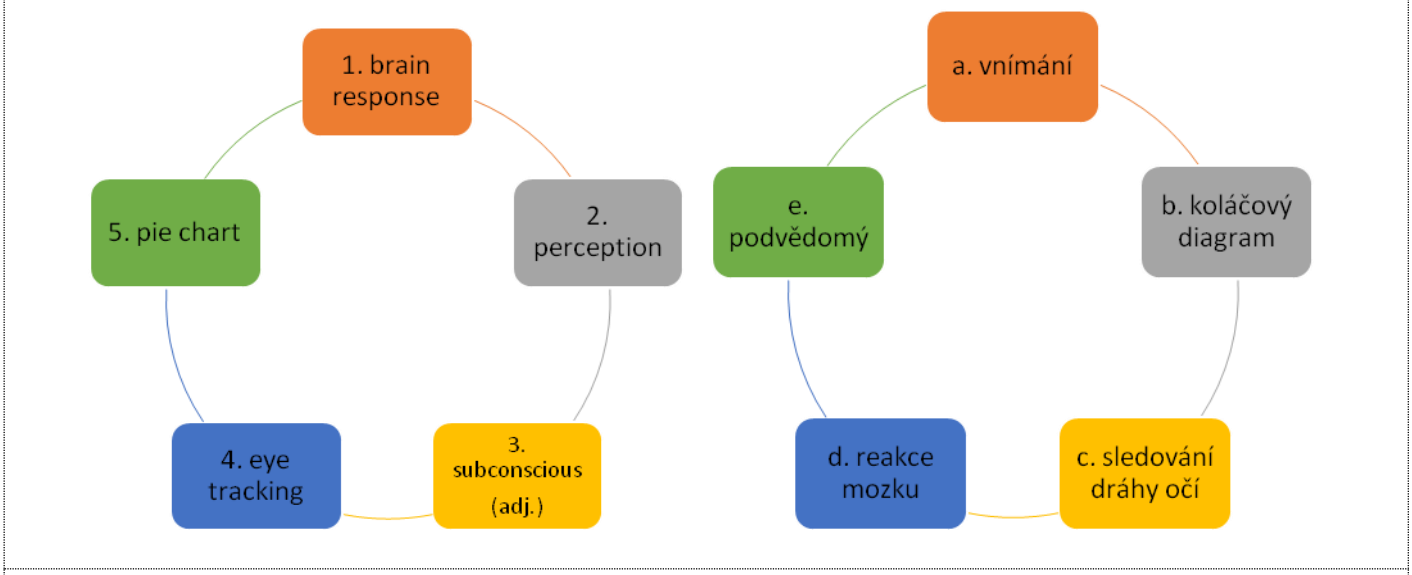
TABLE 1. ESP - EXAMPLES OF THE PRE-TAUGHT NEROMARKETING VOCABULARY

English term	**Czech equivalent**	**Use in a sentence**
Bioelectric activity of the brain	Bioelektrická aktivita mozku	Even incremental changes in brain activity can be monitored.
Cutaneous galvanic reflex	Kožně galvanický reflex	Changes in conductivity of the skin due to perspiration are described in the paper.
Heart beat frequency	Frekvence srdečních tepů	The research includes monitoring of heart rate changes.
Muscular tension	Svalové napětí	Please notice these significant changes in the levels of muscular tension.
Surface temperature of the skin	Povrchová teplota pokožky	Surface temperature of the skin due to emotional reaction can change rapidly.

SOURCE: OWN MATERIAL

Figure one shows an example of a particular exercise where students are encouraged to practice the professional vocabulary. Their task is to match the vocabulary in the left section with the Czech equivalents on the right side.

FIGURE 1. ESP - A MATCHING EXERCISE.



Source: own material

CHARACTERISTICS AND BACKGROUND OF NEUROMARKETING

Neuromarketing is a relatively new method of marketing practice and there are numerous possibilities of its application. Kozel (2011) defines neuromarketing as a multidisciplinary field connecting a range of disciplines such as psychology, medicine and computer technology. In substance, neuromarketing is based on monitoring immediate psychophysiological reactions of respondents to the submitted stimuli. These can be, for example: marketing communication tools such as advertising, logos, products, or sales support tools. (Rosenlacher 2012). Psychophysiological reactions which are being monitored most frequently are the brain activity (EEG), cardiac activity, and also monitoring the track of eye movement using the method of Eye Tracking (eMerite, 2015).

Neuromarketing started to develop especially after the year 2000 when the term neuromarketing was newly used by the Bright House from the USA (Morin 2011). To a certain extent, super-saturation of consumers by advertising and its declining effectiveness have contributed to the emergence of neuromarketing. (Du Plessis 2009). In the context of electronic advertising, the term banner blindness is used (Janouch 2010) which means that a consumer who is constantly surrounded be advertising does not register the ads any more, eg. an online advertisement in a type of a banner. Unlike questionnaire research which is dependent of the willingness of respondents to provide information, neuromarketing can provide complete and truthful information, for example when the respondent is looking at an ad or watching a spot.

Advertising oversaturation can be to a certain extend given by the fact that an average 60-year-old man can see about 2 million advertisements during his lifetime (Lindstrom 2009), although there is a question of how many of them he can really remember or recall. A survey respondent often does not give or is not able to provide complete and true facts about his/ her feelings and likes or dislikes of a particular ad. With neuromarketing methods, the research is not limited by the fact that the respondent is unable to describe and express their feelings and emotions clearly (Lindstrom 2009). The fact that emotions are hard to describe can be supported by Vysekalova (2014) who claims that one can say what the emotions are until they are asked to try and define them. Thus, neuromarketing brings a different view to exploring and evaluating emotions and emotional conditions, which is done by biomedical engineering. The technologies and methods include brain activity monitoring with the use of electroencephalography (EEG) or monitoring heart beat frequency using BVP. Table 2 below brings an overview of the most widely used monitoring methods and the psychophysiological reactions they focus on.

TABLE 2. MODALITIES OF PSYCHOPHYSIOLOGICAL RESPONSES

Psychophysiological reactions	**Biomedical Technology**	**Subject of monitoring:**
Bioelectric activity of the brain	EEG *Electroencephalography*	Changes in brain activity
Muscular tension	EMG *Electromyography*	The level of muscular tension
Heart beat frequency	BVP *Blood volume pulse*	Heart rate changes
Cutaneous galvanic reflex	GSR *Galvanic skin response*	Changes in conductivity of the skin due to perspiration
Surface temperature of the skin	TEMP	Changes in the surface temperature of the skin due to emotional reaction
Respiratory rate	RSP *Pneumography*	Frequency of abdominal and thoracic breathing
Monitoring of eye movements/ focus on an object	Eye Tracking	Time of observing objects of interest measured by the eye camera

SOURCE: eMerite 2015, authors' own version

Similarly, the eye movement and focus is monitored by the method called Eye Tracking. This approach allows to determine which areas of an advertising poster or other advertising media a consumer focused most of his/ her attention on. From a technical perspective, there are two basic methods of monitoring and

trackingthe eye movements: *"*those that measure the position of the eye relative to the head, and those that measure the orientation of the eye in space" (Duchowski, 2009).

Application of neuromarketing methods

Within the field of marketing communication and its innovation, students have an opportunity to take part in neuromarketing research that is under way at the Department of Marketing Communication. For this purpose, the Most branch of the University of Finance and Administration established a neurotechnology laboratory, which is arranged for this type of research having the most modern technologies at the disposal.

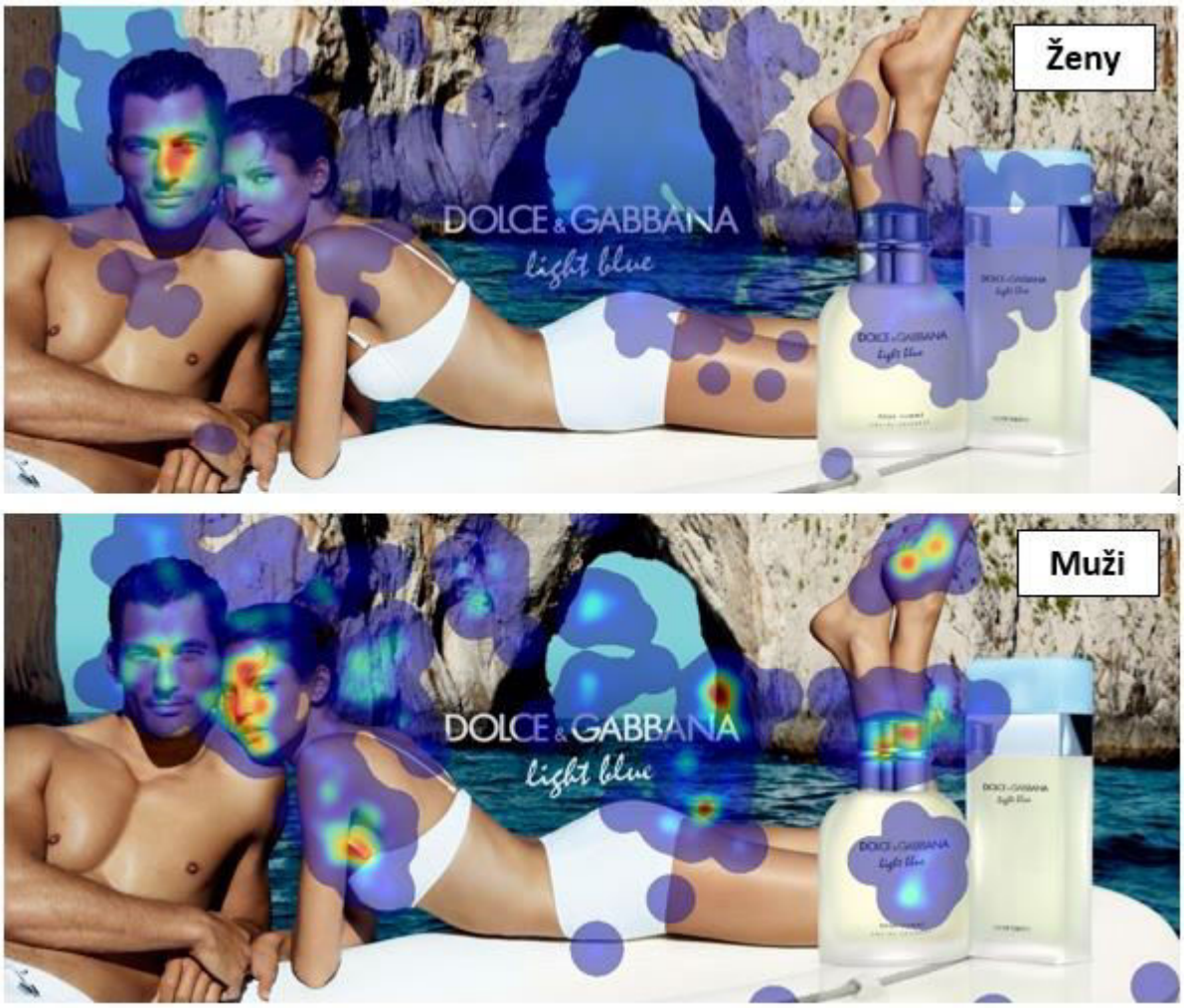
In these premises, an experimental probe was carried out aimed at identifying the differences in focusing the attention to advertising between males and females. Since this is a gender-focused research, an advertisement for perfume brand Dolce Gabbana was selected for this purpose (Figure 2 below).

A total of 20 randomly selected students of the graduate programme participated in the survey. They were up to the age of 25. The sample of respondents included 11 women and 14 men. The Eye Tracking method was used to identify the differences in attracting attention of the particular advertisement. Respondents were invited individually, they were seated in front of a 22-inch full HD monitor to which a static eye camera was attached. It was following the eye movements of the respondents. The Dolce Gabbana advertising was projected on the screen for 5 seconds, during which the respondent's eye track was monitored using an eye camera. With the help of special software for the eye camera, the data was later analysed and the results were compiled for both sexes using the so-called *heat maps*.

These heat maps show directly how long respondents focused their attention to different sections of the picture. The focused attention is shown graphically with the colour spectrum. The spectrum of red indicates the longest orientation of sight and the spectrum of blue indicates the shortest focus.

The results are summarized in Figure 2 presenting the heat maps of male and female respondents, making it possible to compare differences in their focus.

FIGURE 2. HEAT MAPS OF THE DOLCE GABBANA ADVERTISEMENT (TOP: WOMEN, BOTTOM: MEN)



SOURCE: OWN MATERIAL

The results show that differences exist in attracting the attention of men and women to the advertisement, where women were more focused on the man's face, chest and the product itself, though the length of their attention was of a lesser extent. Men were more focused on the female body.

Subsequently, the detailed results of this research were presented during English lessons as described in the first section of this paper. During the process of sharing the obtained knowledge of a particular field of study within the frame of applied linguistics, the acquisition of foreign language was boosted as well as the depth of memorability of the research methods and the neuromarketing data collected.

CONCLUSION

The paper presented a unique opportunity for students of the University of Finance and Administration to participate in the neuromarketing research carried out within their seminars which also enabled them to gain the invaluable hands-on experience in this particular discipline with the use of the newest technologies. In addition, students were offered a possibility to increase knowledge of their professional English vocabulary in this field during ESF seminars and later – after their neuromarketing research – they

were encouraged to present their findings during their English lessons thus share their expertise as well as English skills with their classmates.

The authors believe that the above offers an example of good practice of a cross-disciplinary approach where ESP instruction merges with an implementation of neuromarketing methods and creates a curriculuminnovation for the MC field of study in tertiary education.

Attachment

TABLE 3. VOCABULARY

English term – Czech equivalent	**English term – Czech equivalent**
activate hidden images – vyvolat skryté obrazy/ motivy	limbic system – limbický systém (*rhinencephalon*)
affective response – afektivní/ citová reakce	making choices and decisions – vybírání a rozhodování
be effective at doing sth. – být efektivní v něčem	market research – průzkum trhu
be forced out of one's mind – být vytlačen z mysli	marketing research – marketingový průzkum
below the levels – pod úrovní	measure consumer thoughts – měřit myšlení zákazníků
best-known technology – nejlépe známá technologie	measure changes in activity – měřit změny aktivit
biometrics – biometrie	mood and emotions – nálada a emoce
blind taste test – chuťový test naslepo	networking platform for professionals – spolupráce odborníků v rámci vytvořené sítě
brain – mozek	neuromarketing– neuromarketing
brain response – reakce/ odezva mozku	neuromarketing concept – neuromarketingový koncept
brain scan – skan mozku	new field – nová oblast
buying decisions –rozhodování o koupi	partnerships with academia – partnerství s akademickou obcí
cause a positive emotional response – vyvolat pozit. emocionální reakci/ odezvu	person's perception – vnímání jednotlivce
cognitive response – kognitivní reakce/ odpověď	physiological state – fyziologickýstav
compulsive – chorobný	potential applications of neuromarketing – potenciálníaplikaceneuromarketingu
conscious – vědomý, úmyslný	predict consumer behaviour – předpovědět chování spotřebitele
conscious reasoning –vědoméuvažování	pre-frontal cortex – prefrontální kůra
constructed on the base – sestavené na základě	produce a stronger response – vytvořit/ vyvolat silnější reakci
consumer behavior – chování spotřebitele	professionals in the field – odborníci v daném oboru
consumer buying decisions – rozhodování spotřebitele o koupi	purchasing decisions – rozhodování o nákupu
controlled awareness – řízené povědomí	rely on – záviset na
decision processing – zpracovávání/ formování rozhodnutí	research – výzkum
decisions are driven by – rozhodnutí jsou řízena/ vedena	researchers – výzkumní pracovníci
deliberate – záměrný, rozvážný	respiratory rate – dechová frekvence
desired reaction – požadovaná rekce	response to marketing stimuli – reakce namarketingovépodněty
detected images – zjištěné obrazy	responsible brain areas – odpovědnéoblasti mozku
effortless – snadný, bez námahy	revealing subconscious motives – odhalování podvědomých motivů
electroencephalography (EEG) – elektroencefalografie (EEG)	selected set of images – vybraná sada obrazů/ motivů
functional magnetic resonance imaging (fMRI) – funkční magnetická rezonance	sensorimotor response – senzomotorickéodpověď
gain popularity – získat popularitu	sensors to measure – senzorypro měření
galvanic skin response–galvanickáreakcekůže	spontaneous purchases – spontánní nákupy
guide purchasing decisions – vést rozhodnutí o nákupu zboží	steady state topography (SST) – topografie klidového stavu
half the subjects – polovina subjektů/ respondentů	stored in brain – uložený v mozku
heart rate– srdeční rytmus/ frekvence	subconscious area – oblast podvědomí
hippocampus – hipokampus (součást velkého mozku)	subconscious brain activity – podvědomá činnost mozku
human emotion – lidské emoce	technologies – technologie
human reasoning – lidské uvažování	tempted to learn – podněcovány k učení
influencing a person – ovlivňování člověka	unconscious – nevědomý, neúmyslný
intuitive – intuitivní	unit of information – jednotka informace
Source: own material	

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ABSTRACTS

LEARNING 2.0: DUOLINGO

JAN BESEDA
Centre for Higher Education Studies, Czech Republic

e-mail: beseda@csvs.cz

Key words: microlearning, m-learning, gamifation, community learning

Abstract: In my presentation, I will discuss the elements that should have educational applications of the 21st century. I will demonstrate the desired properties for applications Duolingo. Duolingo is an application for teaching languages and currently the most downloaded educational applications.

IS ANYBODY LISTENING? – POSSIBLE SOLUTIONS TO THE MULTITASKING PHENOMENON

MIKLÓS HARSÁNYI

Communication and Media Science
Corvinus University of Budapest, HUNGARY

email: harsanyi.miki@gmail.com

Keywords: multitasking, divided attention, educational methods, learning habits

Abstract: We all participated in boring lectures, but also in exciting ones, when we didn't even notice how time passed by. Still students are hardly present mentally during the lessons. Why is that so? Much more than 90 minutes can be saved for students by multitasking. In our speech we are going to elaborate on the potential evolution related, psychological reasons, and we are also going to touch upon the effects of new media, and are going to give recommendations as to how the slip phenomenon involving compulsive communicators could be alleviated. What can a lecturer do? We examined interaction during lectures. We are going to specify when parallel activities should not be allowed, and examine the students' responsibility as well, which is just as big. What if multitasking were a part of university lectures? We are also going to speak about how the unexplored elements of web 2.0 could be incorporated in education through multitasking. By the way, while writing this abstract I was listening to a speech on how abstracts should be written.

TEACHING ENGLISH FOR ACADEMIC PURPOSES ONLINE

IRINA MATUSEVICH
Masaryk University Brno

e-mail: matusevich.irina@gmail.com

Key words: LMS, language learning, online learning

Abstract In order to successfully operate in the English-speaking academic environment students require a very particular set of language skills and vocabulary that differs from that of an everyday conversation. Their acquisition takes time, the resource that is often in short supply at the university. At the same time, students are expected to participate in the seminars and submit essays that are on par with the university-level requirements from the very first semester of their studies.

A one-semester face-to-face Academic Writing course currently taught at the Department of English and American Studies cannot feasibly address all the issues and target individual student's problems. To supplement it and to provide more space for practice, the BA Online Academic English Practice course was created. It is a one-semester fully online course that focuses on improving students' writing and speaking skills by utilising a variety of Moodle functions and external services.

PUBLIC OPINION RESEARCH AS A TOOL OF STUDENT INDEPENDENT LEARNING: EVIDENCE FROM THE EASTERN EUROPE

RIDVAN PESHKOPIA, ARRITA DEVA University for Business and Technology Pristina, RINA AJVAZI, BLERTA NUREDINI University of Prishtina and University of Warsaw, SARANDA BERISHA, BLERINA MIFTARI University of Warsaw,RREZART DEMA, SHKUMBIN HALABAKU Utica College, MILICA DJORDJEVIĆ, TIJANA KOLUTA International Business College of Mitrovica, LEKË HOXHA Muscatine Community College, JONIDA LIKA, DENISA RIRA University of Tirana, D. STEPHEN VOSS, University of Kentucky

e-mail: ridvan.peshkopia@ubt-uni.net

Key words: research, learning, students

Abstract: The limited opportunities for experimental and practical training narrow the hands-on experience of students majoring in social sciences in general and political sciences in particular. We argue that designing and conducting public opinion surveys might serve as a good opportunity for social sciences students to better understand the subject matter as well as establish appropriate research design and methodology needed to scholarly respond to relevant research questions. We present results from an online survey with perceptions from students in seven universities in three different Eastern European countries, Albania, Kosovo and Poland. We expect to find that students who have participated in survey research have acquired a better grasp of the subject matter as well as research methodology. In order to overcome the endogenous relationship between student interest in participating in survey research and the latter's impact on student understanding of the subject matter, we apply structural equation modeling. We expect to find results that would strongly encourage the inclusion of public opinion survey or any other survey research in college curricula as both a tool of student independent learning and equipping students with valuable practical skills for their future career.

BLOGS IN PRESENTATION SKILLS FOR TEACHERS

IRENA REIMANOVÁ

Faculty of Arts and Philosophy
Department of English and American Studies
University of Pardubice, Czech Republic

e-mail: irena.reimanova@upce.cz

Key words blogs, pedagogical technological content knowledge, reflective competence, formal education, action research

Abstract: The presentation focuses on the use of blogs blended in the course of Presentation Skills for Teachers. At first, the presentation discusses the role of blogs in the context of formal education, particularly in the study field of English for Education. Those functions of blogs which can enhance the professional competence development of student English language teachers are examined from the perspectives of the knowledge base for teaching and the teacher as the reflective practitioner). Thus, the aim of the presentation is to investigate how the integration of blog assignments in the syllabus of the course may contribute to student teachers'pedagogical technological content knowledge development. For its applied effect, the research strategy selected is action research as it enables the course teacher, and in the same time researcher, to reflect critically the process of blog blending. The presentation introduces the action plan, analyzes learners' products, blogs, and discusses blog blending in the face to face instruction. Findings suggest that blogs may contribute to deeper understanding of student teachers' reflective processes and thus promote the interface of explicit and implicit learning.

DATA-DRIVEN DESIGN & PREDICTIVE GAMIFICATION

JAKUB ŠTOGR

Navreme Boheme s.r.o.

e-mail: stogr@navreme.cz

Key words: digital badges, gamification, data

Abstract: Everything begins and ends with a data. If you have them, you are able to find trends, anomalies and generally answers before asking yourself; you are able to understand and predict the behavior. With such a knowledge, a logical step is adapting design of (online) systems and services based on results of data analysis. But you go further and insert into systems specific elements which are redundant, not required in terms of functionality, but have a positive long-term impacts and/or influence the results. An example might be game elements that lead to higher awareness, increase retention or create brand image. Taking into consideration a fact that learning is a unique process incorporating elements such as trial & error or play, its gamification is therefore simpler than it seems.

MOBILE LEARNING IN HIGHER EDUCATION: SIGNIFICANT TRANSFORMATIONS AND FUTURE CHALLENGES

MAR CAMACHO MARTÍ

Department of Pedagogy
Universitat Rovira i Virgili in Tarragona, Spain

e-mail: mar.camacho@urv.cat

Key words: m-learning, teaching, learning, technology

Abstract: The aim of this keynote is to provide a framework to successfully meet the teaching and learning demands of the 21st century learners in technology-rich classrooms. It highlights Mobile Learning as an innovative pedagogical approach in order to support effective teaching and learning and considers how it can foster active strategies to enhance pedagogical skills.

PRIVACY IN THE AGE OF DIGITAL TRACKING, BIG DATA & INTERNET OF THINGS

WOLFIE CHRISTL

Austria

e-mail: cw@crackedlabs.org

Key words: m-learning, teaching, learning, technology

Abstract: Today nearly everything we do is recorded or monitored in some way. Nearly every device we use is connected to the Internet. Thousands of companies are tracking and analyzing our everyday behaviors. Businesses in many fields are increasingly using our data to make predictions, to manage risk and to motivate behavioral change. To which extent do companies track our daily lives in 2015? How do they process and exploit our personal data, and how will this impact our life? And: What is to be done?

During the development of the award-winning serious game Data Dealer the Austrian technology expert and digital rights activist Wolfie Christl did several years of research about consumer privacy. Recently he published an extensive study about global trends in digital tracking and corporate surveillance in the age of Big Data and Internet of Things, based on a comprehensive review of academic literature, news articles, activist research and corporate resources.

What can be predicted from our purchases, phone calls, Facebook Likes and other metadata, when using state of the art data mining technologies? How is predictive analytics already being used in the fields of marketing, retail, insurance, banking and human resources? The implications could be drastic – from price discrimination and social sorting to exclusion. So, how to minimize the risks while maximizing the benefits of information technology? What needs to happen? What should politics, civil society, companies and individuals do?

POWER TO THE LEARNER – HOW CAN DIGITAL TECHNOLOGY HELP TO LEARN?

SIGI JAKOB KÜHN

Germany

e-mail: sigi@jakob-weinheim.de

Key words ePortfolio, Mahara, LMS, technology

Abstract: Technology has skyrocketed these last years and catapulted our lives into a digitally driven environment. From car manufacturing to agriculture, many jobs have been automated by digital technology and more areas are moving into this direction. Digital has also become the buzzword in teaching and learning and is about to replace the "e" in eLearning. LMS have become widespread forms of eLearning and teaching at schools and university while MOOCs are an emerging form of mobile learning not only at universities and are about to revolutionize and democratize learning and studying worldwide as they are accessible for everybody around the globe on their mobile devices. This all looks as if we had come a long way in changing the paradigms of teaching and learning. Yet, to make learning really successful and sustainable there is more to do than just change procedures from analog to digital.

In my talk I would like to invite you to reflect about how to address the challenge of digital technologies in learning and how technology can help learners to make their learning efficient, valuable, visible and lifelong. As educators we may not be as digitally literate as many of our students with the latest devices but we have a responsibility to help them make use of them in a meaningful way for their learning. We have a responsibility not only to make schools and universities go digital to cope with the future but most important of all, make the learners fit for future by helping them in their own learning and guide them with the right tools. We have to be ready for a new role as learning facilitators and for losing control and trust learners to give them more control over their own learning.

One step into this direction of self-organized learning and student empowerment can be an ePortfolio scenario where learners can decide how they want to learn, what they want to collect as evidence for their learning, where they want to reflect on their progress, how they want to present their achievement and who they want to share their ePortfolio with. This is a rather practical approach to a new way of learning where the learner is in the centre and has taken over control.

PARTNERS

Partners:

AAEI, Association of Adult Education Institutions, Czech Republic

Institut of Cryptoanarchy

Navreme Boheme, s.r.o.

Prague Development Center (PRADEC)

Veriod

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Andragogika

AULA

Edumenu.cz

IKAROS

OpenEducationEuropa

CONTENT

INTRODUCTION 1-2

MOOC

MARI-CARMEN CALDEIRO-PEDREIRA, PAULA RENÉS-ARELLANO: DESIGN AND DEVELOPMENT OF AMEDIA MOOC FOCUSING ONCOMPETENCE 4-9

FRANTIŠEK DALECKÝ: SEDUO.CZ: MOOC PLATFORMFOR BRIDGINGTHE SKILLS GAPS 10-13

GAMIFICATION

PAVEL BREBERA, LINDA POSPÍŠILOVÁ: BADGING IN LANGUAGE LEARNING: A STEP BEYOND GAMIFICATION 15-24

JANA JACKOVÁ, PAUL DENNY: COLLABORATIVE LEARNING IN PEERWISE WEB 2.0 TECHNOLOGY 25-30

TAMÁS BOKOR, VERONIKA PELLE: PERSPECTIVES OF GAMIFICATION IN TEACHING SUSTAINABLE DEVELOPMENT 31-45

ZSÓFIA ILLÉS, KRISZTINA SZABÓ, ALEXANDRA SZEMERE: THE FUTURE POSSIBILITY ANDAPPLICABILITY OF ONLINE GAMES INHIGHER E**D**UCATION - A CRITICAL ANALYSIS OF ARGUMENT WARS BY ICIVICS 46-63

STUDENTS

PÉTER KRISTÓF NAGY: COLLEGE STUDENTS'MOTIVATIONS FOR SIGNING UP FOR E-LEARNING COURSES 65-75

JANA PUSCHENREITEROVÁ: STUDENTS' PERCEPTIONS ON E-LEARNING WITH LEARNING MANAGEMENT SYSTEMS IN ENGLISH LANGUAGE COURSES. A QUALITATIVE SURVEY 76-89

MARTINA KUNCOVÁ, HANA VOJÁČKOVÁ: ANALYSIS OF THE INFLUENCE OF THE MOODLE USAGE ON THE STUDY RESULTS OF COMBINED FORM OF STUDY STUDENTS 90-100

MONIKA FRANIA: GENERATION RELATED DIFFERENCES IN VIEWS ON THE LEVEL OF MEDIATED COMMUNICATION SAFETY ON THE INTERNET 101-111

KORNIENKO OLEKSIY: FULL-TIME/DISTANCE TEACHING CONCEPTS "SAFETY AND PSYCHOSOMATIC HEALTH PROMOTION" OF KYIV'S TARASSCHEVCHENKO UNIVERSITY STUDENTS (2006-2009 YEARS) 112-116

M-LEARNING

VERONIKA NENIČKOVÁ: IPAD IN ACADEMIC SETTINGS: SECOND YEAR INTO THE PROGRAM 118-125

TEREZA POTUCKOVA: USING TABLETS FOR PROJECT-BASEDLEARNING IN ENGLISH AS A FOREIGN LANGUAGE: COURSE DESIGN 126-135

OTHER

SINAN OLKUN, ZEYNEP AKKURT DENIZLI: DOT ENUMERATION, SYMBOLIC NUMBER COMPARISON AND MENTAL NUMBER LINE ESTIMATION SKILLS IN DETERMINING STUDENTS' DYSCALCULIA TENDENCIES 137-144

MICHAL ČERNÝ: DIGITAL INFORMATION CURATION AS AFORM OF FORMATION OF PERSONALIZED LEARNING ENVIRONMENTS 145-158

JURAJ DATKO: SOCIAL NETWORKING SITES IN HIGHER EDUCATION: POTENTIAL BENEFITS AND DRAWBACKS 159-166

KRISZTINA SZABO: DIGITAL READING AND TEXT COMPREHENSION: COMIC READING AS A NEW METAPHOR FOR DIGITAL READING 167-178

STEPANKA HRONOVA, PAVEL ROSENLACHER: A CROSS-DISCIPLINARY APPROACH: ESP INSTRUCTIONAND IMPLEMENTATION OF NEUROMARKETING METHODSAS CURRICULUM INNOVATION 179-186

ABSTRACTS

JAN BESEDA: LEARNING 2.0: DUOLINGO 188

MIKLÓS HARSÁNYI: IS ANYBODY LISTENING? – POSSIBLE SOLUTIONS TO THE MULTITASKING PHENOMENON 189

IRINA MATUSEVICH: TEACHING ENGLISH FOR ACADEMICPURPOSES ONLINE 190

RIDVAN PESHKOPIA ET ALL: PUBLIC OPINION RESEARCH AS A TOOL OF STUDENT INDEPENDENT LEARNING: EVIDENCE FROM THE EASTERN EUROPE 191

IRENA REIMANOVÁ: BLOGS IN PRESENTATION SKILLS FOR TEACHERS 192

JAKUB ŠTOGR: DATA-DRIVEN DESIGN & PREDICTIVEGAMIFICATION 193

MAR CAMACHO MARTÍ: MOBILE LEARNING IN HIGHER EDUCATION:SIGNIFICANT TRANSFORMATIONS AND FUTURE CHALLENGES 194

WOLFIE CHRISTL: PRIVACY IN THE AGE OF DIGITALTRACKING, BIG DATA & INTERNET OF THINGS 195

SIGI JAKOB KÜHN: POWER TO THE LEARNER – HOW CAN DIGITAL TECHNOLOGY HELP TO LEARN? 196

PARTNERS 197

Reviewers

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ho školství, v.v.i., Praha, Czech Republic

Mgr. Hana Ovesleová, Studia nových médií, FF UK, Praha, Czech Republic

Mgr. Jakub Štogr, Navreme Boheme, s.r.o., Praha, Czech Republic

Lynette Naidoo MSc., University of South Africa, South Africa

Mgr. Zbyněk Machát, Centrum pro studium vysokého školství, v.v.i., Praha, Czech Republic

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