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Content

Dear readers,

we dedicate this issue to the 12th international conference DisCo 2017: "Open education as a way to a knowledge society", which was held from 26th June to 27nd June in Prague. Over 90 participants from 15 countries took part in the conference. 26 participants used Central European Initiative (CEI) support for their travel costs. The speakers delivered over 40 presentations. Nearly 90 % of participants were from CEI countries. For the first time in the history of the DisCo conference our main partner was Microsoft, which hosted the conference in its own building. The conference program was opened by the welcoming speech of Jaroslav Fidrmuc, Deputy Minister of Ministry of Education, Youth and Sport, Czech Republic. A panel discussion traditionally made an integral part of the conference and it was called: Open Education: the challenges and experience. The panellists were Anastasia Syzenko, Petra Aczél, Irena Bifordová and Francesco Pisanu. The panellists defined the following four areas as the most challenging ones for Open Education: 1) Opening minds of teachers and users 2) Quality assurance of Open Education content and its processes 3) The technological background (fast internet connection accessibility) and 4) Funding of Open Education.

What follows is a round-up of content presented at the conference and turned into a thematic special issue. This issue contains 4 articles from Czech authors and one research report. Michal Černý in his article introduces a case study of innovation of 2 courses. The first is the course Information Literacy that is newly built and opened to the public without restriction, offering the possibility of studying online. It is based on text materials and skills development. Such a course at university normally has between 500 – 1400 students and is an introduction to information work, professional text creation or information search. Although the course is fully an e-learning one, it is based on pragmatic education. The paper also presents basic information about the course evaluation and attempts a comparison with previous years, when it was a classic course in Learning Management System of Masaryk University, closed to a wider public. The second course, which is also innovative and open (for any interested person) is Creative Work with Information, with the capacity of about 200 to 300 students each year. The course was developed in collaboration with NOSTIS, on whose platform it is run. Finally, Černý's article shows how on-line technologies can help develop the third role of universities.

Dana Zerzánová, Ivana Čechová, Jana Beránková from the University of Defense show how they develop the blended-learning course for language learning. The article also presents the findings from a questionnaries survey and how they will use these finding in future.

Jana Vejvodová writes about how she works with microteaching outcomes in preparing teachers in didactic seminars. The students rehearse their teaching outcomes (with a length of 15-30 minutes, which is a little bit more than what is usually stated as microteaching), they work in pairs and record themselves on two cameras (one focused on the teacher, the other one on the students). Videos are then uploaded to Moodle, where students can evaluate not only themselves, but also each other. The combination of self-evaluation and peer assessment is essential for the development of future teachers.

Fourth comes the article by Alexandra Hrušková, who studied the business models of Massive Online Courses. Adopting a comparative perspective, she is focused on existing MOOC platforms. These platforms are universities, non-profit organizations, and also business companies all around the worl that adapt to the different types of business models to provide MOOCs to the general public. She closes her paper with the recommendations for potential Czech MOOC creators.

Last but not least is the research report from Ukraine. It shows how the Sumy National Agrarian University prepares a course in Moodle for foreign students and rural citizens. The report highlights the importance of identifying good practices in specific areas of youth and adult education within the educational projects under an increasing foreign students flow into the country and a rapidly rising number of the rural unemployed. The results of the report generalize the best approaches identified. Although the authors do not solve the rising unemployment issue, this report could be an inspiration, drawing one's attention to the issue and, widely, to the Ukrainian Higher Education in a general sense.

We wish you a pleasant time with this issue.

Innovation of the courses of information literacy as a way for openness, personification and competencies

Michal Černý

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Abstract: Implementation of massive open online courses in the university environment is still widely debated topic. Whether it involves activities that universities targeted towards the general public, for example through EDX courser or Udacity. Or conversely courses that are designed to satisfy demand within the institution, but are realized through e-learning. We can discuss on the form, content, but also the meaningfulness and effectiveness of individual activities.
In this paper we focus – form of case study – one of two courses of innovation that tries to combine classical university courses with an openness to the public. We will attempt to describe the motivations, challenges and interesting aspects of the feedback received, which relate to both courses.
The first is the Information Literacy Course that is newly built on a web-based and open to the public without restriction, offering the possibility of studying nonlinear. It is based on text materials and skills development. Course at university normally has between 500 – 1400 students and is an introduction to information work, making professional text or information searching. Although it is fully e-learning is based on pragmatic education. Paper presents basic information about the course evaluation by students and attempts a comparison with previous years, when it was a classic course in LMS IS MU and was closed.
The second course, which is also innovative and open (for any interested person) is Creative Work with Information, which studying about 200 to 300 students each year. The course was developed in collaboration with NOSTIS, on whose platform running. It focuses on creative thinking and work with information through unconventional ways (with the support of technology). Format partly follows the usual MOOC – offers peer assessment of the ongoing tasks, study materials are in the form of video and PDF text support. Originally, it was also a common course located in the LMS, standing on tutor repaired tasks and texts. Now he can besides students of Masaryk University also frequented by the public. The paper will perform a critical analysis of the changes made.

Introduction

Information education in a university environment is undoubtedly one of the topics that are both vividly discussed and actively addressed in a specialized forum such as IVIG. We do not want to open a debate here about who should be the guarantor of information education at university or about the obligation or facultative nature of such education.

On the contrary, we would like to pay attention to the format of such educational content if it is processed in the form of e-learning. Whatever we try to work on with more general theories

and concepts, we would like to take our reflections on two courses that are being implemented at KISK (Department of Information Studies and Librarianship) in the academic year 2016/2017. We do not have the ambition to offer the only right solution, but we believe that the two courses we mention will saturate some of the problems that have emerged in previous forms of distance development of information literacy. From this point of view, we believe that the contribution can be an interesting stimulus to discuss how to do this information education or not to do it at its own university workplace.

Default situation

Information education at Masaryk University is realized by a relatively wide range of activities, including both presenter courses and courses of faculty libraries as well as online educational activities. Nevertheless, the pair of KPI11 (Information Literacy Course) and KPI22 (Creative Work with Information) courses are crucial within the university, both in range and the number of students studying across faculties, as well as in the scope and structure of both projects.

KPI11 is a basic course of information literacy, which is based on the problem of creating text and other competencies that students need for successful accommodation in the academic environment. The traditional target group of the course is students of the first year of bachelor study or those who write their first qualifying work. In this respect, the course is actually academic propedeutics, which also creates a specific view of what is the role of information literacy, or how it is treated with it. It is not a new course, it is taught since spring semester 2006, since 2012 has been moved to the autumn semester (Chytková 2011). The number of students is oscillating from about 600 (autumn 2016) to about 1400 (autumn 2013). It is therefore a course with a relatively significant impact in terms of the number of students.

The course has undergone a major innovation change in 2016 in the context of the CEINVE project (Zadražilová 2012, 34-39) when it has changed both in terms of content (significant refinement of the search for information and the enhancement of the topics related to their analysis and creation), thus formally – learning materials, tests and the end of the course. Gradually added videos (2014) or audio stories accentuating the narrative level of the course (2015).

The course took place all the time in the IS MU environment, which allows relatively simple management of the number of students and their tasks or testing. In terms of content delivery, an interactive layout was used that allows for basic HTML formatting. Learning materials consisted of PDF files. (Černý, Chytková, Mazáčová, Šimková 2014, 65-72) The emphasis on this concept was at a certain level of school – defining educational goals, learning and testing, including a summary of each module or a self-test option. In this respect, the whole course was based on a somewhat cognitive paradigm with constructivist elements (Siemens 2014, Kop 2088), which manifested

itself in the partial tasks and especially in the creatively conceived final work. Some limitations of cognitive functions have been achieved by introducing webinars, trying to use Facebook for communication and other elements that have led to greater interaction between students and teachers, so that ultimately it was possible to talk about the predominant constructivist concept.

Otherwise, creative work with information is taught from 2010, originally in autumn 2012 in the spring semester. From the beginning it is conceived as a smaller (for a maximum of about 300 students), which tries to emphasize creative thinking and its development in relation to information. He was originally conceived as a constructivist, except for the IS, he also uses Facebook to share interesting information; He even had a blog on Posterous, but ended up with the end of the app. The study materials were from the beginning mostly text, sometimes supplemented by video. At the time of the CEINVE project, the course was combined with the participation of seminars, where various techniques and themes were presented. (Mazáčová 2013)

Motivation for innovation

From the above, the basic motivational framework for implementing the fundamental innovations in the two courses described above is evident. In either case, it is a change or at least a rewrite of the basic paradigmatic framework on which we are based, or the identification of a pedagogical school – for example, changes in the KPI11 course are based on Dewey's pragmatic pedagogy (Kadlec 2007; Šíp 2016, 134-151; Dewey 1992). This grasp of the pedagogical framework is something that is not done at many e-learning courses, or is governed by "traffi" handbooks and intuitions. We think that a thought-based thinking base can be the key to doing better, logically more sophisticated courses that will have a consistent character. One of the motivations for change was the loss of consistency of the courses, which was associated with their gradual expansion, adaptation and replenishment. Gradually, the individual elements, but neither the language nor the overall ideological framework of the course, created the impression of complexity and clear delimitation.

The second problem was the over-schooling of both courses, which was largely related to IS MU's e-learning environment, which is visually unpleasant and too linear. Learning materials in PDF format were a textbook impression. We were not completely satisfied with that. We believe that learning – especially in the field of information work – should respect the information behavior and students' environment, not to be extravagant, sterile and too theoretical. This requirement does not reduce the demands on students or the difficulty of the whole study, but to a great extent redefines some goals or means. In both courses, we focus more on competencies and attitudes than on knowledge that would be a prerequisite, for example, for information workers or library students.

Openness is another important concept that we wanted to change during the innovations. The starting point is the social responsibility of the university towards society. There is an aspect of public funding, where we believe it should be logical and correct that products that are used for education are not only for the students of the given field, but can be used for wider development of education. This openness is closely linked to the possibility of impact on the educational activities that courses are pursuing. We were looking for a design that would allow both courses to be offered to the wider public, either for their own study or for the further implementation of individual materials or the whole course in educational practice. Therefore, our ambition is not to preserve study materials for our students only, but to offer the opportunity to educate as wide a range of candidates as possible.

In this area it is possible to mention not only the motivation given by the long-term intention of the university or the simple accent of social responsibility, but also more pragmatic reasons. An open course (Tait 2000, 287-299; Hannafin, Land and Oliver 199, 115-140) may have a greater impact on the professional community and potential citation or infrastructure involvement in further cooperation. As both courses are designed, they can serve as advertising (in good terms) for those interested in studying.

Another motivation for the changes was gradually becoming less logical and a pure content structure that required more interference than continuous patching or replenishment of news. Also, strategic documents related to information education, which are relevant to KPI11 in particular, have undergone some development over the period and could be used as a basis for innovating courses.

Last but not least, the motivation was to reflect on changes in the technological and design environment of online services and online education. The gradual emergence of MOOC courses (McAuley 2010) or web courses has been a significant competition for classical linear projects, often based on a weekly structure and thematic strength. These courses, which are also often open, represent a certain competition that the university environment must deal with. They can do this either by curricular closeness or by trying to innovate and adapt to current trends.

Further incentives for innovation were given feedback from students from the subject survey and other research methods. This set of motivations together created the environment of the basic innovation framework in which we tried to transform the two courses.

Innovation of the course Information Literacy

The paradigm framework for innovation of the course Information Literacy in the autumn semester of 2016 was the implementation of pragmatic pedagogy by John Dewey. At first glance, this might act as a certain contradiction; to link pragmatic pedagogy and an online course, but we will try to show that it is not.

The first building block of pragmatic pedagogy is the combination of theory and practice. One should learn what he needs for a practical life. Working with information is one of the functional literacy (Elmoborg 2006, 192-199) that is necessary for adaptability in the information society. In this respect, the ability to adequately handle information is something that is needed for life. The entire course is set up so that the student chooses the subject of his / her work, works with resources and databases that are relevant to his / her field and interest. The fact that every student can work on something that is interesting for him / herself, and this throughout the semester, we perceive it as essential, and it is also something the students positively appreciate in the feedback of the course. (Černý, Chytková 2013, 33-39)

The combination of life needs and the course is related to the choice of tasks that do not focus on the practice of any universal skill, but on clearly identified important tasks and competencies that are always associated with the subject. Students should not, ideally, create any role in the drawer, but they should systematically prepare themselves for the creation of their own text, which they will continue to use.

A fundamental change has gone through the whole environment. Instead of IS or Moodle, the entire educational content is transferred to Wordpress (Patel, Rathod, Parikh 2011, 182-187) so that the entire course acts as a website that focuses on the topic of working with information. Instead of a textbook or a script, both the language and the form were directed to a regular site that students read outside of normal learning. The aim was to create a material that would have an ordinary and natural impression. For these reasons, we tried to avoid all the shapes, such as repeating, learning, the frames etc. that are typical of teaching materials, and we have focused on really using the common language.

Also, individual chapters are always set up so that it may be a separate article that has its own message, content and can be interesting in itself. The text contains links of two kinds, both on external sources, but also on other parts of the course that are thematically related to it. This approach allowed us to design lessons in a less linear way so that they can skip or reverse the course in a way that the student understands what to do even if, for example, he was not attentive enough in some previous lesson. Links to external sources offer both the possibility of better contextualization, but also correspond to the concept of a classic URL site. Such a concept reflects standard information behavior and offers better possibilities to link educational content to the external environment.

Designed and conceptually we tried to reflect trends in web courses. (Gilbert, Moor 1998, 29-35) The combination of pragmatic pedagogy and modern technologies in online education enabled students to offer a higher level of study autonomy, the ability to proceed at their own pace (for example, it was principally possible to complete the course outside the final test in the first week of the semester), selecting own tools, Throughout the course we also sought some curatorial activity, which results, for example, in a classified catalog of tools that appear in the course.

This tutorial model of learning materials and tasks was followed by tutorial care. It was a fully online course where a certain social distance was offset by the rather intense and close relationship of the tutor and the student. According to feedback, it was one of the key moments of the course where the tutor not only repairs tasks but also gives overall feedback and help. This relationship was strengthened by the fact that the tutors chose students for themselves. (Ehlers 2004)

Innovation of the course Creative Work with Information

Another situation in terms of innovation was in the subject of Creative Work with Information. From the point of view of the methods used, he went through a more complex cycle of changes, in which the purely online course became a blended learning course and then again only a distance learning form. The key issue in terms of planned changes was how education should be developed in the field of learning creative thinking and working with information, which is undoubtedly one of the most individual activities. Working with unified tasks or a written test represent only a very limited opportunity to work with feedback, and rather they evaluate the knowledge and mechanical skills of the student, not the individual ability to work creatively with information.

As a key, we also evaluated the students to learn not to stay in their thought schemes and to try to reflect and see the work of others. For this reason, we have decided to use the system of mutual evaluation of students amongst themselves, where the continuous tasks students not only create but also give feedback to their co-workers. It is not just a cost saving but a systematic activity that is supposed to encourage divergent thinking and not to conclude into limited thought schemes.

We tried to solve the problem of individualization of education and its real connection with the student's personal and real problems through a creative diary that forms a significant part of the student's assessment of the course. It is a portfolio in which the student can write his own creative practices, test methods, approaches, warm ups. On the one hand, they try out the different methods and procedures, but they can simultaneously apply to their own needs and problems. The second aspect is that students can more systematically use those techniques that fit them in real situations. This becomes the course of something that affects their way of thinking and behavior.

As far as openness is concerned, we have chosen to publish a course on the NOSTIS platform. They can enroll in MU students (if they want credits, they only have to submit the creative diary at the end), as well as the public who can get a common certificate signed by the lecturers. The primary learning tool is videos that have a dialogic character. Each module is accompanied by a text support and a short task, the repair of which is done through peer assessment. (Topping 1998, 249-276) The course is open and free.

Between each lesson, you can freely walk through the course not (unlike KPI11) open at one time but in three stages. Nevertheless, it offers a certain nonlinearity similar to KPI, where we try to make students aware of the contexts of individual creative techniques or approaches.

From the point of view of connectivist elements, other important elements are available outside the openness of the public and peer evaluation. The first is a Facebook group that acts as a source of mutual inspiration, knowledge transfer, or interesting links. In addition, it fulfills the basic organizational role of the course. Another element is Medium, which we use as a basic publishing platform that allows us to get content that is otherwise difficult to get into classical educational structures and forms, such as mind mapping tools, specific partial tutorials, inspiration, etc.

What is missing from these courses in terms of a large part of the current connctivist courses is the support of Twitter (Downes 2008). We tried to implement it in KPI11 and we were unable to find a suitable communication form and a sufficient number of subscribers. Not even at the level of course participants or the general public.

Sources of possible data for evaluation

There is a relatively large amount of options for evaluating e-learning courses. Previously, for example, the KPI11 course was studied through the focus group, but for organizational and financial reasons we did not join it this year. On the other hand, abandoning both KPI11 and KPI22 MU Information System has enabled significantly improved measurement and analysis of user behavior through analytical tools.

In the case of KPI11, a pre-test pair and a final test are prepared for the evaluation. They were designed to be mutually compatible so as to enable them to measure the basic quality of the cognitive shift and knowledge course. Unlike common knowledge tests, both were conceived as competencies and were based on the fact that the student had to be able to work with the text. Although this way of working with students allows more focus on competencies than on knowledge, it has been shown that this method of evaluation is not entirely ideal, especially for over-demanding design and complicated construction of questions.

A key source of information is student feedback, which can be obtained through four basic channels. The largest and most important is the subject poll, which is unified and the same for all subjects at the university. It offers insights into basic questions such as the adequacy of the course in complexity, tutoring, or overall satisfaction with the course.

The second source is spontaneous feedback from students sent feedback by e-mail, which is mostly praiseworthy and students will appreciate some aspect of the course directly to the tutor. You can also work with discussions and reactions on Facebook. Last but not least, we did some informal interviews with participants in order to find some more complex information or impression of the course.

In terms of analytical tools, Google Analytics data is available that is associated with the part of the course running on Worpress. Therefore, spending time and other metrics are not counted, for example, for submitting tasks or interacting with Facebook. Google Analytics offers both basic features and reports, such as average time spent on a page, traffic sources, where a user connects, etc., but it also allows you to track more complex and demanding metrics such as the flow of users to your site.

For KPI22, the data differs in that Nostis data is available instead of Google Analytics and no ongoing interviews are conducted. There is also no pretest or posttest, as this does not allow the structure or overall focus of the course. In KPI22, therefore, analytical research methods are poorer. In the interest of better data, there would be opportunities for phenomenological in-depth interviews or the use of methods to map metacognitive processes.

Some interesting data from the KPI11 course

At this point, we'd like to focus on some of the specific data that emerged in the process of evaluating the KPI11 course, which may be interesting for other innovative projects. The first information we can compare is about course marks and learning success.

Figure 1: Marks for the year 2016 – a course on innovation changes

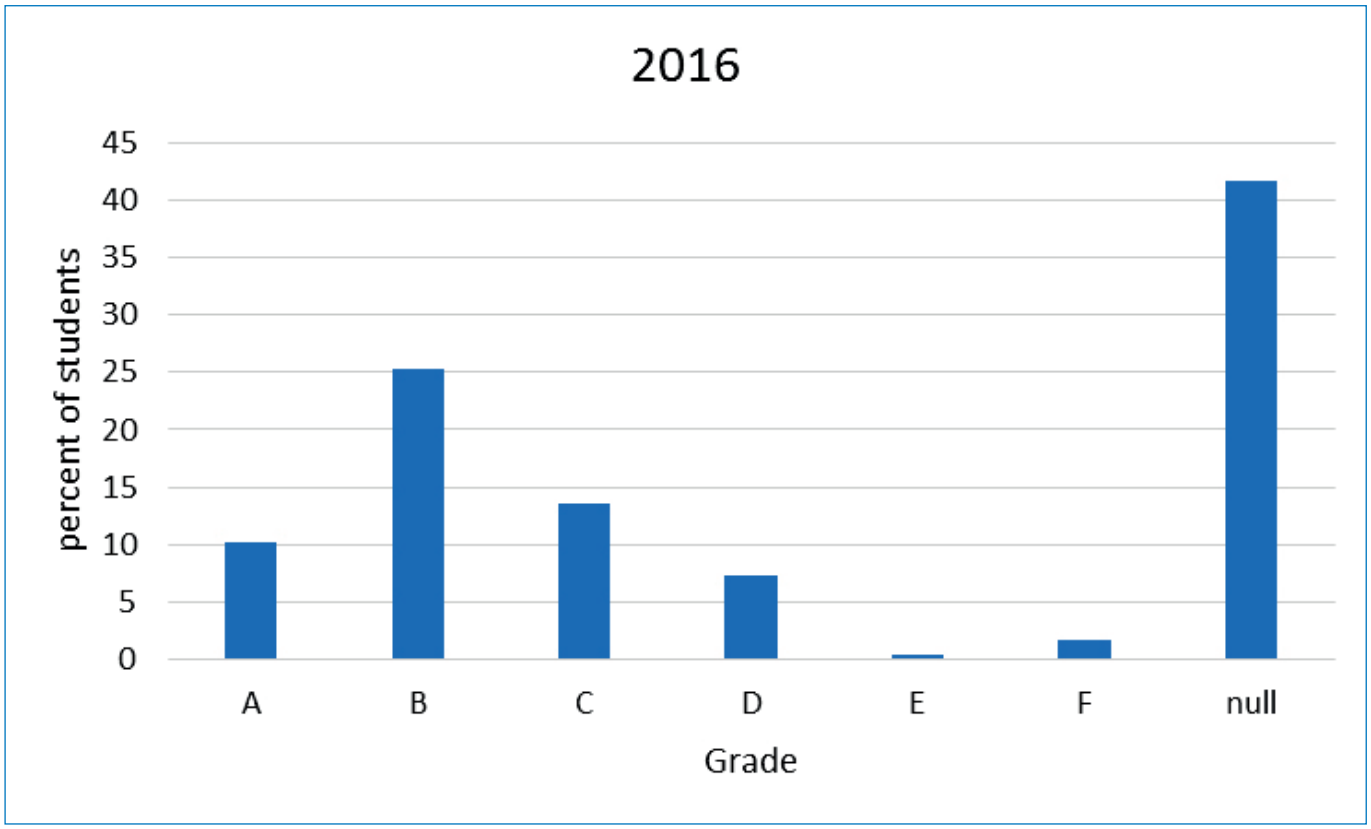
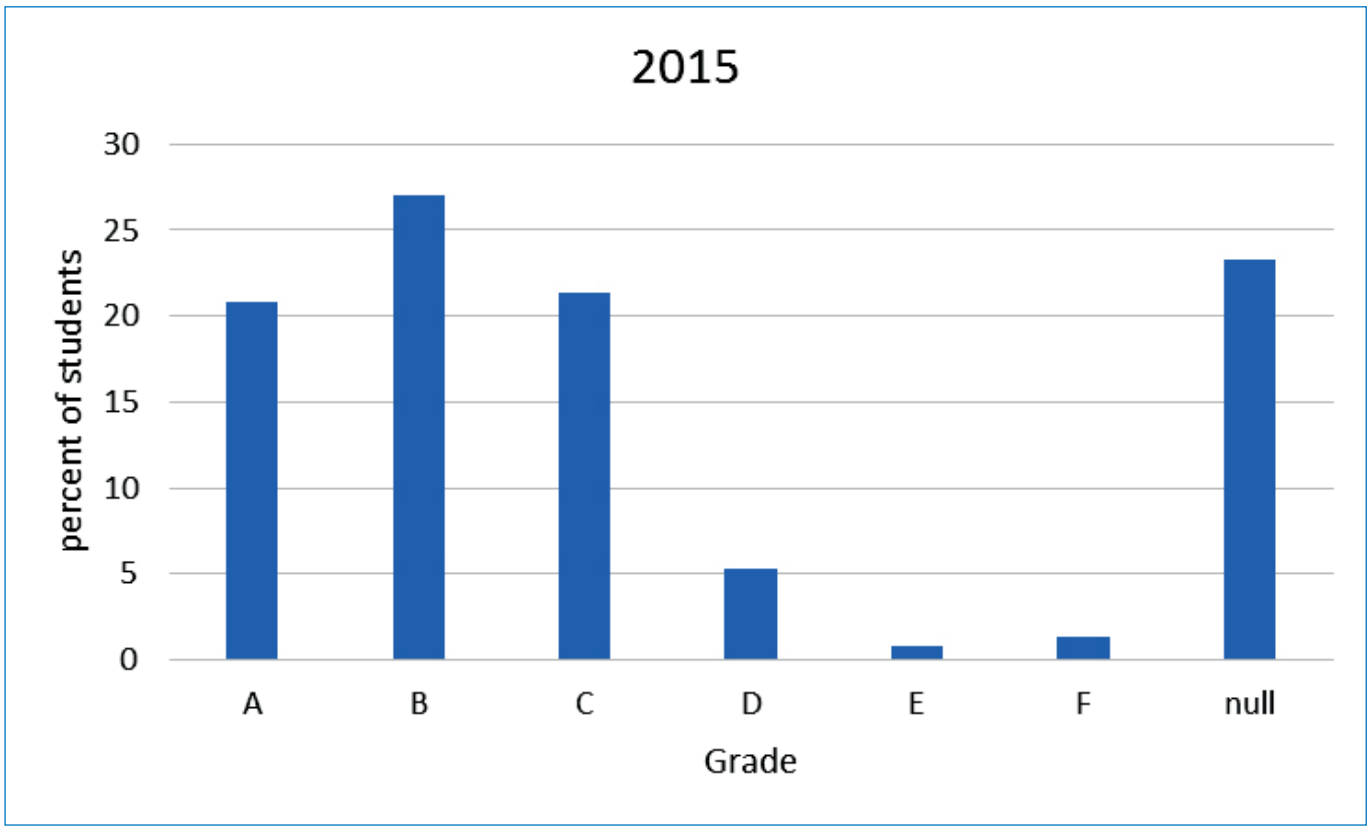


Figure 2: Marks for the year 2015 – a course before innovations.



From the graphs above, it can be seen that the innovation change was slightly higher in terms of stamina (from an average of 1.63 to 1.73), but it is particularly problematic that the course has a high degree of inertia, which is related to the fact that The student does not pass all the tasks or do not pass the final test, from 23 % to 42 %. In this context, it is interesting that there was no information in the feedback about (except for a single contribution) that the course would be light, which was a typical complaint before the changes. On Facebook, this view emerged during the entire semester once before the end of the course. It seems that the changes made rid of the course of the easy subject, but at the same time led to a significant deterioration of the study failure.

The hypothesis that is offered here may be whether a change in the structure of the course rather encourages students who are able to identify with their goals and use it for their own learning needs, but at the same time does not lead to those who can not do it. They did not study it until they could pass through more formalistically. This may also reflect the answers from the poll:

"I'm glad I attended the course. I have learned a lot of interesting and very useful things that I will surely use when writing my diploma thesis. "

"I liked the concept of the subject. Even though I have already completed a Bachelor Thesis, I have learned a lot of new ones. I found that less sometimes means more :-) "

"It was an on-line course, interesting, but I was terribly lazy, some tasks were a bit difficult some easy overall it was fine"

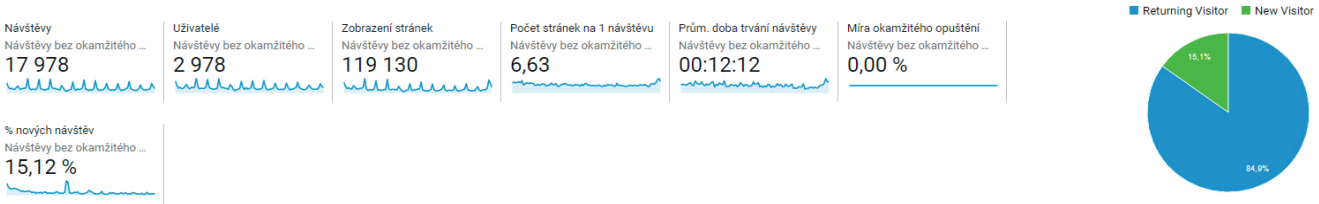
"Overall, I am very glad to have done this subject, although it was, in my opinion, one of the most difficult. I learned not only a lot of useful things to write different seminars or essays but also try to better schedule time, which was given by the obligatory tasks for every week."

"The materials were interesting and useful for writing academic and professional texts. I learned a lot of information that I will use when writing my diploma thesis. Task and seminar work repairs were always expressly quick. Praise :)"

"Thank you very much for the excellent course, amusing to think about the topic, and the challenges have forced me to try things that I would not find myself. I learned to use new tools. I appreciate very careful feedback, hat down before reading all the seminar work, it must be really challenging. Excellent course!"

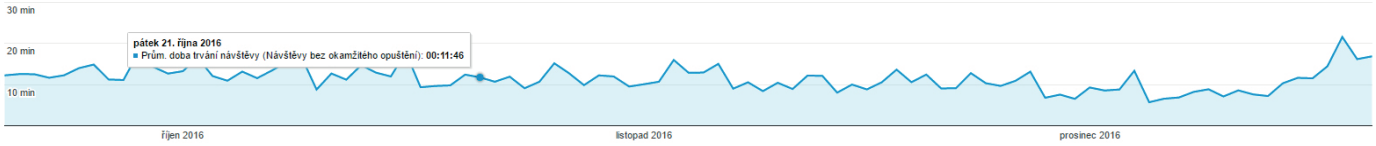
Analytical possibilities of the IS in the case of working with several seminar groups are relatively limited in the feedback analysis. It is not so easy to find out how the course leads to the individual statistics being tracked, and more importantly, the above worded commentary is more valuable. From the outburst, the use of multiple learning and information environments (IS, Wordpress, e-mails…), the need to register with a variety of online services, and ambiguous or difficult assignments and tests appeared. The feedback also shows that a non-trivial part of the students took the course more time than planned.

Figure 3: Summary of basic data.



As for the average time of one visit to the site, it takes about 12 minutes if we clean up the immediate departures. This number can be interesting from several views. First of all, the data do not indicate that this time will change significantly over time (that is, for example, remain more motivated and more careful students), beyond the understandable final fluctuation that can be attributed to the test preparation. Another interesting aspect is the absence of time fluctuations during the week. For example, students who study mostly on Sundays, as shown in the following chart, are not less careful.

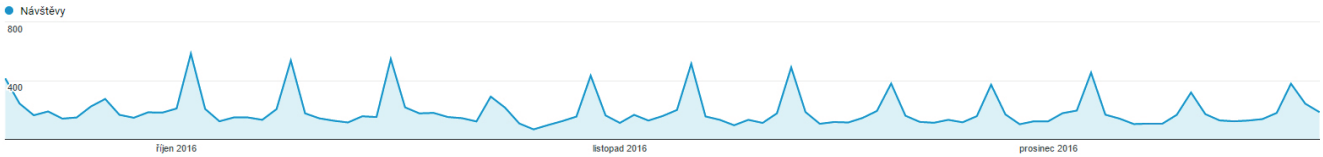
Figure 4: Average time of one visit to the site.



Absolute data should be taken with a certain margin. It is unclear how many visits per student. Above all, course study takes place largely outside of the teaching materials themselves. However, the data offers at least some correction of the myth that students studying on Sundays (the deadline for submitting a task) are less careful. The other interesting thing is that the attendance almost does not show up with the newsletter that was sent every Monday. There are no significant changes to other days.

The data in Figure 5 then shows how the weekly rhythm was studied. Peaks are connected with Sundays. There are two minor dips – one in October that is linked to a public holiday and a longer block of leave, and the second significantly less pronounced at the beginning of the test week, which are obviously easy to understand and interpretable.

Figure 5: Web site traffic during the semester.



We will also be able to offer geographic data from other interesting data. The course had several participants abroad, where it is to be expected that Erasmus students who enrolled in the course and went abroad. Interestingly, there are generally more pages displayed on the page for a longer period. The map below shows that the course has the most students in Brno, but that it is actually studied in large part of the territory of the Czech Republic. This map can also serve as a basic idea of where the students of Masaryk University come from. According to our court, a great share of Prague may be surprising, of course, the approaches from Moravia are of course dominant.

The theme that we find extremely interesting is the use of a mobile connection. This accounts for less than 10 % of the visits, which is well below global data. Explanation can be related to the fact that there is a connection between the task and the study (and here it is more convenient to use a regular computer) or in the fact that the students are not used to studying this, mainly because the IS is not well prepared and usable for mobile phones. However, the data give a fairly clear signal that, for example, the development of a mobile application will not be a crucial and fundamental issue for the majority of students.

Figure 6: Localization of access points come from the Czech Republic visitors.

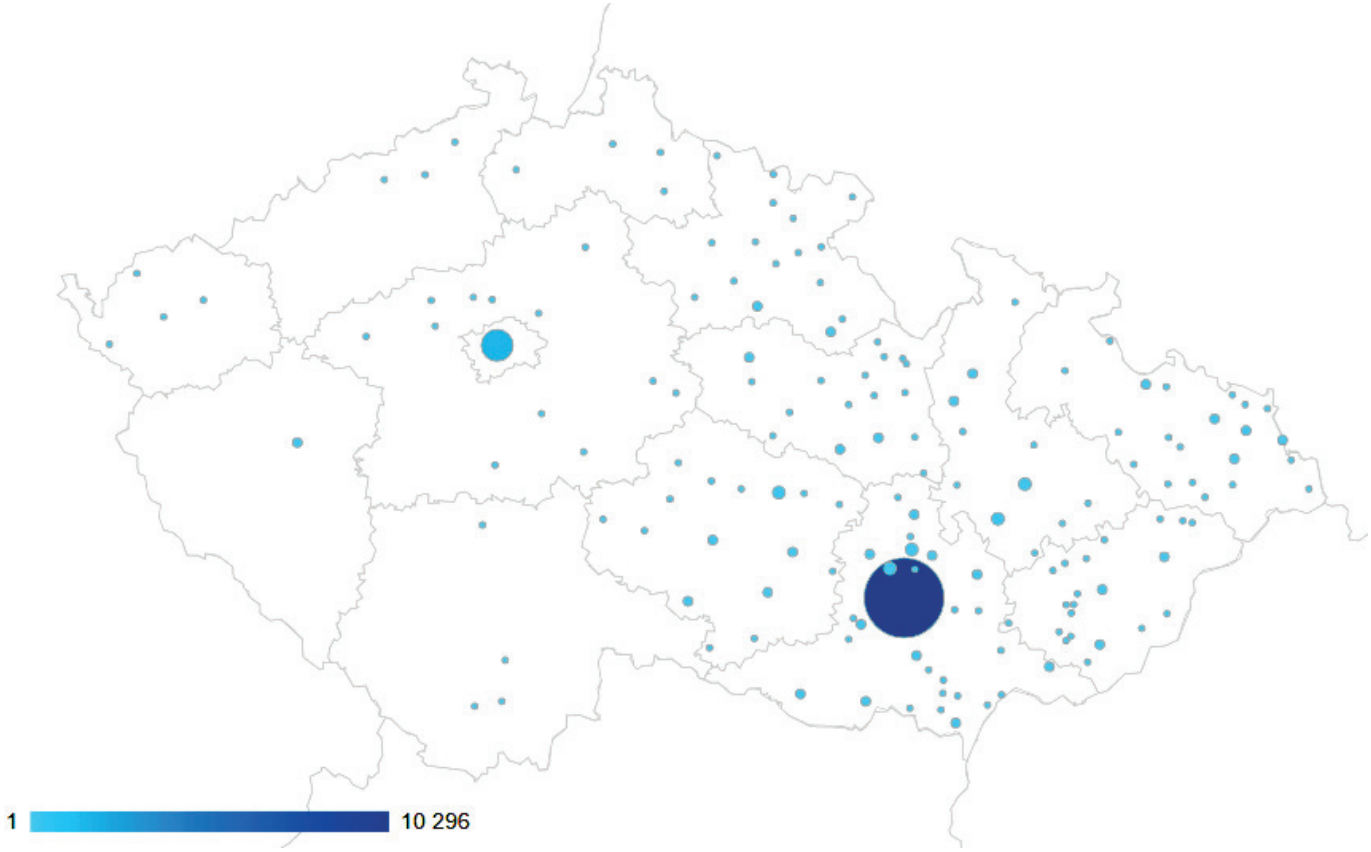


Figure 7: Mobile users account for less than 10 % of visits.

	Kategorie zařízení	Návštěvy	Návštěvy
	Návštěvy bez okamžitého opuštění	17 978 Podíl z celku v %: 70,87 % (25 366)	17 978 Podíl z celku v %: 70,87 % (25 366)
1.	desktop	16 320	90,78 %
2.	mobile	1 164	6,47 %
3.	tablet	494	2,75 %

Since the beginning, the course has been conceived as nonlinear, meaning students have the ability to click on the terms that appear in the text, and thanks to them, they can easily browse the content according to their interest, not just according to the didactic intent of the authors of the text. The images below show how data from such click analysis can look like. The average clickthrough rate for links is around 2 %, only exceptionally, there are some more. There are more ways to work with these data – links with a very low click (below 0.1-0.2 %) are unnecessary or poorly set. In case of very high numbers (over 5 %), the question is whether it is an ideally conceived link or a concept that is totally unclear, and a large proportion of students are "discovering" this click.

Figure 8: An example of a click analysis on internal links.

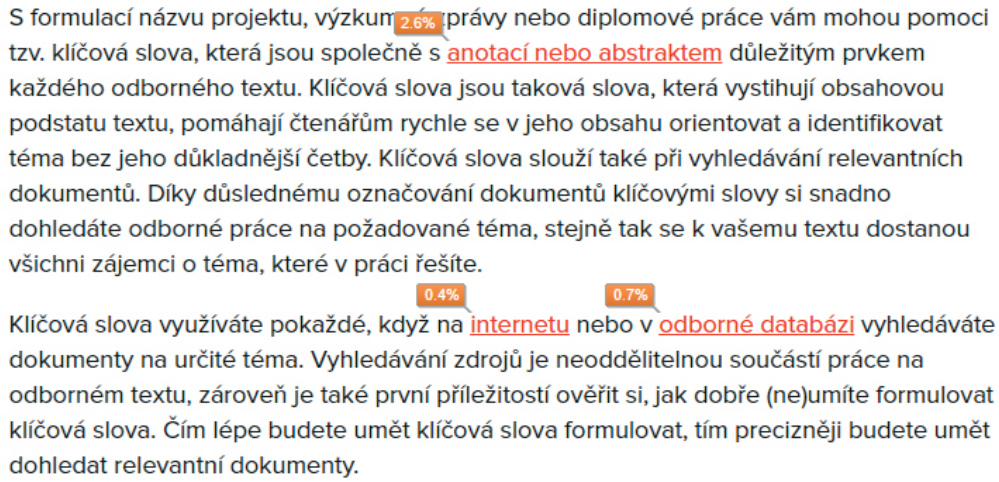
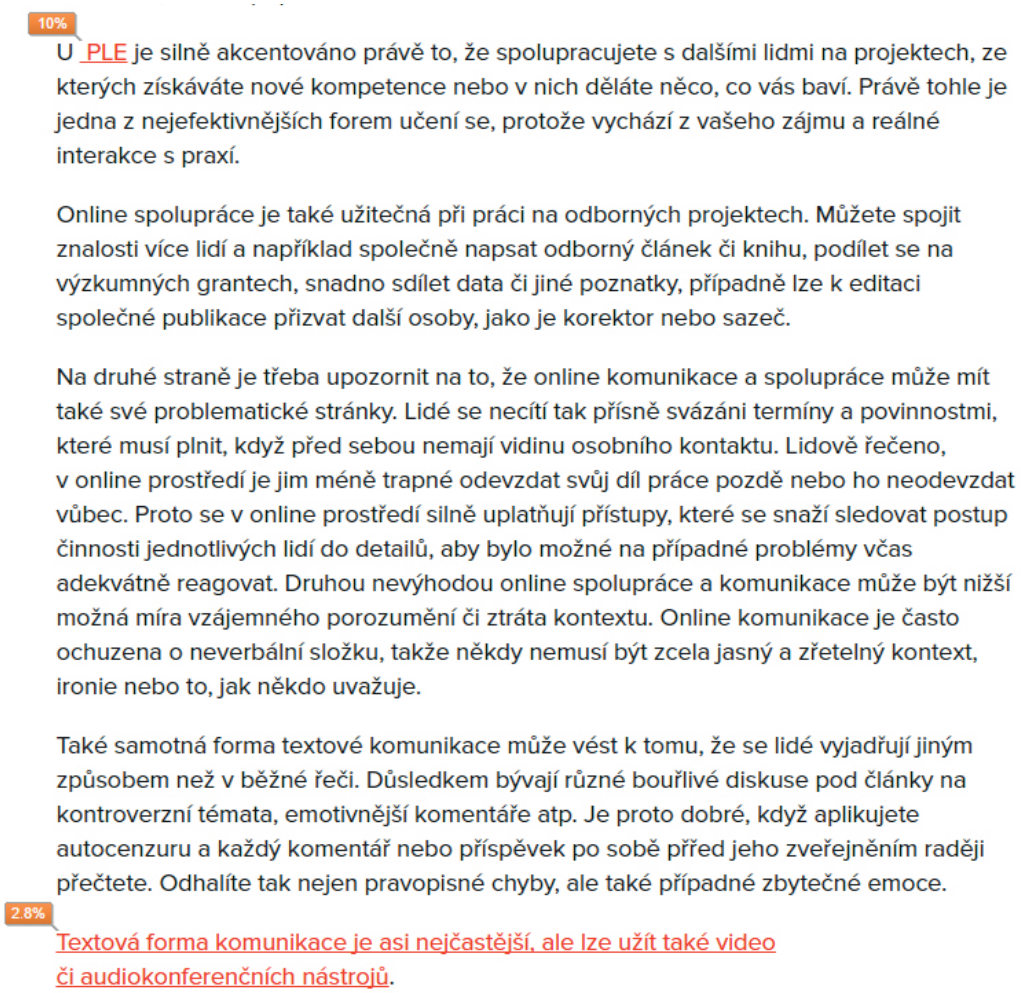


Figure 9: An example of a click analysis on internal links.



Summary

The aim of our study was to show how it is possible to think about innovations in online courses – from general paradigm grasping, through selected technologies to search for such research tools that will allow us to study the functionality and usability of our theoretical grasp or the first version of the course.

In the article, we have tried to show some possibilities of innovation of of the courses of information literacy, which have an open character. It should be emphasized that the transition from a common closed course to more open and connectivist solutions is not something that would suit everyone or was associated with less work. The more active the social networking course and the more open the interaction with external visitors, the more it requires the presence of a professional who will take care of the social network.

Although the research data presented to us was more probatorial or illustrative than the ambition of a complex research project, we hope to show the basic methodological possibilities that can be associated with the evaluation and analysis of such courses and which may help other innovators develop their own projects.

Throughout the text, we have been striving to make it clear how design and innovations can be considered in the online environment. What, if any, can make these changes interesting, good. But also what are the problems or what to watch out for.

The use of Google Analytics data in education is a relatively small amount of text – *Using Google Analytics to Improve the Course Website of a Database Course* (Romanowski & Konak, 2016) and *Using Google Analytics to Learn Online Learning: A case study of a graduate-level online course* (Luo, Rocco & Schaad, 2015), who are trying to show with varying care what is the difference between the classical concept of Learning analytics, for example in terms of Siemens (2012, 2013), and what data Analytics. We believe that analyzing the possibility of using such a pedagogical approach is one of the key challenges – both in terms of methodology and research, as well as inherent innovations of courses, because appropriately chosen and interpreted data enables students to better understand the online environment and content in a certain way optimize. We would also like to research the Google Analytics link with other tools such as Hotjar, which can offer an even deeper insight into the study behavior of individuals and the entire population.

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Blended learning as efficient method of language acquisition

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Abstract: Economic and social changes within the European Union provide new opportunities and challenges. Nowadays young people need to gain a wider scope of skills including language knowledge and intercultural abilities to succeed in the globalized economies and increasingly diversified societies. The acquisition of the necessary knowledge and skills is more effective in the school environment where the innovative approach and creativity are supported. The paper focuses on the authors' experience of the use of ICT as the support of Brno University of Defence students' self-study to achieve the required language level. It could seem easy for the students to pass the exam corresponding to B1 level according to the Common European Framework of Reference in four language skills, but the contrary is true. In relation to the student's entrance language level and the relatively small amount of lessons, it was necessary to search for the appropriate way how to motivate students and provide them with study materials which regarding to their content and structure can efficiently contribute to this task's accomplishment. The authors decided to use the blended learning method, i.e. the combination of the face-to-face teaching with the electronic study supports. The course designers concentrated primarily on creating materials aimed at practising receptive skills – reading and listening comprehension – which are the prerequisite for passing the language exam. In addition, the activities were supplemented with the set of tests and links to suitable sources for improving the remaining two productive skills. The paper describes the research oriented at getting the feedback from the course users, their incentives and comments as well. The research method was the questionnaire survey in which 135 course participants took part. The participants responded to the study supports, the electronic environment, and the course design mostly positively. However, there occurred several critical remarks as well. The results of the research will be implemented not only into lessons, but they will become the essential component of the further research in this area.

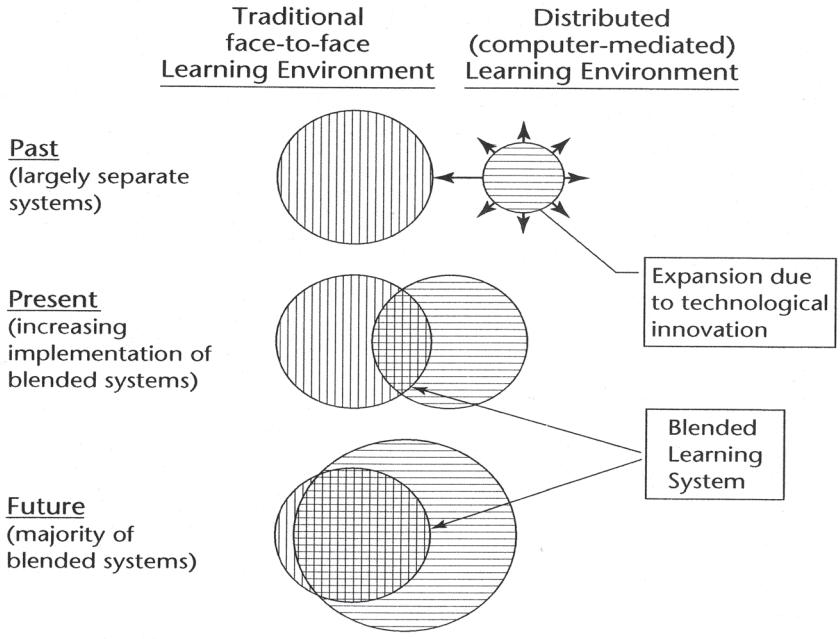
Introduction: blended learning

Blended learning implementation in tertiary education has dramatically increased over the last decade. Blended learning is a part of an ongoing convergence of two archetypal learning environments (Graham, 2006). On the one hand, there is the traditional face-to-face environment, on the other hand, there is distance environment supported by digital technologies. Kahn and Linquist claim: "Blended learning is a fairly new term but the concept has existed for decades in distance education" (Kahn and Linguist 2002). According to Graham, in the past, traditional

face-to face learning typically occurred in a teacher-directed environment with person-to-person interaction in a live synchronous, high-fidelity environment. Distance learning (blended learning) systems emphasized self-paced learning and learning materials interactions that typically occurred in an asynchronous, low-fidelity (text only) environment (Graham, Bonk 2006, 5).

Future implementation of distance/blended systems means a balanced combination of face-to-face and distance environments, synchronous and asynchronous learning (Figure1).

Figure 1: Progressive convergence of traditional and distance environments allowing development of blended systems



Source: Graham, Bonk 2006

According to Education Elements (2013), which develops blended learning technologies, successful blended learning occurs when technology and teaching inform each other: material becomes dynamic when it reaches students of varying learning styles. In other words, blended classrooms can reach and engage students in a truly customizable way. Optimally, blended learning combines online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiate instruction from student to student across a diverse group of learners (Cechova and Rees 2013). Today there is no doubt as to whether or not technology should be employed in the educational process. Former UK Prime Minister Tony Blair, in introducing the National Grid for Learning, said, "Children cannot be effective in tomorrow's world if they are trained in

yesterday's skills" (DfEE, 1997). If modern educators want to bring up and educate the new, young generation, and if they want them to succeed in the labour market, they must use technology to attract, motivate and involve students, and they must use interactive technologies to transform and improve the learning process (Cechova and Rees 2013, 2).

Garrison and Vaughan write that: "the key assumptions of a blended learning design are:

- Thoughtfully integrating face-to face and online learning;
- Fundamentally rethinking the course design to optimize student engagement;
- Restructuring and replacing traditional class contact hours" (Garrison and Vaughan 2008, 5).

According to Banados blended learning strategies consist of the following elements: face-to-face English, learners' independent work, online monitoring, and conversation classes with a native speaker. (Banados 2006).

Blended strategies in English language teaching

The term blended learning originated in the business world in connection with corporate training (Sharma and Barrett 2007), was then employed in higher education (MacDonald 2006) and then also immediately appeared in language teaching and learning.

Blended learning could be effective for achieving second language development if course developers follow basic pedagogical principles of learning and teaching and implement technologies wisely. The blended learning language course's strength is developing receptive skills (listening and reading comprehension); its weakness appeared to be in writing and speaking.

However, constant development of technologies enables a remarkable improvement in speaking and writing skills, in addition to important improvements in all the skills, especially in listening, pronunciation, vocabulary, and grammar. Charbonneau-Gowdy writes about web-conferencing technologies to enhance speaking skills (Cechova, Charbonneau-Gowdy 2008, 34), Sluneckova suggests using technologies like Wiki to persuade students to write and share their writing (Sluneckova 2011, 6; Cechova and Rees 2013, 4). Cerna writes about social software implementation in the teaching and learning process and emphasizes its contribution in all language skills (Cerna, 2014).

A number of studies investigate learners' attitudes towards blended learning. Leakey and Ranchoux found that "the students in large measure found the blended CALL experience a positive and motivating one and tended towards preferring [this approach] to the traditional classroom based learning" (Leakey and Ranchoux 2006, 367).

Banados's strategies were implemented in a course of English for academic staff at the University of Defense (UoD) as the course developers wanted to distribute proportionally face-to-face lessons and self-study to balance the self-study with the amount of time spent in the classroom.

The English course was divided in the following way:

- face to face lessons 40 %;
- conversation with a native speaker 10 %;
- learners independent work 40 %;
- e-testing 10 % (Cechova et al. 2015, 4).

When the UoD language teachers were tasked to tailor an e-learning course to provide UoD students as well as the professionals of the Army of the Czech Republic (ACR) with a chance to practice receptive skills and to pass their mandatory military exams (STANG 6001) they implemented all above mentioned experience to meet the ACR and UoD requirements.

Designing the course

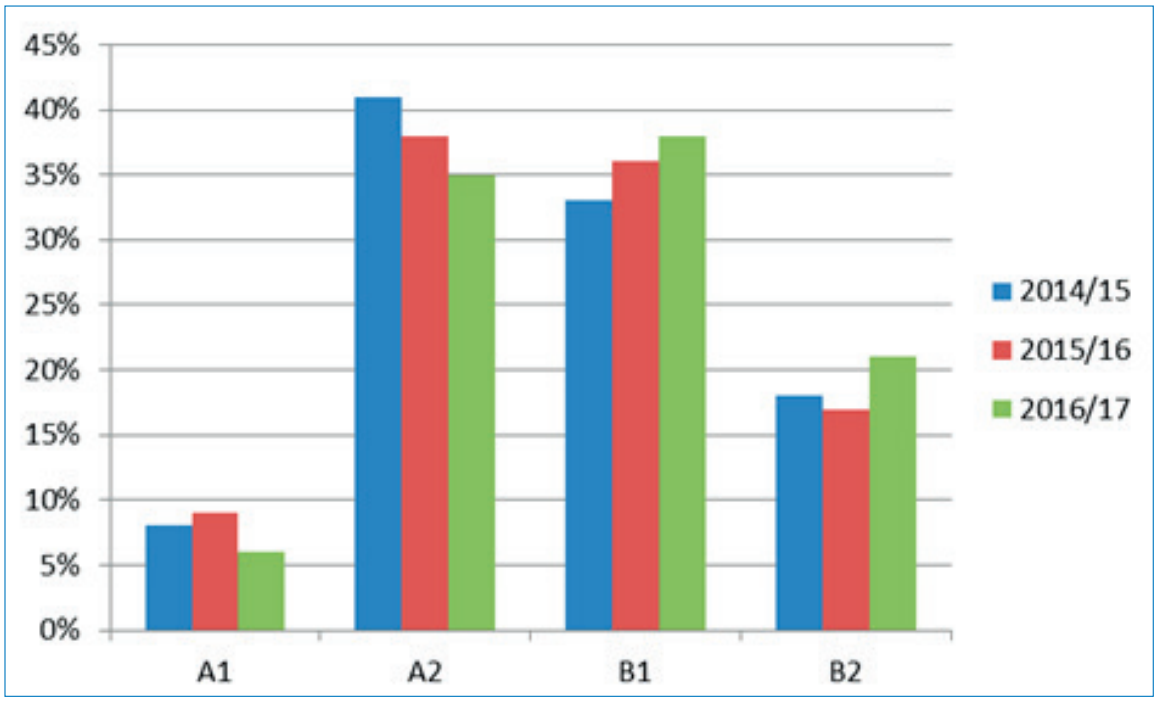
The University of Defence is a tertiary education institution which educates and trains future military professionals the ACR. As the Czech Republic is the member country of the NATO, it is essential for the graduates to be educated not only in their specializations, but also to acquire the appropriate language skills, since English has become the NATO operational language. Within NATO armies the language proficiency of soldiers is compared by the NATO STANAG 6001 exam in levels SLP1 – 4 (SLP stands for Standardized Language Profile) which corresponds to the levels A1 – C2 according to the CEFR (Common European Framework of Reference). This test is not of an "achievement" type, which means that it is not based on the accomplishment of the certain amount of studied materials, grammar, and vocabulary. On the contrary, as the proficiency test, it requires a general ability to use language fluently and independently in basic everyday situations, to prove their proper knowledge and communicative skills.

The Ministry of Defence language level requirements reflect on the university study. Since the academic year 2014/15, future military professionals have been educated according to the new full-time five-year Master's degree study programme which prescribes for all undergraduates the obligation to pass NATO STANAG 6001 exam SLP2 in English in all four language skills (listening, speaking, reading, and writing), corresponding to B1 level according to the CEFR, within first five terms. If students fail the exam in one or two skills, they can resit this part of the exam within three months. If they fail more skills, they then have to sit the whole exam again. It would seem that UoD students have good prospects for passing the prescribed SLP level thanks to their previous years of English studies, but the contrary is actually true. The entry level of students is greatly varied. The usage of information technologies and blended learning strategies is one of the possibilities of how to fulfil the Ministry of Defence language level requirements.

At the beginning of the first term students undergo an entry test, the aim of which is to determine their level of English and divide them into appropriate study groups for English lessons. Within

the three academic years we have registered a rising level of entry knowledge, which is positive. Nevertheless, this fact is not always the guarantee of successful fulfilment of this exam in all four skills.

Graph 1: Entry students'English levels (CEFR)



Source: Own

UoD students attend one 90-minute lesson once a week within five terms, which makes 149 teaching units (45-minute ones) including an intensive language course at the end of the fourth term. However, this total amount of lessons does not correspond to 450 lessons prescribed by CEFR for the transition from A2 to B1 levels for all students. Achieving the proficiency level B1 causes problems for more than half of the accepted students. Students with a higher entry level than B1 can sit the NATO STANAG 6001 SLP3 exam.

The face-to-face teaching enables students to level their knowledge, therefore it is based on general English commercial textbooks available in our book market. Teachers focus on those skills with which students have difficulties while mastering, and these are mainly productive skills (speaking and writing) according to the STANAG 6001 SLP2 requirements. During their self-study students should acquire and practise the receptive skills, and so each teacher provides students with proper study materials, both in paper form and in the form of electronic links to available websites. Furthermore, students can use study materials on the UoD Intranet, like the course "STANAG SLP2 Practice", where numerous texts from commercial sources are published.

Electronic course APA

With respect to quite a large number of students who did not achieve B1 level at the entry test, in 2015/16 teachers of the Language Centre of the UoD decided to design a compact electronic course which would help students pass the exam in two receptive skills (reading and listening) and enable them to continue with the practice for two remaining productive skills (speaking and writing). The course, which was launched in September 2016, contains authentic materials processed by the teachers and is supplied with practical exercises.

The course authors are experienced in designing online courses for combined study programme students, where the situation is even more complicated. These students have minimum face-to-face lessons and most of their study for exams is based on their self-study. Thus, the use of electronic supports can help them to orientate in the topics of individual study modules which they have to master in order to pass the final university exam. Therefore these materials are focused on specific terminology, not on general English.

The course called APA (an acronym meaning English for the Military) is published in LMS MOODLE, which was chosen as the suitable e-learning environment because it is most widely used at Czech secondary schools and universities, and it offered us an extensive choice of interactive exercises which form the core of the e-learning course. Another advantage is that Moodle is currently used at UoD as well as at Military Secondary School and College, so all military students are already familiar with it. Apart from the interactive exercises, there are presented non-interactive study materials and additional sources.

Study materials are sorted according to topics the mastering of which is required for passing STANAG 6001 SLP2. The topics are as follows:

1. Family and Relationships
2. Job and Career
3. Housing and Accommodation
4. Travelling
5. Shopping and Services
6. Leisure Time
7. Environment
8. Health
9. Food
10. Society
11. Media
12. Basic Military English.

Each topic is divided into two lessons regarding the difficulty and contains interactive exercises for practising vocabulary and reading comprehension at levels B1 to B2 in order to offer the better students the study material as well. The exercises are incorporated in the format of QUIZ which enables the users to get feedback, their evaluation, and record-keeping. Essentially, we used the following types of interactive activities – multiple choice, close, true/false, drag and drop, and short answers boxes. When students finish the quiz, they submit it and their results in percentages are displayed. They have a chance to overlook their solutions and to compare it with the correct ones. The number of attempts is not limited and the best quiz scores are recorded. The also course includes some non-interactive exercises, where the course participants can react to the set tasks (answering questions, expressing their opinion, forming questions and comments to the texts) which are discussed in the face-to-face lessons. Each topic includes two further lessons with tests to practice listening and reading comprehension. These tests correspond in their form to the tests at STANAG 6001 SLP2 exam, which can contribute to students' better prospects for passing. The time allocated for each lesson is approximately 45 minutes.

The structure of every topic is as follows:

- Lesson 1: Texts and activities to the topic.
- Lesson 2: Listening comprehension test.
- Lesson 3: Texts and activities to the topic.
- Lesson 4: Reading and listening comprehension test.

The course is supplemented with the manual/instructions to facilitate the study for students. Further, the course contains Forum, where students can discuss the topics, express their opinions and inquires, and also react to the other students' opinions. In the appendix there are additional materials including the grammar and vocabulary related to the topics.

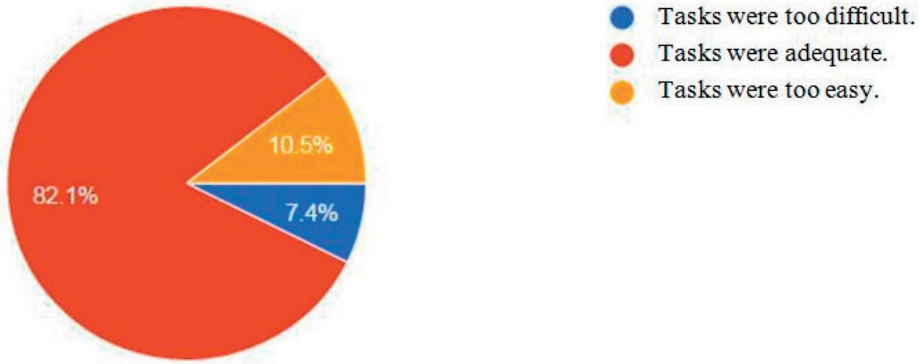
Students were offered this course as an optional source of practical activities for STANAG 6001 SLP2 exam and the frequency and length of their study depended on their responsible approach to their self-study. Also the choice of individual topics was up to them and the suggested pace was to submit one topic a month. The course was given as an obligatory part of the English self-study for those students whose entry knowledge was at levels A2 or lower.

Feedback

Students of the first and second grades of the full-time five-year Master's degree study programme were asked to express their opinions on the course APA with focus on the level of presented materials, the time spent on individual lessons, and the format of exercises. 263 students were provided with an electronic questionnaire which contained 12 items. The information was gathered from 182 of respondents (69 %).

The appropriateness of materials was compared to the entry language levels of our students according to STANAG 6001 levels. We found out that this course seems suitable for more than 82 % of students as a tool for their language skills improvement to meet the SLP2 requirements. They appreciate the fact that the tasks are challenging, but not excessively demanding or incomprehensible (Graph 2).

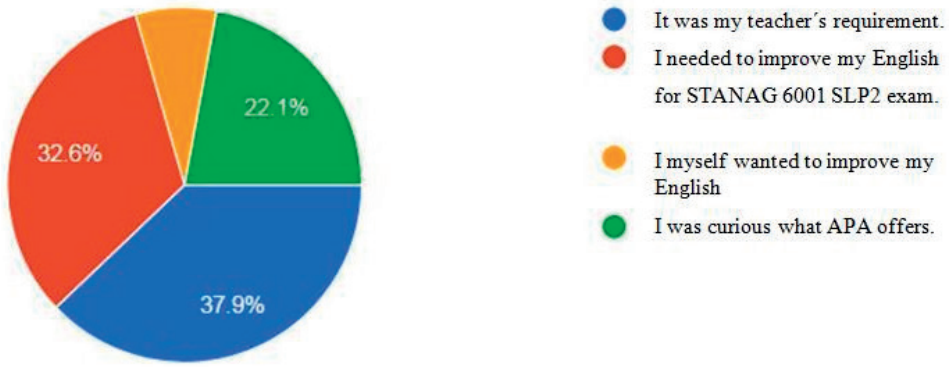
Graph 2: Difficulty of tasks



Source: Own

Next we surveyed the students' motivation for the APA course usage (Graph 3). Approximately the same number of students worked in the course on their teachers' requirements and according to their own need to improve their skills before the exam. We were pleased that there were students who had already passed STANAG 6001 SLP2 exam who welcomed the course for revision and practice in order not to lose gained language skills (7.5 %). Quite a large number of students approached the course only out of curiosity (22.6 %).

Graph 3: Reasons for using APA course



Source: Own

The students who approached the course out of curiosity stated that they did not use the APA course for the following reasons: they preferred other sources like reading authentic materials, watching films in original language with subtitles etc. (56.8 %), their teacher did not require using the course (20.7 %), the form of e-learning did not suit them (20.7 %). Some of the respondents state that they did not use the APA course because they were too busy (24.2 %). (See Table 1)

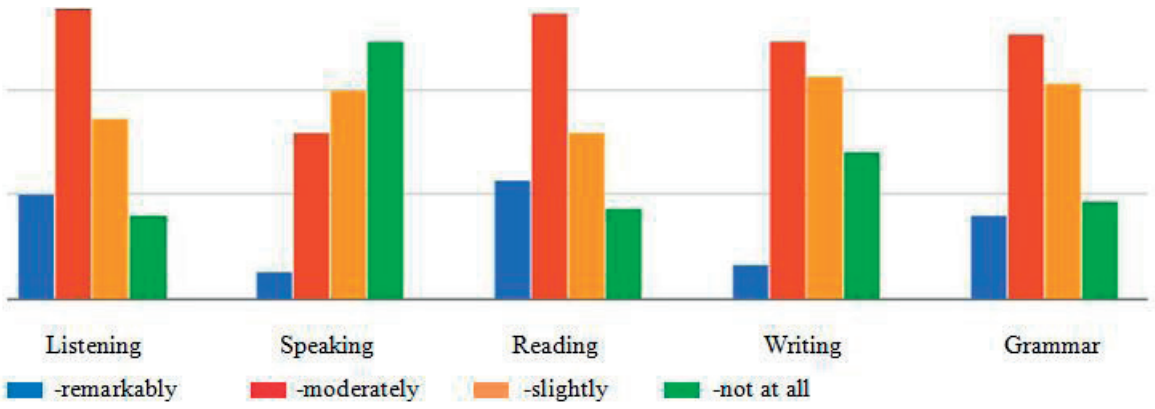
Table 1: Reasons for low number of visits to APA course

If you studied at the course only several times (1x to 4x), mark the three most likely reasons for this fact.	
1. I use other possibilities for studying English.	56.8 %
2. I forgot about the APA course.	31.6 %
3. I am too busy to study the APA course.	24.2 %
4. My teacher does not make me study the APA course.	20.7 %
5. E-learning does not suit me.	20.7 %
6. The technical environment of Moodle puts me off.	13.7 %
7. I do not have an Internet access.	5.3 %

Source: own. Data from APA questionnaire.

The students of the full-time five-year Master's degree study programme do not have any problems in working with electronic study materials (83 % did not state any problems), which is contrary to the previous authors' experience with e-learning courses designed for the combined study programme students where only 55 % of respondents were satisfied with electronic environment (Berankova et al 2013, 13). The contemporary full-time students accept the blended-learning form positively. According to the questionnaire, the APA course helped to improve listening comprehension for 60 %, reading comprehension for 62 %, and grammar for 53 % of them (Graph 4). Although the course is not primarily focused on speaking and writing skills, students noticed their improvement in speaking (30 %) and writing (44 %).

Graph 4: Skills improvement



Source: Own

There were also several students' critical remarks. For example, they did not regard LMS MOODLE as the suitable online environment, and they suggested different, more advanced possibilities. However, we cannot take these suggestions into account because of the previously stated reasons for the choice. Some of the students criticized mistakes in several tasks which complicated their self-study. If these mistakes were reported, the authors were grateful for the students' cooperation and corrected them as quickly as possible. Students could report the comments to their teachers or comment in the Forum which is at the top of the course. The next remark dealt with the way the correctness of the exercises was displayed. Students had to go through the whole lesson, submit their answers, and only then they could go through the lesson again and see the correct answers. We reacted by the change of the exercises setting – students can see the correct answers immediately after submitting individual exercises.

Despite the fact that there appeared to be several critical remarks, overall the APA course was accepted positively. We can state that the course met the purpose it was designed for – to help students with improving and practising the receptive skills, reading and listening comprehension, to be able to pass the Ministry of Defence requirement for STANAG 6001 SLP2 exam.

Conclusion

The path from traditional to blended learning is not without its challenges and pitfalls. The aim of this paper and research was to share the challenges faced in blended programme at the University of Defence. Our focus was primarily on engagement and investment in sustained use of the APA course provided as the part of current English language courses. The research method, questionnaire, enabled us to address the APA users, to gather and process data from all respondents, albeit this part of research will be followed by the qualitative research (semi-structured interviews) to get information in depth.

From the gathered data it was concluded that the appropriateness of materials is adequate for the majority of students (82.1 %), which is positive. On the other hand, all critical remarks and recommendations have been implemented in the APA course and serve as a source of inspiration for the further work. Ayan states that implementation of Moodle is both motivating and autonomy building particularly in English language courses (Ayan, 2015, 6), however, only 32.6 % of the respondents used the APA course because they needed to improve their English for STANAG 60001 SLP2 exam, which is the mandatory exam for all military professionals. Some students did not regard LMS Moodle as a suitable online environment. According to the search for a suitable virtual learning environment for the Czech military, the DISTANCE Defence Research Project in 2007-2008 (Halberstat, Prenosil 2009), in which one of the co-authors participated, three independent studies suggested Moodle as the most suitable LMS for the ACR. Additionally, Stankova and Businova state that Moodle modules enable the educators to

build richly collaborative communities, to deliver the content to students, and assess students' performance (Stankova, Businova 2010, 147).

The authors consider the research as the beginning of a longer process to optimize language training at the UoD and to enhance the UoD students' successfulness in meeting the ACR requirements.

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The use of video recordings of microteaching in Czech language didactics lessons

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Abstract: Didactics of Czech as a mother tongue is a hands-on discipline with a direct relationship to actual practice as it explores real-life issues of language teaching and provides trainee teachers with inspiration and input relating to not only organization and planning of teaching sessions but also to methods, organizational forms and other aspects of the teaching process. Although it incorporates trainee teachers' classroom observation and teaching practice at partnership schools, the range of opportunities for practising teaching remains limited – from the viewpoints of both trainee teachers and didactics specialists. Video recordings of microteaching sessions in seminars on didactics of Czech as a mother tongue thus play an important role in the self-reflection of trainee teachers. This paper presents a qualitative analysis of the students' reflections with the use of such recordings in seminars, aimed at identifying its strong and weak points. The study, based on a review of questionnaires completed by the trainee teachers at the end of their semester, highlights the importance of an appropriate choice of the teaching situation, and proper preparation of trainee teachers for their microteaching sessions. The microeducation analysis reveals the merits and drawbacks of trainee teachers' microteaching sessions from the perspective of pedagogical content knowledge, and directs their attention to their strengths and weaknesses in both verbal and non-verbal communication. By examining the video recordings, trainee teachers can identify – more readily than in didactics textbooks – any instances where the didactic principle of linguistic approach has been breached. The author believes that involvement of trainee teachers is very important, both in assessing the quality of the microteaching sessions of their colleagues and in proposing and substantiating alterations to the teaching situation.

Introduction

Didactics of Czech as a mother tongue is a hands-on discipline with a direct relationship to actual practice as it explores real-life issues of didactic transformation of linguistic knowledge and provides trainee teachers with inspiration and input relating to not only organization and planning of teaching sessions but also methods, organizational forms and other aspects of the teaching process. On the curriculum offered by the Faculty of Education of the University of West Bohemia in Plzeň, it is not an isolated item because it is closely linked to other courses: Modern Methods of Czech Language Teaching, and Information and Communication Technologies in the Czech Language Subject. In all these courses, trainee teachers are guided to use reflection and self-reflection, focusing mainly on the effectiveness of particular teaching methods when applied to specific language features that the class is expected to master.

Our aim is to train the future teachers of Czech language to develop particular knowledge and skills which are unavailable to those untrained in teaching and those outside the teaching profession. In our understanding, this particular knowledge comprises the pedagogical content knowledge. *It is a category which represents the greatest difference between a teacher and a specialist, in terms of their view of the content of their disciplines* (Janík, 2009).

Pedagogical content knowledge stems from four sources: a) observation of instruction as a student or teacher, b) training in professional disciplines, c) training in specific disciplines during teacher training and d) own teaching experience (Grossman, 1990).

In seminars on didactics of Czech language, we aim to develop trainee teachers' pedagogical content knowledge and teach them how to transform their content knowledge to match the students' level of understanding.

These seminars are closely linked to the trainees' final teaching practice – but trainee teachers still see the number of opportunities for self-reflection on their own teaching practice as inadequate. For these reasons, we have introduced microteaching into these seminars. Analyses of microlessons enable trainee teachers to cultivate their ability to review their own performance and demonstrate their approach. Microteaching also facilitates their collaboration. We see this as a significant element, as the "collective" aspect of the teaching profession has been gaining importance, with its emphasis on effective communication.

Microteaching in didactics of Czech language strengthens the constructivist character of this discipline. Trainee teachers approach the topics from **multiple perspectives**: using primary sources, electronic materials from the on-line course, video recordings of lessons delivered by experienced teachers, examples of teaching materials and materials for analysis, their own activities in the seminars, discussions with the supervisor, consultations, microlessons of their colleagues and their own, and their experience from the final teaching practice.

In the present paper, we analysed end-semester questionnaires completed by trainee teachers in the course of didactics of Czech as a mother tongue who were training to become secondary school teachers. Since the number of questionnaires returned was 26, the quantitative findings are not statistically significant. Nevertheless, the trainee teachers' responses to open questions help shed light on the strengths and weaknesses, and on the risks and opportunities for improvement. The questionnaire was designed to explore the effectiveness of constructivist features in didactics when microteaching and analysis of video recordings of microlessons are used. This paper highlights specific aspects of the constructivist instruction (Murphy, 1997) in bold print.

Functions of microteaching

The first mentions of microteaching in Czech publications date back to the 1970 s (Mareš, 1976), and then re-emerge in the second half of the 1990 s (Spilková, 1995; Svatoš, 1997). The authors of microteaching have defined it as controlled practice which enables focusing on

specific elements of teaching and practising those under controlled conditions (Allen & Eve, 1968). Microteaching comprises the planning, delivery of and reflection on a reduced-scale instruction session for a group of fellow trainee teachers. The length of such a microlesson and the number of students in the microclass may vary. The microlesson often takes between 10 and 20 minutes, involving 10 to 30 students (Bakir, 2014). In our seminar, the trainee teachers were invited to prepare microlessons of 15–20 minutes. In reality, the shortest one took 15 minutes and 51 seconds, whereas the longest one was 28 minutes and 20 seconds. In one instance, the trainee teachers failed to adhere to the agreed scope, delivering a microlesson which comprised the entire lesson: 43 minutes and 43 seconds. This proved highly undesirable with respect to the intended objectives.

The key elements of microteaching include translation of theory into practice in the form of the trainee teachers' own teaching activity, giving and receiving feedback, and self-reflection. The supervisor's role is to provide a safe and supporting environment to help the trainee teachers learn from one another (Fernández & Robinson, 2006).

"Self-reflection involves subjective generalization of knowledge about oneself, upon considering one's own activity and personality in relation to conducting the teaching process" (Kolář, 2012). The trainee teacher gets an opportunity for self-evaluation in relation to his or her performance in a teaching situation, and can make decisions on what to change. In addition, the trainee teacher receives feedback from his or her colleagues and the supervisor. The key part of self-reflection is deriving conclusions and making decisions on teaching strategies.

Self-reflection upon microlessons fulfils cognitive, feedback, development, preventive and relaxation roles. The cognitive role means that the trainee teacher becomes aware of problems and their potential solutions, his or her own response to particular teaching situations, and feelings towards him or herself, as well as towards the students. The microlessons fulfil the feedback role in that the trainee teacher becomes aware of his or her teaching interventions and the students' reactions. Development of the trainee teacher's teaching skills is another outcome of microteaching. The aspect of prevention is entailed in the trainee teachers' learning from their own experience. Relaxation results from positive feedback given to the trainee teacher who thus gains satisfaction and enjoys the experience.

Organization of microlessons

In the introductory seminar, the functions of microteaching, the organization and evaluation criteria were presented to the trainee teachers. One of the important aspects of constructivist teaching is **collaborative and cooperative learning** which exposes trainee teachers to different opinions and perspectives (**alternative viewpoints**). In view of this, we opted for trainee teachers working in pairs because the recent teaching practice also involves teaching in tandem.

Knowledge construction is based on the trainee teacher's individual experience and takes place during discussions in pairs (**knowledge collaboration**). Trainee teachers' answers to the question whether they were comfortable with conducting microlessons in pairs were 84.6 % 'yes' and 15.4 % 'generally yes'. In their explanations, the trainee teachers confirmed that this reduced their anxiety and uneasiness which could arise from the fact of being videotaped, as well as from the anticipated evaluation. *"During the microlesson, I was less nervous than if I were on my own."* As the number of trainee teachers in the class was odd, one of the groups comprised three trainee teachers. In their view, this was not an optimal arrangement. *"Our group had three members and our collaboration went well but I would certainly prefer working in a group no larger than two."* The reason they gave was that reaching consensus on a topic and a certain didactic solution was more difficult and lengthy in a group of three. *"Each of us defended her own proposal."*

The trainee teachers gave the same answers to the question whether their collaboration in pairs (groups) while preparing the microlesson had been effective (84.6 % 'yes', 15.4 % 'generally yes'). *"Each of us contributed with their own ideas; the microlesson was therefore prepared sooner and, more importantly, it was of better quality than if I had done it on my own." "We were able to consult things, recommend publications etc.; as they say: two heads are better than one."*

This also proved the effectiveness of letting trainee teachers choose their partners. Experience of earlier collaboration was a great advantage. *"Having Jakub as my partner made the assignment an absolute dream. We had been classmates in drama education where we had learned to cooperate; and now we benefited greatly from that. Specifically, it helped us come up with the activities for our microlesson. I mean all activities."*

The seminars comprise thematic units covering the language component of the Czech language subject. Each pair of trainee teachers chose one thematic unit and one topic from this unit for their microlesson (subjects relating to word meanings, word formation and structure, syntax, morphology, orthography, and general instruction on language).

In the literature on microteaching, we tend to encounter an approach where the trainee teachers in introductory seminars draw lots for the method and the lesson stage (motivation, exposure and fixation) to be used in their microlessons (Bajtoš, Orosová, 2011). It is beneficial in the breadth of methods which the trainee teachers encounter during the seminar. In our opinion, it is suitable for seminars on pedagogy or general didactics. Because our seminar on didactics of Czech as a mother tongue focuses on didactic transformation of linguistic knowledge, trainee teachers do not draw lots when choosing methods. After the trainee teachers selected their thematic units, there would be a risk that the method chosen by lots be forcefully applied to a topic for which it is unsuitable or ineffective. We believe that the method must be chosen with respect to its function. Where identical methods were chosen over and over in the microlessons, we pointed out alternatives during the follow-up analysis.

76.9 % of trainee teachers answered 'yes' and 23.1 % of trainee teachers answered 'generally yes' to the following question: "Were you satisfied with having the choice of the teaching situation for your microlesson within the assigned thematic unit?"

"Everyone was able to choose the topic they found suitable. As for myself, I work best on what I enjoy." "We practised exactly what we wanted to."

"We had the option of choosing a teaching method first, and then identifying a language feature within the thematic unit for which it was suitable."

The answers were an indication of **student-directed goals**. The trainee teachers decided what to focus on and what they wanted to learn or practise during their microlesson.

They were informed about the date of their microlesson and about the classroom equipment. Available to them was the SMART Board interactive whiteboard and the SMART Notebook application which they had learned to use in the ICT discipline for the Czech language subject in the previous semester.

The position of the camera which captured the microlessons was given by the available space. The classroom where the seminars on didactics of Czech as a mother tongue took place had the advantage of desks being arranged parallel to the longer wall. The camera was positioned between the wall with the whiteboard and the side wall. If we had a wider lens and the trainee teachers' chairs had been arranged appropriately, no operator would have been required and a static camera could have been used. The optimal configuration might seem to involve two cameras for capturing the microlessons: the classroom camera pointed at the trainee teachers in the role of students and the teacher camera recording the trainee teachers in the role of teachers (Janík, Miková, 2006). It would, however, place demands on equipment, subsequent processing of the recording, and the staff. Even more importantly, it could put stress on the microteachers. Recording the microlessons without lapel microphones for trainee teachers and without surround microphones or a directional microphone proved useful. The reason was that one of the aspects of our microlesson analysis involves the use of voice. The recordings revealed differences in speech intelligibility, and provided feedback for further development of vocal skills.

The video recordings were done in a single take. Therefore, they also captured those parts of microlessons in which the trainee teachers in the role of students worked on their own and the microteachers walked among them and corrected or helped them with their activities.

Links to the recordings were available to the trainee teachers within three days via the Moodle LMS. They could access them in the course on didactics of Czech as a mother tongue which they could also use for preparing their microlessons.

It offered seven chapters which identified critical issues in individual thematic units of the Czech language subject, explaining why these were difficult for students, and presenting examples, demonstrations, analogies and flash animations which were most effective for clarification. The

course also provided links to video recordings of Czech language lessons made under the Virtual Classroom Observation project. By combining the materials in on-line courses, field observations and final teaching practice, didactic theory and practice can be brought together.

Trainee teachers' answers in the questionnaires showed that they were aware of the importance of video recording to their self-reflection and feedback but they also indicated it as the single most stressing factor.

The responses to the question whether making video recordings of the microlessons was meaningful involved 57.7 % of 'yes' answers, 34.6 % of 'generally yes' answers, 3.9 % of 'not really' answers and 7.7 % of 'no' answers.

Those who answered 'yes' gave the following reasons: *"It is the most effective feedback one can get. It even shows things that one can easily overlook during the lesson."* "*Although I do not like watching video recordings of myself, I consider them very effective – for the simple reason that they enable us see ourselves through the eyes of others, the learners, and show us the mistakes we do not notice while teaching."* "*Mainly for self-reflection. When speaking, one is not aware of so many things – and the video can provide a perfect feedback."* Those who answered 'generally yes', gave the following reasons: *"One can notice mistakes that one was not aware of. It just seems to me that the camera made some people nervous and their teaching performance was different from the performance that they would have delivered without being video-recorded."*

The trainee teacher who answered 'not really' argued that the stress was excessive. *"Trainee teachers with a panic fear from speaking in front of a camera might collapse."* Even she, however, admitted the benefits of video recording in her response to an open question: *"On the other hand, without the video, we would hardly become aware of our weak points."*

The only trainee teacher who gave the answer 'no' had the following explanation: *"In my opinion, the video recordings as a tool for self-reflection would be more effective and, in particular, more objective if made during actual teaching practice. Microlessons could do with a follow-up feedback without the use of video."* However, this suggestion is very difficult to implement because obtaining a consent to recording the instruction in primary and secondary schools on video is virtually impossible.

Although these teaching situations are not real-life situations, they still provide trainee teachers with opportunities for **exploration**, which is the most effective way to acquire knowledge independently.

Microteaching analysis

Microteaching analysis did not take place immediately after the microlesson. If it did, it would be somewhat intuitive and superficial, without reflecting the teaching situation in depth. By contrast, we placed stress on **problem solving**, higher-order thinking and profound understanding of the subject.

Trainee teachers and the didactics supervisor had the time until the next seminar to assess the microlesson from various angles, conduct an in-depth analysis and suggest improvement with respect to the topic, if needed. An analysis of the video-recorded microlesson provides facts instead of mere impressions, opinions or reflections of attitudes. It enables the trainee teachers to contrast their view of themselves with their actual teaching performance. Trainee teachers take into account their pre-existing knowledge, conceptions and views (**previous knowledge constructions**).

This leads to a thorough **reflection on the learning process** and the **trainee teachers' self-regulation** (**metacognition**).

Trainee teachers thus become **the main agents of the appropriate delivery of didactics of Czech as a mother tongue** (**learner control**).

The **supervisor** acts as a **guide, coach, tutor and facilitator** (**teacher as a coach**). Trainee teachers are guided to **active knowledge construction**, instead of mere reproduction. The supervisor continuously provides support and motivation to the trainee teachers to push the boundaries of their existing knowledge and skills (**scaffolding**).

The assessment of learning performance is not separate from the learning process. Trainee teachers are evaluated on a continuous basis (**authentic assessment**).

We make trainee teachers work out answers to the following questions: *"What have I been doing, how and why, with what intentions and expectations, what were my results, where were critical spots and why, and what were alternative ways of doing it?"* (Mazáčová, 2008)

Mistakes are seen as opportunities for getting an insight into pre-existing knowledge of the trainee teacher. Mistakes become a material to be worked on (**consideration of errors**). One of the trainee teachers made a good point in her questionnaire: *"Many colleagues are worried before such lesson and are afraid of making a mistake. However, there is nothing wrong about making a mistake during one's microlesson. Where else can one afford mistakes than on such an occasion?"*

We used the following criteria for microteaching analysis:

- specialist knowledge correctness criterion,
- psychodidactic criterion,
- communication criterion,
- control/organizational criterion.

In our seminar, we tried various forms of feedback on microteaching based on the criteria.

The questionnaire included the following question:

Which form of self-reflection and feedback on a microlesson do you find most effective?

a) verbal self-reflection and feedback from colleagues and the supervisor, discussion
b) verbal self-reflection and feedback from the supervisor, written anonymous feedback from colleagues submitted on sheets of paper (and read by the supervisor),

c) written discussion in the Moodle LMS – microteachers' self-reflection, feedback from colleagues; the supervisor moderating the written discussion,
d) other…

46.15 % of teacher trainees chose option a), i.e. an open discussion during the seminar. One of the trainee teachers explained her choice. *"It is important to provide an environment in which participants are frank and are not afraid to give their opinion, particularly when it comes to expressing criticism of colleagues."* This answer, too, shows how important it is for the trainee teachers to be aware during the microteaching analysis that the point is not in criticizing colleagues but in seeking and finding solutions for "critical issues" with the help from the supervisor and all members of the trainee teacher group.

Many trainee teachers have difficulties to publicly express their opinion on negative aspects of a microlesson. This is why 53.8 % of the trainee teachers preferred written anonymous feedback on a sheet of paper read by the supervisor.

Besides these two forms of feedback, we use written feedback on the discussion forum in the Moodle LMS. It is an opportunity to express their opinion for those trainee teachers whose curriculum has been adapted because they already worked as teachers. We consider their views very important because they can share their real-life experience with their colleagues in the seminar. In terms of negative emotions which the written feedback may trigger in microteachers, this form of feedback poses the highest risk.

Specialist knowledge correctness criterion

Our basic premise was that the best way to embed specialist knowledge involves passing it on. Therefore, the questionnaire for the trainee teachers included the following question: Did your preparation of the microlesson help you better understand the language feature you taught? 23.1 % of the trainee teachers answered 'yes', 15.4% 'generally yes', 30.8 % 'not really', 15.4 % 'no' and 7.7 % 'don't know'. Our hypothesis of a majority of positive or mostly positive answers was thus disproved. One possible reason is that the trainee teachers have chosen topics with which they were thoroughly familiar. *"We picked a language feature which we knew relatively well. Still, afterwards I understood better some details of the subject."*

The three-member group had more difficulties achieving consensus about the topic of their microlesson. Despite that, one of the members stated a positive effect of their cooperation: *"I have always had difficulties with complement clauses but our preparation helped me understand them better because my colleagues were able to explain them."* Other students used expressions similar to "understand better", such as "refresh", "embed" and "clarify". *"Thanks to the microlesson, I was able to refresh and clarify my knowledge, such as the word formation and derivation." "I strove to present the feature exactly the same as way I would to actual students in the class. I studied the subject diligently which helped me*

improve my knowledge." "I would not say that the microlessons directly contributed to better understanding of the subject but they helped me get a clearer picture and think through the options of the didactic approach."

A greater number of positive answers were given to the question: "Did any of the microlessons or their follow-up analysis help you better understand the language feature in question?" These answers were: 30.8 % 'yes', 38.4 % 'generally yes', 23.1 % 'not really' and 7.7 % 'no'. One of the responses to the related open question which asked for examples to illustrate a positive answer was as follows: *"I would not pick a concrete example. All the microlessons helped me refresh the topics and offered new options for presenting them to students."* Some trainee teachers were perhaps reluctant to admit their lack of knowledge. Those who were able to do so, listed some complex syntactic features as more difficult topics. This was related to the microlesson on complement clauses. *"I probably should not admit this publicly but I was not thoroughly familiar with this subject, which is why I was excited about my colleagues' microlesson."*

One of the students reported that he had gained more understanding of a feature from the follow-up analysis and the explanation given by the supervisor than from the microlesson.

The microteaching analysis focuses on how the microteacher follows the didactic principle of linguistic approach. This principle requires accurate presentation and giving linguistically correct explanations of language features.

The principle can be breached by

- inaccurate explanation of language features,
- incomplete or inaccurate presentation of language features,
- incorrect use of terminology,
- using expressions or terms unfamiliar to the students.

All these inaccuracies were found in trainee teachers' microlessons.

Psychodidactic criterion

We examined how effective choices the trainee teacher makes in terms of methods and organizational forms and the ability he or she demonstrates in planning the motivation and activation of students. We asked the trainee teachers the following question: "Have your colleagues' microlessons and the feedback to them helped you evaluate any psychodidactic aspects? (E.g. the choice of methods, organizational forms, students' motivation and activation and others.)" 53.8 % of the trainee teachers answered 'yes', 30.8 % gave the answer 'generally yes', and 15.4 % responded 'don't know'.

Microlessons reveal how important it is for trainee teachers to consider motivation in their teaching situations. It is typical of students aged 15–19 that they enjoy new things and are unwilling to revisit those they had learned about earlier. This tends to be behind the secondary students' lack of interest in language lessons. Reviewing a subject at the same level as before is

seen by students – justifiably – as something trivial and not very useful, because they had heard about such topics in their final years at the primary school. We used microteaching analysis to jointly seek better solutions for teaching situations which lacked motivational elements.

"Several enjoyable methods that were used by my colleagues certainly inspired me, for instance the 'game with compound words'. I also learned from some of their mistakes (lack of motivation and activation in the students)."

"Students must be continuously involved or activated! Some microlessons started with a short theoretical introduction in the form of a dialogue with students and continued with exercises – which was great. On the other hand, there were microlessons which included long theoretical presentations (either in the opening or at the end) without engaging the students – and that is bad! Students should be active agents of the instruction."

"I realized how well the class can work when students enjoy the activity."

"The video recording from 17th March made me aware of the pitfalls of group work and student motivation in various contests."

It emerged that trainee teachers can critically evaluate methods on the basis of their effective use, rather than classifying them as modern or traditional ones:

"I often hear that the lecture is an anachronism but I categorically reject such opinions. Obviously, the instruction should not consist of a teacher monologue but an explanation by the teacher is essential for students to understand new subjects and I believe that my colleagues succeeded in keeping their 'students' interested at this stage."

We also pay attention to the appropriate use of instruction methods for the goal set by the trainee teacher for the students. For instance, if the trainee teacher uses deduction as the fundamental logical reasoning process (a sequence of steps starting from a definition of a general concept), our microteaching analysis will involve comparison with inductive reasoning (starting from concrete language materials and deriving a general principle or definition) and help trainee teachers identify the advantages of the inductive process.

We asked the trainee teachers the following question: "Has follow-up feedback or self-reflection on your own microlesson helped you identify critical points and consider why and how 'it could have been done in a different way'?" 30.8 % of the trainee teachers answered 'yes', 23.1 % gave the answer 'generally yes', and 46.1 % responded 'don't know'. We attribute this to some trainee teachers' reluctance to point out their 'weak spots' in their answer. Nevertheless, we also encountered excessive self-criticism. A student from the three-strong group wrote: *"It seems to me that our whole microlesson was critical – inaccurate theoretical knowledge, poor illustration of features, sometimes even wrong examples."* We find the opinion of another trainee teacher from this group very positive: *"Above all, I have realized I should not worry too much about everything. Everyone can make a mistake and we are only humans."*

Communication criterion

We analyse the verbal component of communication, the vocal component (the voice tone and modulation), as well as the non-verbal component. We direct trainee teachers' attention to the most frequent mistakes in the wording of questions, their accuracy, intelligibility, linguistic correctness, and their sequence in the dialogue, following the logic of the language feature taught. As former primary and secondary school students, the trainee teachers had often encountered an authoritative and non-interactive approach (lectures with prevailing monologue) or an authoritative interactive approach (with the teacher asking mostly closed questions and with short answers from the students). In their microlessons, they should learn to ask open questions which stimulate students' thinking and invite them to express their own opinions. They should also adopt appropriate responses to the students' answers. The answers should not be evaluated exclusively on the basis of correctness. They should become the source for formulating follow-up questions. We should move from the dialogue (teacher – student) toward the polylogue where multiple speakers respond to one another. In their microlessons, the trainee teachers also practise the use of proper Czech as the natural code for teaching the Czech language. They also identify filler words in their speech.

We asked the following question: "Has the video recording of your microlesson helped you evaluate your verbal communication?" 46.1 % of trainee teachers answered 'yes', 23.1 % gave the answer 'generally yes', and 30.8 % responded 'don't know'.

In their use of voice, some trainee teachers relied on their experience from the courses of the Drama Education curriculum. This was an example of interrelationship between subjects **(conceptual interrelatedness).** *"I have completed the course Speech Education. The aim was to learn to master one's breath which is a prerequisite for correct phrasing. Thanks to this course, a film is projected on the background in my head with every speech (where I picture exactly what I am saying). This process taught me not to "lose the thread" and also to speak more slowly (I need to first project, then realize and then say what I want to express)."*

Trainee teachers should also learn that non-verbal communication can be used to improve students' relationship to the teacher as well as to the subject and even make students keen to learn more about the topic. Microteaching analysis shows that the desired open atmosphere can be facilitated by voice dynamics and diversity, the pace of speech, smiling, leaning toward the student, maintaining eye contact, using gestures and relaxed posture and appropriate proxemic behaviour and movements.

Non-verbal communication was addressed in the following question: "Has the video recording of your microlesson helped you evaluate your non-verbal communication?" 19.2 % of the trainee teachers answered 'yes', 11.5 % gave the answer 'generally yes', 7.7 % responded by 'no', and 61.5 % gave the answer 'don't know'. Answers to the question about what trainee teachers noted in

the analysis of their non-verbal behaviour rarely involved negative self-reflection: *"I would say that my gestures were appropriate, although I sometimes come across forced and stilted."* Despite the high percentage of 'don't know' answers to this question, the responses to the last question on the questionnaire which explored whether the trainee teachers used any of their findings from self-reflection in their final teaching practice, many respondents mentioned examples of non-verbal behaviour. *"I tend to put hands in my pockets and lean on the teacher's desk while teaching. I am aware of these deficiencies and strive to minimize them."*

Control/organizational criterion

We monitor how well the trainee teacher handles the organization of student activities during the lesson. Although the microteaching situations are somewhat artificial and not authentic, trainee teachers in the role of students sometimes create unusual teaching situations to which the microteacher must respond. We analyse them and the trainee teachers assess the microteacher's handling of such situations. We take note of how the trainee teacher responds to these situations and how well he or she creates positive atmosphere, guides student group activities, how he or she works in tandem etc.

We asked the trainee teachers whether self-reflection on their microlesson helped them become aware of any issues relating to lesson organization. (Organizing the group work, working in pairs, contests, language games, creative drama, writing on the board, and others.)

30.8 % of the trainee teachers answered 'yes', 26.9 % gave the answer 'generally yes', 7.7 % responded by 'no', and 34.6 % gave the answer 'don't know'.

They listed the following examples: *"It is better to first assign a task and only after that hand out the materials. This way one avoids the noise and loss of concentration among students."*

"Results of contests must not be announced before the task has been completed by all students."

"During my microlesson but also in my final teaching practice I began to find that writing information on the board (when presenting a new subject) is in fact a waste of time. I believe that nowadays a PowerPoint presentation is a better choice for presenting the subject to students. The teacher can show bullet points one by one, while activating the students."

Related to the above question is the following one: Have your colleagues' microlessons and the feedback to them helped you become aware of any problems related to the lesson organization? 34.6 % of trainee teachers answered 'yes', 26.9 % gave the answer 'generally yes', 11.5 % responded by 'not really', and 26.9 % gave the answer 'don't know'. They mentioned the following examples: *"When students are working in small groups, it helps to walk among them to make sure they understand all that is required." "Pair work appears more effective to me than small-group work. The more people are assigned to a task, the fewer actually work on it – or, conversely, everyone gets involved, supporting a solution and opinion of their own." "In one microlesson, the colleagues awarded points for correct answers – but not in*

every question. As a result, there were students who answered many times but received no points; and when a question with some point value came up, they gave a wrong answer and ended up without a point again. The problem was that it was not clear beforehand which question has a point value and which has none. Obviously, this motivates students to respond to all questions but in the end, this evaluation scheme is unfair."

Evaluation of microlessons in didactics of Czech as a mother tongue

Responses to the question whether the use of microteaching in didactics of Czech as a mother tongue is meaningful included 73.1 % 'yes', 23.1 % 'generally yes' and 3.8 % 'not really' answers.

The only student who gave the answer 'not really' objected mainly to the video which she found very stressful. At the same time, however, she answered 'yes' to the question whether the video recording helped her evaluate her verbal communication; and she identified microlessons as beneficial in five other aspects.

In their questionnaires, the trainee teachers identified the strongest point of the microlessons as the perfect feedback they received from their colleagues and the supervisor after the video recordings analysis, as well as their own self-reflection. They valued the fact that they could test the didactic effectiveness of the approach they had chosen. They also praised the opportunity to try and experience the teacher role before people they knew well. They reported that this helped them get over their stage fright and gain confidence, referring to the microteaching experience as a small test before their final teaching practice.

One very satisfying finding is that most trainee teachers have truly made use of their microteaching experience in their final teaching practice. We asked the trainee teachers the following question: Have you used in your final teaching practice any piece of knowledge gained by self-reflection or from feedback on your or someone else's microlesson? 38.5 % of trainee teachers answered 'yes', 34.6 % gave the answer 'generally yes', 7.7 % responded by 'no', and 19.2 % gave the answer 'don't know'.

The examples they gave included psychodidactic, organizational as well as communication aspects.

"The microteaching experience improved mainly the way I assign tasks to students."

"In our reflection on one of the microlessons we realized that when the teacher leans toward the student (or an entire group) while explaining something, this makes a more comfortable and perhaps friendlier impression than the teacher remaining behind the teacher's desk all the time. Standing alone behind the teacher's desk during my final teaching practice did not make me feel good. Frankly, I was very nervous when I was behind the teacher's desk. Once I began walking between desks and kept among the students, my anxiety disappeared. In the end, I made sure I stayed among the students and maintained friendly contact."

One of the trainee teachers had an opportunity to reuse the entire microlesson during his final teaching practice. His description was this: *"In my teaching practice, I made use of the experience acquired*

from the microlesson and the feedback and self-reflection. My actual class was larger (about 25 students) than our microteaching group, which entailed more noise during group activities but it was not excessive. I expected students to take longer to complete their activities and I was right. Our microlesson in the seminar took about 20 minutes, whereas in the actual school I set more than 30 minutes for it, and we have not completed the whole thing anyway. I was glad to find that the activities we had tried during the microlesson motivated the students and made them cooperate."

The trainee teachers were grateful for having the freedom of choice of their teaching method while preparing their microlessons. *"As a result, we were able to explore any advanced method that caught our interest and find (even before our final teaching practice) whether it would work well with the students."*

Trainee teachers viewed the didactic inspiration they gained from their colleagues' microlessons as the strength of microteaching. Some of them stated that the feedback from their colleagues helped them deal with constructive criticism.

A weakness of microteaching was seen in that the situations were not authentic. Trainee teachers only experience those during their final teaching practice in schools. Another weakness was seen in the separation of the teaching situation from the rest of the lesson because microlessons are limited by the time frame of 15–20 minutes. However, the case with the 40-minute microlesson proved the ineffectiveness of this kind of practice in a didactics seminar.

The trainee teachers also mentioned the risk of mistakes in specialist knowledge and didactics becoming embedded, despite the thorough follow-up self-reflection, and feedback from colleagues and the supervisor. The reason given for this risk was the powerful experience of microteaching.

Conclusion

When compared to the use of microteaching in general didactics or pedagogy (Bajtoš, Orosová, 2011), microteaching in didactics of Czech as a mother tongue benefited from abandoning the lots as a means of choosing the method and the lesson stage in which it is to be used by the trainee teacher; instead the trainee teachers were allowed to choose the method they preferred and a topic they preferred from a thematic unit.

A great majority of trainee teachers found video recordings as the source for microteaching analysis very useful because of the efficient feedback. At the same time, some of them pointed out the risk of the stress related to being videotaped.

Microteaching in tandem was very well accepted. It helped reduce trainee teachers' anxiety associated with video recording and prepared them for future collaboration between teachers which we find very important.

The trainee teachers were also grateful for the fact that the cooperation provided them with deeper insight into the language feature they were explaining and with multiple perspectives on not only language features but also didactic aspects.

Most trainee teachers reported that they had used their experience from microteaching in their final teaching practice.

In contrast to earlier research studies on microteaching (Orosová, Nováková, Juščák, 2015) the students of didactics of Czech as a mother tongue did not list the method of providing feedback as a weakness of microteaching analysis. 46.2 % of trainee teachers believe that face-to-face discussion is the most effective method. At the same time, 53.8 % of trainee teachers prefer anonymous written feedback read by the supervisor. This eliminates the trainee teachers' worry about being critical to microlessons of others.

Appropriate use of microteaching in the seminars of didactics of Czech as a mother tongue meets the fundamental criteria of constructivist instruction: contributes to trainee teachers' motivation, keeps students active, promotes cooperation, conceptual interrelatedness, multiple perspectives and supports self-reflection and providing feedback on colleagues' teaching.

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Business models of MOOCs in 2017

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Abstract: The main objective of Massive Open Online Courses (MOOCs) is to provide educational content of high quality to a large number of participants via the Internet; to enable the mutual interaction through the providing platform, and to allow those participants to study the course independently in time. The educational content in every MOOC is provided free of charge. The increasing influence of MOOCs within adult education (higher education) brings to this area more educational organizations with different legal statuses and different types of commercial focus. Within the production of MOOCs, other additional services are provided to bring revenue to cover the costs of MOOC to the provider. Existing MOOC platforms are still at an early stage of development. Universities, non-profit organizations, and also business companies all around the world adapt different types of business models to provide MOOCs to the general public. This paper focuses on the existing types of business models of the world's four largest providers of MOOCs in the USA and Europe. Based on the current research about the business models of the worldwide leading MOOC platforms, this paper presents a list of possible revenues from MOOC platforms, along with recommendations for the implementation of the business model of MOOCs in the Czech Republic.

Introduction

Massive Online Open Courses, or MOOCs, represent a modern concept for online education. The main idea is to allow quality education, free of charge, anytime and for everyone.

MOOCs are offered mainly by universities all around the world, in high quality, and free of charge to a large number of participants via the internet. These participants can choose for themselves the time of their own studies. The MOOC platform, at the same time, allows participants to interact with each other. These massive open online educational services are provided free of charge. However, the creation, provision, and even reselling of MOOCs bring costs which need to be covered. That's why business models of MOOCs have been under discussion for several years. The influence of MOOCs in adult education is growing; new educational and other institutions with different types of financial management are interested in creating, providing, and reselling MOOCs. MOOC providers offer other commercial services associated with courses, use grant options, and use other options to cover the costs.

The model that grows the fastest, as we have seen in recent years on the Internet, is when content is free and you monetize various things connected with it (Hollands, Tirthali 2014). Freemium business models depend on the money that is generated from additional services to be paid for additions to the basic product – the service offered for free (Jansen, Obrist 2017).

Based on recent Business Models of MOOC research, this paper focuses on the possible revenue of MOOC (Massive Open Online Courses) platforms. The aim of this paper is to describe possibilities of revenue from MOOC platforms in the US and Europe, and recommend their implementation in the Czech system of higher education.

Methods

The final list of possible revenues of MOOC producers in this paper is based on current research in MOOC Business Models. This review study lists the revenues of the four MOOC platforms, the survey includes the US (international – Coursera, Udacity, edX) and European (iversity) platforms. The main focus is on the composition of their revenue, sources of research data are available on the websites of the platforms mentioned above.

Although the implementation of possible business models differs in the US and Europe, these differences bring more challenges for the future MOOC platforms, especially in Europe. Venture capital financing takes place mainly in the US educational system. Public authority funding is rather more common in Europe, either by the government (e.g. by ministries for science and/or education) or by academia itself (Fischer, Dreisiebner., Franken., Ebner, Kopp, Köhler 2017).

The outcome of this study is a list of possible revenues from MOOCs, based on the most common business models for MOOCs in the US and Europe, and recommendations for possible revenues from MOOC platforms in the Czech education system. One of the possible outputs of this study can also be that not all of the income opportunities identified in this paper may be implemented in the Czech education system.

Fragmentation of the education providing process

More stakeholders, organizations, and individuals can be involved in the process of creating and providing MOOCs. Each stage of the process can be created or provided by a different organization. This leads to variability in MOOC development, and to the fragmentation of the education providing process, it can also bring new ideas for paid additional services, and also help to ensure a sustainable business model.

As an increasing number of stakeholders get involved in the creation of MOOCs, there might be a trend of greater diversification of the services around and beyond the MOOC itself (Fischer, Dreisiebner, Franken, Ebner, Kopp, Köhler 2014). MOOC providers in the USA are experimenting with different sources of income, including proctored exams leading to special certificates and credits, fees for individual tutoring, and selling contact data of successful attendees to enterprises (Jansen, Obrist 2017).

Business model

The basic concept of creating, transferring, and gaining value in an organization tells us what kind of business model the organization chooses. Al-Debei, El-Haddadeh, and Avison (2008) indicate a business model with the following three values: the value of architecture (organizational infrastructure and technology that moves products, services and information), financial value (total cost of ownership, income) and the value of the external network. A business model is a theoretical concept for commercial companies (Al-Debei, M. Mutaz, Avison 2010). For MOOC providers, it is important to find or create a suitable business model for nonprofits, government, or other types of organization.

Worldwide providers of MOOCs

Coursera provides a large number of free courses, and holds a partnership with a large number of universities. Most MOOCs are offered individually. Ten educational programs based on connected MOOCs on Coursera are integrated in study programs and academic courses. The earnings structure of Coursera is mainly oriented on other commercial services associated with the courses. Udacity uses a Freemium model. Part of the course content is available free of charge, full access to course materials and certification is based upon a subscription fee. Udacity partners with the Georgia Institute of Technology and AT & T, and focuses on the IT market. The corporate oriented strategy uses MOOCs as the gap between working skills, education, and employment. The revenue streams of Udacity are based on course charges and earnings for its technologies. edX is a non-profit MOOC provider; it was founded and is partially governed by MIT and Harvard. Its vision is to provide open education for everyone, all around the world. Providing the Open edX (open-source for MOOCs) is the world's most important contributor to the development and expansion of MOOCs. iversity integrates MOOCs into academic blended learning in co-operation with universities, and also focuses on chargeable courses.

Revenue structure of Coursera

The establishment of Coursera was funded by capital investors. The total equity of funding as of May 2017 is USD 146.1 million, in 6 rounds of funding, from 13 investors. The source of revenue from course participants is for the beginning of sale of verified certificates. A further source of income from course participants are the fee-based course options (verified credentials for completion), and the fees to earn grades and assessments. Some courses have the option to pay a fee to join the Signature Track, which includes identity verification, verified certificates, and sharable course records. Another type of earnings is the monthly subscription model for

Specializations, which allows the user to purchase access to all content in a Specialization on a month-by-month or annual basis. These sources of revenue come from the participants of courses. In addition to funding and commercial services associated with the courses, there are other new services that generate profits: the Coursera for Business program (additional revenues from the corporate e-learning market) and the Coursera for Governments & Nonprofits program (skills-based training for constituents in government and NGOs). On the other hand, the company offers financial aid to people who demonstrate a need (Coursera Refugees Program). This information was obtained through a detailed exploration of the service offer on the company's website.

Revenue structure of Udacity

Udacity is funded by venture capital firms, in addition to USD 200,000 of personal money. Further revenue comes from the participants of the courses. This includes Freemium courses and paid self-paced courses. Other earnings come from tuition fees for 3 credit hour courses, and additional proctored 75-minute final exams for a fee of USD 89. Since 2014, a three-year master's degree (called nanodegree) in computer science that can be earned entirely online for USD 7,000 has been offered. The company increased the number of enrolments by offering a refund of 50 % of the total charges for those who successfully complete their course within 12 months. Another source of revenue comes from Corporate Training. Udacity offers talents to hire for free. This information was obtained through a detailed exploration of the service offer on the company's website.

Revenue structure of edX

The largest volume is represented by free courses with chargeable additional services: Verified Certificate, Earn Credit course, or Audit. Another part of the profit brings Paid Professional education, Professional Certificates, XSeries (series of 5 – 7 chargeable courses, USD 49 per course), and the MicroMasters Certificate (credit – eligible, may be applied to accelerate a Master's Degree). edXis empowering research on pedagogy; the platform conducts experiments and exploration of using new tools and techniques for learning. This information was obtained through a detailed exploration of the service offer on the company's website.

Revenue structure of iversity

iversity funding is based on venture capital; the company has raised more than € 5 million in venture capital. The revenue consists of the sale of verified certificates of free MOOCs, the sale of the Pro – courses with a Statement of Participation. iversity generates revenue through its Academy, which allows other organizations to sell courses online on this platform. The last

two items belong in the section iversity for Business. This information was obtained through a detailed exploration of the service offer on the company's website.

Table 1: Revenue options of MOOC platform start-up

Startup funding	Private investors (venture, equity, personal money) Public investors (foundations, subsidies) Grants
Chargeable additional services associated with free MOOCs	Verified certificates Fee-based course options Verified credentials for completion Fees to earn grades and assessment Identity verification Shareable course records Proctored final exams
Chargeable MOOCs	Monthly subscription model Tuition fees Freemium courses Credit-eligible courses Paid self-paced courses University Degree program (NanoDegree, MicroMaster) Work toward Verified Certificate Courses in series leading to Certificates
MOOCs for Business companies	Corporate e-learning Program for Governments & Nonprofits Corporate Training Professional Education courses Licensing MOOC for internal use at enterprises or universities Recruiting based on tracking students' activities and study results
Other	Contributions from sponsors Advertising revenue Fees for the creation and deployment of MOOCs Link to partner bookstores

Source: Own

Results

The revenue structure reflects the overall focus of the platform, its specialization on the target group, and its position on the market. All of the platform start-ups were backed by initial capital. The business model of the platforms reflects their market specialization. They gradually add additional products to the basic product package, and extend their reach to other target groups over time. All of the platforms under review currently provide free or partially free MOOCs with additional chargeable services, paid MOOCs, and Business oriented MOOCs for companies, which are able to generate steady income. These revenues are summarized in Table 1.

Conclusion

The emergence of a new platform should be laid on solid foundations and previous analyses. The establishing of a MOOC platform provider needs a reasonable amount of private capital (equity, venture) or public capital (foundations, grants), which is mainly used for the establishment of the technical infrastructure, partnership with universities, and the market position. The MOOC provider prepares a basic product package according to the desired market position. Those basic products should make a profit (e.g. chargeable verified certificates). Further development and targeting for other customers follow the successful introduction of the core products.

The system of primary, secondary, and higher education in Czech Republic is governed by the Ministry of Education, and funded by public sources. Establishing and linking the MOOC platform to Czech academic education presumes the involvement of the state organizations in the preparation of this platform. Initial sources of funding may therefore come from public finances, such as subsidies from the state budget or EU grants. An important point for the Czech MOOC platform will be the choice of an appropriate market position, the partnership with universities, and the creation of a basic package of products. One of the issues remaining for further discussion is the issue of MOOCs in English and other languages in the Czech platform, and links with global platforms of MOOCs.

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Enhancing a knowledge society concept via educational projects

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Abstract: The research tempted to understand the importance of a coordinated response to the challenges aroused from offering educational services to foreign citizens and adults by Ukrainian universities. The paper presents the experiences on how the information and communication technologies may be used in addressing challenges of modern society while changing the teaching approaches.

Given Internet and informational-communication technologies role in effective building of the inclusive knowledge society the paper presents the overview of three case studies observed during a 4-7 years period at the basis of Sumy National Agrarian University: peer-design of the educational courses and a MOODLE use for distance learning of foreign students (15 courses, 80 students), and rural citizens (386 farmers) education via Internet. The conclusions were delivered under the context of explored issues, challenges and opportunities of the knowledge society, open education and lifelong learning concepts. The paper highlights the importance of identifying good practices in specific areas of youth and adult education within the educational projects under an increasing foreign students flow into the country and a rapidly rising number of rural unemployed. The results of the paper try to generalize the best approaches to reach the aforementioned goals which may be further used by universities working in the same field.

Introduction

The teachers team consisting of the authors of the paper was among the first teaching staff of Sumy National Agrarian University (Ukraine) who started working with foreign students in English and who was also involved in the MOODLE on-line courses development. The number of foreign students (mostly coming from African and Asian countries) has been constantly increasing since 2010, while due to the visa issues they couldn't start to participate in the educational process in time: some of them arrived 2 months later the academic year beginning. The university educational project aimed at engagement of the MOODLE platform into the on-line courses design set the problem of developing the content which would have been easily grasped by the foreign learners. This brought out the need to investigate the comprehensiveness of the open education and digital tools use within the educational process at the university.

The MOODLE platform was chosen by the university due to its leading position at the learning management systems market. It is one of the oldest and the most popular online learning platforms with over 60 million users worldwide. It has the following advantages:

› it is free of charge;

- it has an extensive documentation available in Russian and English along with a number of forums on the use of this online platform;
- it has a long history of successful use not only in the universities of the EU and the US, but also in the other countries (more than 68 000 customers worldwide) (Lambda Solutions 2013);
- it is an open-source platform that allows the development of additional modules needed for some special needs of the university as well as the plug-ins developed by the community of other developers which are also free of charge in most cases.

Despite the drop in the number of clients the MOODLE experienced in 2016-2017, it still remains one of the leading players at the market.

A number of empirical observations made us to consider the effectiveness of an educational course design done by a single teacher, because, as the experience showed, the courses content delivered to a Ukrainian group of students and to a mixed one (or up to 100 % consisting of foreign students) is expected to be up to 50 % different. This refers to several defining and significant factors: educational and cultural background, cognitive skills, teaching approaches used by previous teachers, places of future knowledge application (both in geographical and management-practice sense), personal motivation, teacher's and students' ability/experience of teamwork under the intercultural context, etc.

The need to teach foreign citizens in English and absolute lack of the English-language literature available in Ukraine also pushed us to use as many Internet open access resources as possible. This brought up to the surface a number of issues to be learnt and solved: starting from intellectual property rights and finishing with technical implementation of the ICT tools into the educational process considering the lack of PC equipped classes, speed of the Internet, teachers' and students skills in ICT use, their motivation to do so, etc.

Additionally, during the FAO/EBRD educational project[1] implementation during 2014-2016 the researches team had to deal with the representatives of the farming sector of seven regions of Ukraine teaching them directly or on-line. This allowed to observe the empirical data of the MOODLE/Internet use by the farmers, representing both the adult education and the rural citizens segment. The summarized and generalized conclusions of the 5 years' experience in the topic are presented in the paper along with the processed theoretical implications which are currently discussed within the scientific community.

The paper goal is to demonstrate the importance of a coordinated response to the challenges resulted from offering educational services to foreign citizens and adults by Ukrainian universities. The paper presents the experiences on how the information and communication technologies may be used in addressing challenges of modern society while changing the teaching approaches.

[1] The two stages project "Successful Grain Agribusiness in a Small Area", which had been implemented in 2014-2016 with the support of "Central European Initiative" in partnership with Sumy National Agrarian University.

The paper considers a "knowledge society" concept due to its importance for the social processes in Ukraine in general and the world trends incoming to the country. The UNESCO World Report establishes four principles that are essential for a knowledge society development (United Nations Educational, Scientific and Cultural Organization 2005). These are the cultural diversity, equal access to education, universal access to information, freedom of the opinion expression. It's rather obvious that these principles are crucial the seccussful country positioning in the modern world, however the dynamically developing society in Ukraine requires particularly careful compliance with these rules.

Nowadays the use of digitalized communication is becoming increasingly adopted by the higher education institutions all over the world. Many leading universities are looking at a computer-mediated communication with their learners as at something that is worth to invest in because it is a "versatile medium for the delivery of educational programs "anytime, anywhere" (D. Garrison and colleagues 2000, 87). This lays in line with the global trends of countries integration, migration for work and studies and, what is more important, with a philosophy introduced by the EU experiences and fixed in the Sustainable Development Goals of the UN 2030 Agenda for Sustainable Development (the UNO 2015).

The problem background

Why the IT skills for all is still a subject of discussion in Ukraine? The difference in e-learning perception by the EU and post-USSR countries is vividly seen by the following example: Merriam-Webster's Dictionary, America's leading and one of the most-trusted providers of language information for English learners in post-USSR countries, doesn't offer the definition for the e-learning term at all. This is a traditional approach to the language data base formation which lacks flexibility and necessary timely resources of a whole volunteers community. While a free online encyclopaedia "Wikipedia" gives it with references to Richard E. Mayer, the founder of the e-learning theory, as a "cognitive science principles of effective multimedia learning using electronic educational technology". Wikipedia is an Open Educational Resource that can be modified and enhanced by the volunteers from around the world. This unique feature of the OERs allows free access for everyone to the information which once required special conditions of access and more complicated rules of reuse, translation and modification. Still, even though post-USSR countries enjoy the benefits of such resources they are not considered to be of scientific or teaching value for the schools and universities. D. Amemado notes this tendency even for the European universities which "do not adopt technologies primarily for pedagogical or teaching and learning task-related reasons" (Amemado 2014, 28). ICTs are rather used as an additional enriching tool which may be used by a learner's choice and will.

Massive open online courses (MOOCs), accessible to anyone with a computer and access to the Internet, allow enrolment of a significantly bigger number of students than it is possible for the traditional educational institutions. There are researches that call the MOOCs "to be an online crossroad where to learn from other areas of studies and from professionals and scholars of different backgrounds" (Amemado and Manca 2017, 22). They also stress that learning activity is currently "distributed across people, environments and situations" (Amemado and Manca, 2017, 25). It means that roles of the learners' or instructors' are exchanged sometimes and subjective human knowledge assessment is eliminated by automatic grading.

It is interesting to note that we are describing the trends that exist now, but were caused by the development of digital technologies and information society transformation, while in 1980 an American futurologist Alvin Toffler had already offered a term "prosumer" in his "The Third Wave" book. He referred to a person who consumes and produces media at the same time. Nowadays this term describes either online buyers or, in line with a new educational philosophy, learners who are involved in the development process of educational resources. The university students, graduates, adult learners received an opportunity to use more personalized teaching materials adjusted to their needs – either cognitive or professional, cultural or financial. And thus, involvement of the learners raises the material value, while educators may further use, share, and modify those materials, significantly multiplying the learning effect.

According to A. Peters and G. Britez "Openness is a concept that has come to characterize knowledge and communication systems, epistemologies, society and politics, institutions or organizations, and individual personalities" (Peters and Britez 2008, 3). It means that downloading someone's case study, adapting it to your students' needs and re-uploading a new version back on-line is not a crime but an act of creation the added value for the educators community.

By 2018 about 64 % of the population of Ukraine became the regular internet users and 35 % of them are people aged 15 to 29 years old which is the optimal age for studying. In numbers these are about 7.35 million of people. The actual number of students in Ukraine amounts to 2.5 million of people. So the wide use of MOOCs can potentially involve up to 5 million of people into the study processes. The value of such a breakthrough in the question of the achievement of the knowledge society can't be overestimated (Factum Group Ukraine 2017, 10-18).

As for the "knowledge society" term, it was introduced by Peter Drucker in the late 1960 s and developed by Robin Mansell and Nico Stehr 30 years later, being recognised by all the OECD members, emerging economies and even developing countries nowadays. The UNESCO world report 2005 "Towards Knowledge Societies" outlined the need of further transformation of the knowledge society onto a knowledge-sharing base, stating: "… for access to useful, relevant knowledge is more than simply a matter of infrastructure – it depends on training, cognitive skills and regulatory frameworks geared towards access to contents" (UNESCO 2005, 21). The issue of the content quality and accessibility motivated this research paper creation.

Research questions and methods

Some researchers of the online studies note that the largest number of students who have participated in online courses have done so hoping that "e-learning courses would be easier to absolve than the traditional classroom subjects" (Nagy 2015, 65). From the other hand, bad management of the teaching and learning process with the use of ICT may become stressful both for a teacher and students in case they don't possess the necessary competences and don't have the opportunity/time/ability to gain them. Then "the process of learning may be reduced on pure formality which will grow into alienation" (Atanasoska, Andonovska-Trajkovska, Cvetkova 2016, 147). The fact is, teachers need advanced skills and some prior training or experiences for integrating ICT in the educational process. Gaining these skills depends on a number of factors of both subjective and objective nature. The studies of T.Atanasoska and her colleagues (2016, 153) show that "the teachers use PowerPoint application in Microsoft Office mainly, and they use it every time when they are integrating ICT in the teaching process". Glance and colleagues (2013) found out that "the main tools used in a great number of MOOCs were formative quizzes, short video formats, peer and self-assessment and discussion forums". They consider it as a limitation to the educational abilities of MOOCs, as well as it demonstrates the lack of variety of tools necessary for the effective e-learning design. D.Laurillard (2006) found easy explanation for this phenomena more than 10 years ago: "Most staff using these technologies did not grow up with them". The issue is that this staff teaches the generation which was born within the knowledge society and will be using ICT since the early childhood. Being the representatives of a post-USSR society suffering from constant economic instability and political drawbacks, we think that namely social and political issues are the macro level obstacles for the knowledge society enhancement.

So, taking into account the results of the previous researches the current study was aimed to answer the following questions:

- Can the introduction of the online-education in a form of a learning management system remove some barriers for the learners on their educational path?
- What is the difference between requirements of the Ukrainian students, foreign students and learners coming from a narrow professional field or a specific territory towards the learning outcomes, course content and the way it is presented?
- Which factors affect the quality of the online education?

These questions were inspired by the experience of the researchers' team in dealing with the creation of the university curriculum for foreign students and adults, as well as with participating in the professional and career development competences of a university teacher. Being an executive of the educational projects with the use of on-line resource enriched the researches team experience and observations data.

To answer these questions the following methods were applied. Using the method of a documentary analysis, the documents regulating the ICT introduction into the education in Ukraine and the EU were analysed in order to assess the importance of government regulation into the process of implementation of an online learning. During the practical implementation of the online learning system, the statistical observation and survey methods were used to compare the requirements of different groups of students towards the online-learning system and to estimate the obstacles these groups faced during the experiment.

By using MOODLE feedback analysis we obtained the results of on-line education potential for foreign students and for adults coming from the narrow professional field and being the rural residents (farmers). By means of the questionnaires and face-to-face communication we asked the users of our educational programmes about the challenges they faced during accessing the on-line learning and during the studying process itself.

Our personal observations cover the period of 7 years of teaching foreign citizens (up to 15 students each year per each member of the research team, the focus group was presented by 80 students in whole both in bachelor and master studies). The number of farmers who were involved in the FAO/EBRD specialized training program "Successful Agribusiness Grain in a Small Area" was 220 (6 modules) in 2014-2015 and 166 (4 modules) in 2015-2016. The overall duration of the educational projects implementation was 5 years (15 on-line courses in English and 2 on-line courses for farmers). It gave us the opportunity to present the experiences on how the information and communication technologies may be used in addressing challenges of a modern society while changing the teaching approaches.

The conclusions were delivered under the context of explored theoretical issues, challenges and opportunities of the knowledge society, open education and lifelong learning concepts.

Observation and analysis of results: Ukraine comparing to the EU

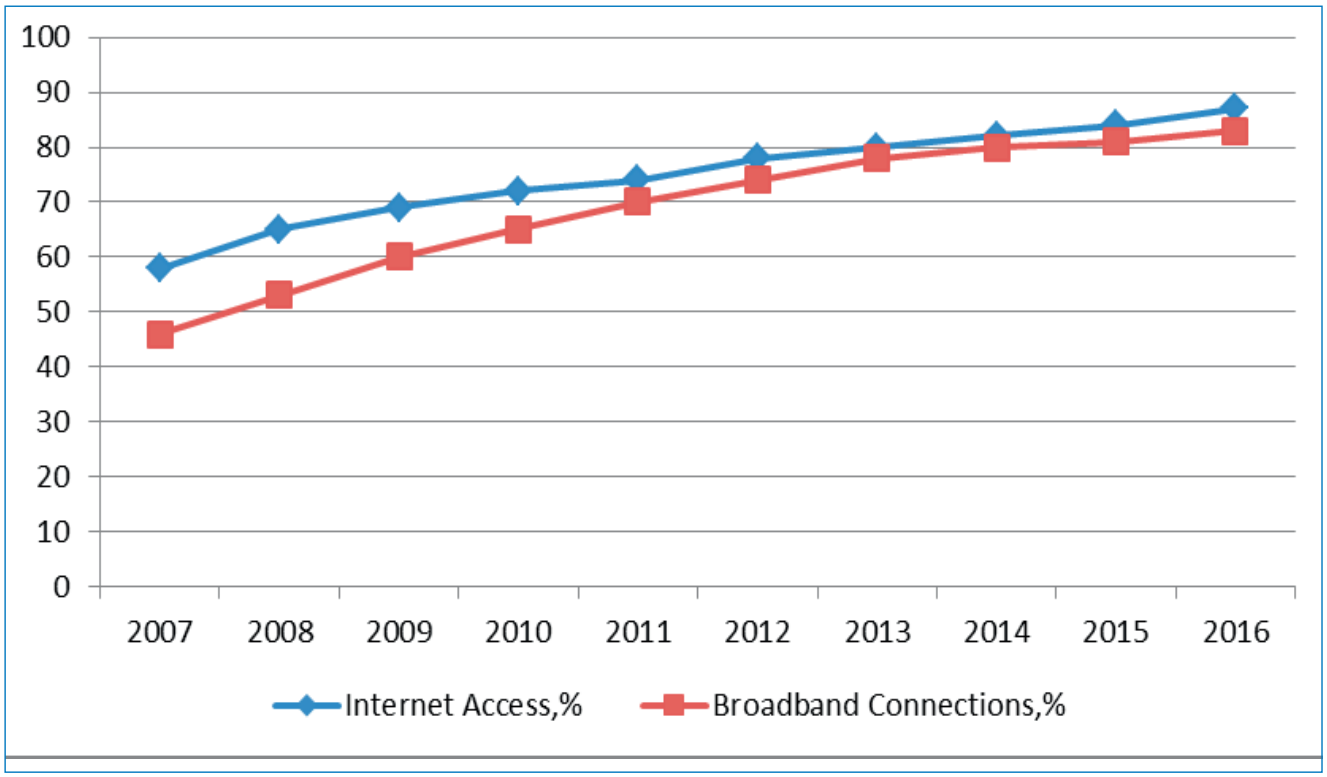
The major findings of the study are based on the analysis of the European and Ukrainian experiences in enhancing the knowledge society via open education and ICT tools development. Thus, according to the Deloitte Limited EU Funding guide (2014, 5-7) the main EU funding programmes of the 2014-2020 period are: "Horizon 2020" with a total budget of € 77.03 billion, "Connecting Europe Facility" with € 21.94 billion and "Erasmus+" with € 14.8 billion. Apart from those there are also other funding programmes for education in particular (Consumer Programme 2014-2020, Customs 2020, Fiscalis 2020, Hercule III, Internal Security Fund Component for Police Cooperation, Pericles 2020) and separately there are those aimed at the ICT development (Ambient Assisted Living Joint Technologies Programme (AAL JP), Competitiveness of Enterprises and SMEs (COSME), Fiscalis 2020, Galileo, Egnos, Horizon 2020). These statistical data show the level of financial support provided for the innovations and ICT development, as well as for education in Europe. While, according to the official Ministry of Education and

Science report, there is one computer per 27 students in state schools in Ukraine. 87 % of schools have the Internet access, 96 % of schools are equipped with some amount of the hardware (40 % of it is old-fashioned) and software (13 % of it are used without an official license).

The insufficient infrastructure (number of computers, low Internet speed, relatively high costs for ICT skills training, mobile Internet traffic, Internet accessibility in rural and remote districts), low awareness in ICT potential for daily life and in applicable opportunities for advanced computer skills, weak state policy for digital society development and innovations support – all these and much more results in low computer skills and low efficiency of use of digital resources in Ukraine. Affordable and widespread broadband Internet access is very important for a knowledge-based society enhancement.

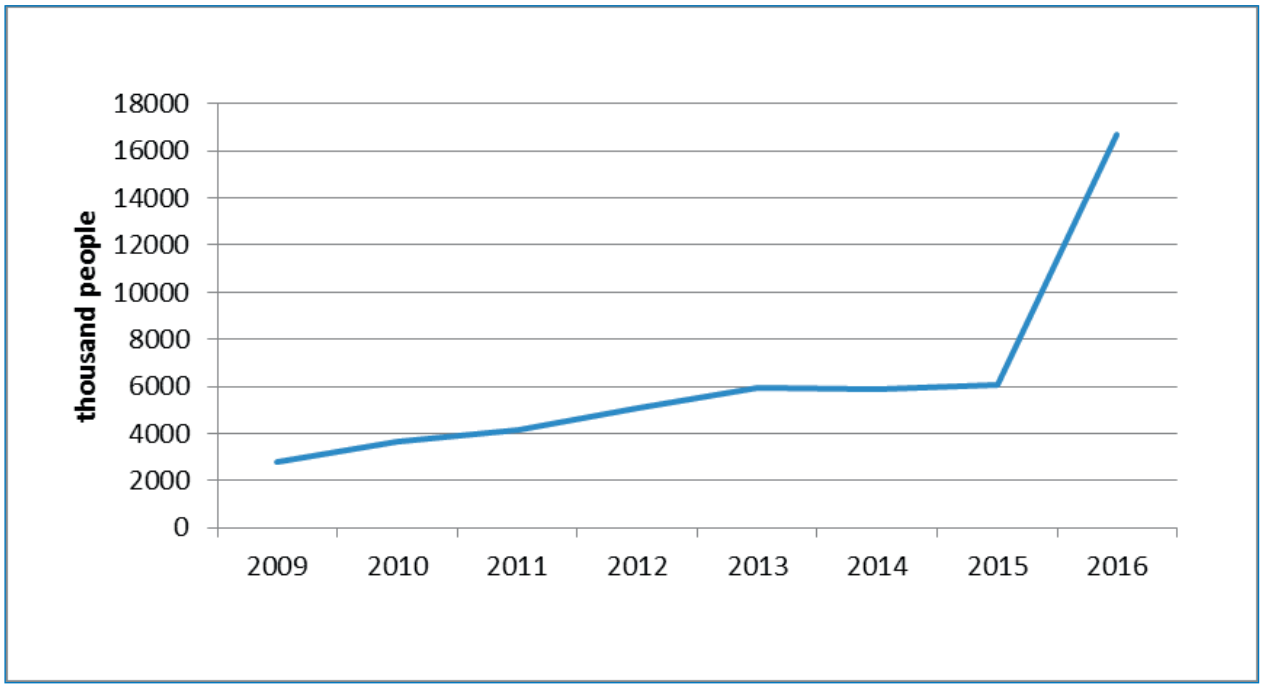
According to EUROSTAT (2017), 83 % of the households in the EU-28 had broadband access to the Internet in 2016 (see Graph 1), apart from the Ukrainian state-of-the-art (see Graph 2), which is 62 % of citizens older than 15 (Factum Group Ukraine report 2016). 97 % of such EU users were recorded in Luxembourg and in the Netherlands, while the lowest rate of 64 % households with internet access was observed in Bulgaria. More than 82 % of all EU citizens starting from the age of 16 used the Internet at least once in three months, 71 % of whom accessed it on a daily basis.

Graph 1: Internet access and broadband Internet connections of households, EU-28, 2007–2016 (% of all households)



Source: EUROSTAT, 2017.

Graph 2: Number of internet users in Ukraine, 2009-2016, thousand people



Source: State service of statistics of Ukraine, 2016.

It should be noted that similar to Ukraine, there is an urban-rural division within the EU-28 in terms of internet access. 86-88 % households in cities/towns have comparatively high access rates, while in rural areas their share is 80 %. The improving situation in Ukraine with those numbers does not mean the improvement in computer skills for the rural population though. Almost 47 % of rural households and 69 % of urban ones have the Internet access (Factum Group Ukraine 2016).

It is important to note that in the EU-27 women and men shares in the number of those who participated in education and training in the 12 months before the interview were equal. According to the official statistics, men were sensibly more likely to get new knowledge in the Netherlands and Germany, while the reverse was observed in Finland, Lithuania and Latvia. It's a common sense that younger persons (aged 25–34) would be twice more active than older workers (aged 55–64). The most interest for further training were shown by the persons with a tertiary level education (61.3 % for the EU-27 in 2011), while only 21.8 % of those with the lower secondary education were the likely to have participated in it.

Except the background education, statistical observations in the EU-27 showed the trend of three most commonly named obstacles for education and training (EUROSTAT 2011): 50 % considered the training unnecessary; 21 % claimed lack of time due to family responsibilities; 18 % complained for the conflict with work schedules.

The input of a real sector of economics into educational programs development means a lot for their learning outcomes future applicability and efficiency of their graduates at work. Thus, the

university graduates were involved in the curricula review providing their valuable and specific feedback.

Observation and analysis results: teaching foreigners and adults in Ukraine

Another inflow of those who may study using the distance learning form of education are the foreign students, whose number has been constantly increasing since 2010. Mostly these are the citizens of African and Asian countries with either rather basic academic skills in the field of computer literacy and Internet navigation. The other difficulty is that in addition to their academic background that sometimes differs from Ukrainian significantly, due to the visa issues they are not able to start the educational process in time (1st of September). Some of them may be 2 months late for the academic year beginning, which means they should start learning something themselves. Sumy National Agrarian University has launched an educational project of the on-line courses at the MOODLE platform. The need to design the English language content and then upload it to the MOODLE set the problem of the teachers' e-learning basics literacy: we had to investigate the comprehensiveness of the open education and digital tools use within the educational process. Up to 80 % of teachers cohort had their MOODLE training within next 3 years.

Students' feedback and voluntary peer-review made us consider the effectiveness of an educational course design only by one teacher. A lot of factors that define the quality of the course and its future applicability by the students should be taken into account: educational and cultural background, cognitive skills, teaching approaches used by previous teachers, places of future knowledge application (both in geographical and management-practice sense). For example, the courses content delivered to a Ukrainian group of students and to a mixed one (or up to 100 % consisting of foreign students) must be up to 50 % different, and if it refers to such courses as "Commercial Law of Ukraine" or any other course focused on Ukrainian legislation or experiences, the "international" content must occupy a bigger share.

For this, English-language literature had to be used which was absolutely absent at the Ukrainian market. The import costs of these books is usually 2.5 times higher than their original price. All these pushed the teaching staff to use as many Internet open access resources as possible facing more challenges to be learnt and solved: from intellectual property rights to technical implementation of the ICT tools into the educational process. It was a difficult and time and efforts-consuming process considering the lack of PC equipped classes, speed of the Internet, teachers' and students skills in ICT use, their motivation to do so, etc.

As to the level of satisfaction of the foreigners with the online course in MOODLE the results are presented in a Table 1. The following parameters were evaluated by the foreign students during the survey:

› Usability of the platform (UP);

› Convenience of the interface (CI);
› Speed of work, comparing with offline study (SW);
› Convenience of a built-in knowledge assessment system (AS);
› Understandability of the teacher's explanations (UE);
› Availability of explanatory documentation (AD);
The rating scale for each parameter was from 1 to 10 points.

Table 1: Results of satisfaction assessment of the foreigners with the online course in MOODLE

Number of students that rated the online course with such a grade	Parameters						Total number of points
	UP	CI	SW	AS	UE	AD	
10	42	49	43	31	68	59	2920
9	21	18	25	22	7	14	963
8	10	10	11	16	5	4	448
7	5	2	0	8	0	3	126
6	1	2	1	2	0	0	36
5	1	1	0	1	0	0	15
4	0	0	0	0	0	0	
3	0	0	0	0	0	0	
2	0	0	0	0	0	0	
1	0	0	0	0	0	0	
Total number of points							4508/4800

It can be noticed that the level of satisfaction is rather high (93.9 % or 4508 points of the maximal available amount of 4800, in case all the students have rated all the parameters 10/10). The results show that the satisfaction of the respondents greatly depends on the level of competence of the teacher (UE). Such parameters as Availability of explanatory documentation, Convenience of the interface and Speed of work, comparing with offline study were also rated quite high. At the same time students were less satisfied with Usability of the platform in whole and Convenience of a built-in knowledge assessment system.

EBRD/FAO Project Case Study. The observations results obtained during the implementation of two phases of a specialized modular training program "Successful Agribusiness Grain in a Small Area" (financed by EBRD and FAO under the support of the "Central European Initiative" Fund) represent a low potential for on-line education and OER use for rural citizens of Ukraine. They also demonstrated low motivation and very low ICT skills.

The training program was designed for representatives of farms with a land area up to 5 thousand ha and engaged 220 + 166 participants from 7 and 10 regions of Ukraine respectively to the project phase. The majority of the registered participants consists of the farms' heads, their deputies (both

cover 57 %), agronomists, economists and engineers. The average size of participants' farms area is 997 ha. During the project a tendency to attract more representatives of the households with a small land plot had been noted.

85 % of the participants of the second phase were represented in the previous project stage. A deeper research on the topic showed that farmers if use the Internet for information search, use either news portals (as www.ukr.net or www.mail.ru) or specialised trading web-sites. More seldom advanced agriculture-targeted web-portals (as www.latifundist.com, www.fruit-inform.com or www.kurkul.com) are checked.

A specific training program was designed for each project phase containing face-to-face seminars, field trainings and an on-line course within the MOODLE platform (for example, at http://fao.sau.sumy.ua/login/index.php). The participants were informed about the on-line course opportunities and technicalities in live and also via direct e-mailing. The photo and video records of second phase project activities (trainings, press conferences at the regional and national levels) were placed at the project web-page (www.fao.sau.sumy.ua). On completion of each module the participants were tested on-line on mastering the theoretical and practical materials, the results of this formed each participant's score within the entire project training course. The best results of the second project phase were awarded with an educational tour to France. Because of the presence of an additional motivation factor this paper presents namely the analysis of the second project phase covering 166 farmers form 10 regions of Ukraine.

For the wide promotion of the project results and an on-line course public access, there were a project web-page and a Facebook group links, as well as an inviting banner to the on-line MOODLE course created at the Sumy NAU official page (www.sau.sumy.ua). Promo videos and texts were constantly added to the project web-site telling about the launch\closure of the modules as well as about the invitation to the on-line course. The process of registration for participation in all the modules was carried out in several ways: online through the project website (2 % of farmers used this tool), via email (only 10 %) and, mostly, via direct personal phone calls. The results of the observations demonstrate that 100 % of the farmers had the e-mail address, 70 % used it personally and only up to 30 % used it on a regular basis. Most of the project information requiring urgent farmers' feedback had to be delivered via the phone.

As for the reporting date of 02. 03. 2016 there were only 46% participants registered in MOODLE, originally coming from Sumy, Kyiv, Poltava, Odessa, Zaporizhzhya, Zhytomir, Kharkiv, Chernihiv, Lviv, Cherkasy regions of Ukraine. This number represents both urban and rural populated regions. According to the statistics of the targeted visits (1. 10. 2015 – 01. 03. 2016) there were 1867 unique visitors at the project web-site (for your information: a Ukrainian business website for farmers FARMER2B (farmer2b.sale) specializing in machines and equipment sales may get 380 visits a day, a large Ukrainian portal on the purchase of grain gets 8420 a day). The amount of traffic is got by the website depends upon the level of interest in what it is about. The project was strictly aimed at the small scale farmers who didn't surf the web much and thus were not visiting the web-site.

The project participants were also interviewed in order to obtain their feedback on satisfaction with the on-line learning process and difficulties they met. Handouts and information provided always pleased the majority of participants in terms quantity and being up-to-date, they also enriched personally and professionally the participants. It means that quality of the modules content did satisfy the majority of the participants. An overall assessment rate of the event level and its content was 4.77 points in average (maximum 5 points).

Summary

The first phase of this comprehensive study was a thorough review of the education literature focusing on issues of the e-learning concept, the Community of Inquiry theoretical framework, lifelong learning in the context of the ICT skills development, the pressing need for collaboration within educational content development. Further the authors deepen the research problem into the field of offering educational services to foreign citizens and adults by Ukrainian universities with the use of the ICT technologies.

As a describing background, the paper offers comparison of the general policy trends of ICT skills development and ICT tools support by the EU and Ukrainian government, their perception of the computer-based education under the influence of the new educational philosophy of prosumers. The main finding of this comparison is the following: the EU together with the UNO units has a strong strategy in this domain. The majority of CIS countries can't boast with something even remotely similar using rather a "got problem – started to look for the solution – while was searching, the client dealt with it somehow" approach. Namely this issue makes it difficult even to use the Internet opportunities designed and launched by other developed countries (Open Education Resources, high quality hardware/software, prosumer philosophy for getting the information you need). That is why a question for further discussion is: what is the best mode for enhancing the knowledge society in such post-USSR countries as Ukraine?

From this review, a conceptual framework of the successful computer-mediated communication with the learners was assumed basing on the experiences of the research team which were gained during the process of creation of the university curriculum for foreign students (7 years) and adults (4 years), as well as with participating in the professional and career development competences of a university teacher. The analysis of the data and observations obtained during the implementation of the educational projects with the use of on-line resource formed the following conclusions:

- On-line education is powerful tool for the learners having some barriers on their way to the university;
- The insufficient infrastructure, low awareness in ICT and advanced computer skills;
- Limited skills of teachers in the use of ICT skills for the educational process improvement limit the students opportunities for the future, as well as reduce the OER and ICT potential;

- Learners coming from the narrow professional field or a specific territory (being the rural residents or foreign citizens) have different requirements towards the learning outcomes, course content and the way it's presented;
- There is a tendency for adults to start training for improving their professional qualifications, as well as for getting a higher degree for the job promotion;
- Broad promotion of the Internet resources of the educational project, without specific skills and serious money inputs, doesn't guarantee a big number of their users, especially if the target audience come from the computer and web-marginalised territories;
- Bad management of the teaching/learning process with the use of ICT may become stressful both for a teacher and a students;
- A lot of factors define the quality of the course and its future applicability by the students.

The results gained were proven by the experiences of other teachers in Ukraine, that's why the further scientific work may lay in search of the modes of prosumers philosophy development in terms of a teacher and a student specifics. Next, there is also a need of developing the creativity in ICT use both by teachers and students, development of their critical thinking and self-managing learning skills. Our society has been fundamentally changed by the impact of the Internet which means that increasing instability of employment and professions may be reduced by the development of people competences in enhancement of the emerging knowledge society of sharing.

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Digitální informační kurátorství jako univerzální edukační přístup
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Předkládaný text *Digitální informační kurátorství jako univerzální edukační přístup* je teoretickým obohacením tematického kruhu publikací zabývajících se aktuálním tématem informačního kurátorství. Jak uvádí sám autor v úvodní části, kniha vychází z publikace *Digitální informační kurátorství v pedagogickém kontextu* (Černý, M., 2015) a rozšiřuje ji o polovinu obsahu.

V úvodních pojednáních se čtenář seznamuje s pojmy informační a digitální kurátorství, digitální kurátor, pedagogické kurátorství a se zasazením těchto pojmů do kontextu konstruktivistického a především konektivistického paradigmatu. Autor představuje teoretické koncepty i modely informačního kurátorství využitelné v aplikované rovině v reálné edukační praxi (např. trojfázový model Whittakerův determinující informační kurátorství obsahem, použitým médiem či formou). Zároveň ukazuje provázanost informačního kurátorství například s osobním datovým nebo informačním managementem, možnosti propojení osobního informačního prostředí s druhými lidmi volbou adekvátní informační architektury a nástrojů jejího fungování. Jsou představeny kompetence digitálního informačního kurátora, jednak v kontextu zahraničních zdrojů (v článku *Competencies Required for Digital Curation: An Analysis of Job Advertisements*), jednak domácích (Rámec profesních kvalit učitele). Autor čitelně provazuje tuto roli s pedagogickou profesí budoucnosti výhledově ovlivněnou adaptabilní výukou, a tedy s rolí nutně posílenou technologickým vzděláním a dovedností pracovat s metadaty.

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