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## **E-Learning Within the Framework of the Czech University System**

Přehlední znanstveni článek

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### **ABSTRACT**

During the last few years, e-learning has become an integral part of tertiary education systems, not only within the framework of blended, but, to an increasingly larger extent, also of full-time study modes, accredited and implemented at Czech universities. However, along with its large-scale deployment, a number of problems have emerged, which resulted in the formulation of new research hypotheses. Among the most important ones are those regarding the influence of e-learning on the quality of education, the efficient ways of motivating and mobilizing students, and the creation and development of particular competences. There are many external, as well as internal influencing factors, acting more or less covertly, to a greater or lesser intensity. It is highly desirable to identify, describe, analyze, and minimize or maximize their influence in order to prevent them from having a massive negative impact, conditioned by fashion trends, on the quality of tertiary education.

**Key words:** Bologna declaration, tertiary education, e-learning, e-learning development, learning theories, information and communication technologies

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# E-učenje v okviru univerzitetnega izobraževanja na Češkem

## POVZETEK

V zadnjih nekaj letih je e-učenje postalo sestavni del sistema terciarnega izobraževanja, ne samo pri kombiniranem študiju, temveč v vse večjem obsegu tudi v okviru rednih študijskih programov, ki so akreditirani in se izvajajo na čeških univerzah. Toda ob obsežnem uvajanju te vrste učenja se je pojavilo kar nekaj pomislekov, ki so vplivali na oblikovanje novih raziskovalnih hipotez. Med najpomembnejšimi so tisti, ki zadevajo vpliv e-učenja na kakovost izobraževanja, učinkovite načine za motivacijo in spodbujanje študentov ter ustvarjanje in razvoj posebnih kompetenc. Obstaja veliko zunanjih ter tudi notranjih dejavnikov vpliva, ki delujejo bolj ali manj prikrito oziroma bolj ali manj intenzivno. Priporočljivo je, da se tovrstni dejavniki prepoznajo, opišejo in analizirajo ter da se minimalizira ali maksimira njihov vpliv, saj se le na tak način lahko prepreči njihov vsesplošni negativni vpliv na kakovost terciarnega izobraževanja, ki ga pogojujejo tudi modne smernice.

**Ključne besede:** Bolonjska deklaracija, e-učenje, razvoj e-učenja, učne teorije, informacijsko-komunikacijska tehnologija

## Introduction

Information and communication technologies provide many opportunities with respect to effective learning. It is mainly the education through e-learning, with the complete education process being mediated, managed, and evaluated via computer technology, high quality hypermedia educational materials, and sophisticated software solutions. One of the major benefits is the fact that everybody can participate, regardless of any possible handicap, the only precondition being the ability to study independently and taking the responsibility for one's own learning process and the goals to be achieved.

E-learning has become a phenomenon that has recently been approached continuously and intensively. There are many studies dealing with the problem, such as the ones by Zounek (2009a, 2009b), Clark and Mayer (2008), Paulsen (2003), Barešová (2003), Nocar et al. (2004), Eger et al. (2002), Zlámálová (2002), Bednaříková (2008), Kopecky (2006), Květoň (2004), and Prucha and Mika (2000).

## **Current Social Context of the Introduction of E-Learning to Czech Universities and Colleges**

From a retrospective point of view, two requirements of the Bologna Process have been put into practice within the Czech tertiary education since 2005. The first requirement has been a constant effort to “unify” higher education within the European Union. The second requirement has been a frequently discussed issue of the financing of Czech tertiary education, including science and research. Both those requirements have had a significant impact on tertiary education development trends. In fact, universities had to apply relevant optimization measures in order not to impair the quality of tertiary education. At the same time, they had to continue developing and cultivating particular scientific disciplines. The measures were often purely pragmatic, and the inadequate application of them had a negative impact on the quality of the entire education system. However, the quality of the academic staff is rarely affected. To keep the positive trend, it is necessary to modify some traditional educational methods to meet the demands of the students and also guarantee the required quality level of education.

The Bologna Process has been affecting the Czech universities over the last five years. Within the framework of that Process and based on the Berlin Communiqué, the Czech Republic acceded to restructuring study modes implemented at universities. The process that requires at least two cycles of tertiary education was initiated in 2005.

The restructuring in some of the existing study programmes has not brought the desired results, and in some cases, it was rather counterproductive, since it was not sufficiently economically or legally substantiated. This is especially evident in teacher training programmes and courses. According to the Czech Education Act, the 1<sup>st</sup> level graduates are not entitled to hold the position of an educator (i.e. teacher), and can only be assistant teachers (Vašutová, 2004). Such outcomes do not entirely meet the requirements of teaching practice and do not reflect the applicability of the graduates. The restructuring in these studies should therefore be reconsidered, and study programmes should be changed. However, it should be noted that some other study programmes benefitted from the restructuring and did well in fulfilling the needs of some sectors of the labour market (knowledge management, nursing, etc.).

The second requirement which greatly influenced the development of Czech universities, especially between 2008 and 2011, was the policy which regards the financing, evaluation, and stratification of Czech public universities, defined in the White Paper on Tertiary Education (Matějů, 2009). The economic growth of the Czech Republic paradoxically brought along a substantial decline in the amount of funds given to public universities per student. Some sources even state that between

2006 and 2011, the amount designated for the educational activities at Czech universities decreased by one fifth. Universities were thus forced to respond to that by starting to offer not only attractive and more applicable study programmes and courses, but also by adapting themselves to the labour market needs.

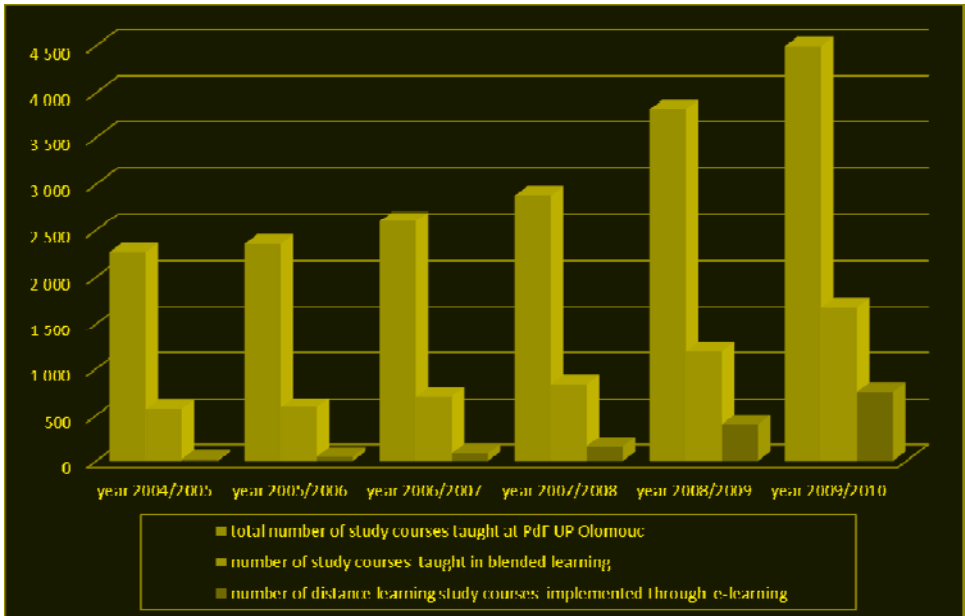
At that point, e-learning became essential at Czech universities, as it was vital for their further operation. It should be noted that the tendencies to maintain the necessary quality of education were not evident. Two important influential factors in particular – the assessment of the teachers' workload and the educational materials quality – were ignored. It was just necessary to have a Learning Management System (LMS) and educational content in it, while the quality aspect was disregarded, mainly due to missing or poorly developed evaluation tools.

## **Case Study Reflecting the Development of E-Learning in University Setting**

The above stated facts are illustrated hereinafter by the example of the Faculty of Education of Palacky University in Olomouc, where training through e-learning was to witness a rapid development from 2005 to 2010. The indicated results can also be supported by the findings of research studies carried out in this field at other Czech universities, which also confirmed an extensive increase in the proportion of training through e-learning (cf. Fox & Česal, 2008; Hampl, Česal, & Vaškovic, 2008). It can thus be said that this is not an isolated phenomenon. From 2005, the Faculty of Education of Palacky University has aimed at supporting activities resulting in the increase in the number of accredited study programmes in blended learning. It was therefore necessary to continuously strengthen the distance component of the blended instruction, in order to comply with the requirements of the Accreditation Commission of the Ministry of Education of the Czech Republic. As an essential software tool for the implementation of distance learning forms across Palacky University in Olomouc, the LMS Unifor system (Klement & Štencl, 2008a) was chosen to be implemented through e-learning (Klement & Štencl, 2008b).

While the finance model for tertiary education had always been closely connected with the number of students, the economic situation of the Czech Republic resulted in a lack of funds to finance a growing number of students. The Ministry of Education thus proceeded to modifying the method of financing schools by gradually decreasing the subventions on students and made them dependent on the scientific output of universities. As a result of this strategy, the nominal value of the subventions designated for students did not increase after 2004 (it actually decreased in relation to the inflation); many universities decided to make their study programmes blended, striving to increase the effectiveness of the learning process in general. Many schools, including the Faculty of Education of the Palacky

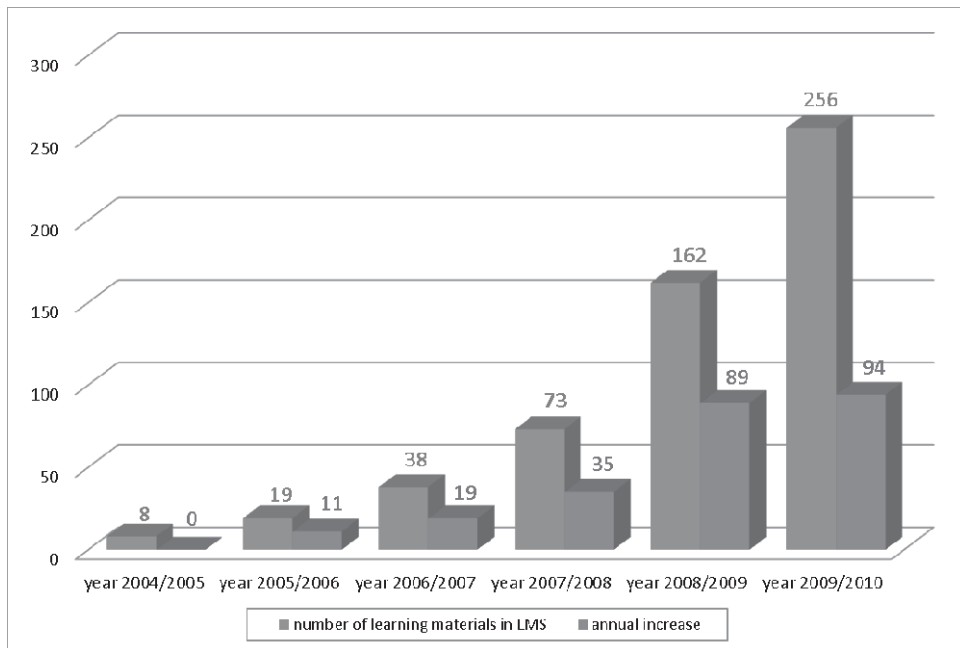
University in Olomouc (hereinafter referred to as PdF UP Olomouc) thus wanted to maximize the effectiveness of learning, with the volume of instruction for students significantly increasing on the one hand, and the volume of work load for teachers stagnating or even declining on the other. PdF UP Olomouc, like many other Czech universities and faculties, attempted to solve the problematic discrepancy between the required increase in the number of students on the one hand, and the decrease in the volume of funds on the other, by applying distance learning principles to all study programmes.



*Graph 1:* Number and structure of study courses taught at PdF UP Olomouc

As Graph 1 clearly shows, the total number of study courses continued to increase each year, due to an increasing teaching load and the introduction of new study programmes. Such an increase could also be identified in blended learning study courses and those that involve distance instruction via e-learning. The principle of implementing distance forms of study exclusively through e-learning at PdF UP Olomouc was used in practice, and since 2006, it has been applied to almost all parts of blended learning. A necessary precondition for the adoption of this concept was the accessibility of a wide range of study materials for students. Another specific feature of the respective concept was that students were able to access materials via the LMS system, which enabled the use of all instruction components pertaining to presentation, management, evaluation, and communication. The adoption of all those systematic measures made it possible to maintain the quality of instruction at a certain level, notwithstanding the ever-deteriorating conditions with regard to the

financing of Czech universities. However, it was necessary to significantly increase the number of available learning materials and to ensure their high quality.



*Graph 2:* Increase in the number of learning materials at Pdf UP Olomouc.

Graph 2 shows the pace and the extent to which the number of educational materials increased within the respective period at Pdf UP Olomouc. In a similarly extensive way, distance education was developed at other universities, faculties, or departments. That was not a unique occurrence but was documented by many researchers (Fox & Česal, 2008; Hampl et al., 2008).

It seems that the development of education supported by LMS and e-learning is successful. But it should be noted that maintenance of high quality e-learning materials is only possible with appropriate assessment and evaluation tools. A widely applicable tool must follow modernization trends, ICT development, as well as distance learning didactics and special didactics principles.

## Current Trends in the Development of Education

As stated above, e-learning is one of instruction methods, which is specific mainly due to the use of multimedia learning materials, also known as e-learning supports (Kopecky, 2010). In order to use the latter effectively, it is necessary to use not only sophisticated LMS systems, but also appropriate learning texts, containing a wide

range of multimedia elements that contribute to the overall effectiveness. That is why the question of defining the content, as well as the structure and application of modern ways of presenting the curriculum, such as multimedia and virtual reality (for example <http://secondlife.cz/>), have become the forefront of Czech and foreign teachers. Furthermore, the issues concerning possible ways of incorporating e-learning into the educational process carried out in companies or at schools are becoming more and more structured.

From that perspective, it is possible to identify several development trends, based primarily on the technical possibilities of today's information and communication technologies. Those have witnessed such a rapid development, both qualitative and quantitative, that it is now possible to use technologies that, only a few years ago, were either financially or personally so challenging that it was very difficult to use them in everyday practice. The technically oriented trends in distance education can be observed in three particular areas.

- A full computerization of distance education. Distance learning in its 'traditional form', based on technically obsolete information transfer or presentation media, is now fully replaced by LMS systems and the Internet, so it can be implemented mainly through e-learning.
- The use of interactive instruction elements by simulating real processes and procedures. The multimedia nature of those elements predetermines them for being used instead of static visual information (pictures, graphs, etc.). Interactive elements are one of the most effective e-learning tools with respect to motivation and illustration, and they enable a continuous or final verification and interpretation of the lectures and lessons, using simulators in many fields of human activity.
- The use of virtual reality as a 'learning' environment capable of creating the atmosphere and climate of an educational institution even in home environment. Virtual reality, or virtual environment, is a technology allowing the users to interact with a simulated environment. The technology of virtual reality creates an illusion of real or imaginary world. Presently, there are dozens of 'virtual worlds', inhabited by tens of millions of people, and there even exist virtual universities as institutions offering distance instruction.

The above mentioned technology trends, resulting from a massive increase of information and communication technologies, are a logical result of a gradual convergence of those technologies and the widest possible group of users. Another group of current development trends is characterized by a purposeful application of some elements of constructivist theories in the form enriched learning strategies or more effective achievement of the set learning objectives, not only in cognitive but also in affective and psychomotor areas.

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Those trends are as follows:

- The use of a wider range of learning strategies. The 'classical' concept of distance education is closely connected to the theory of programmed learning. Programmed learning is a teaching method based on the management of students' learning activities based on behaviourism and neo-behaviourism, and its basic formula being the one of S-R (stimulus-response), in the form of U-Z (learning-reinforcement) (Crowder, 1966).
- However, learning strategies reflect the ideas of constructivism, with the purpose of education defined not only as a transfer of a single truth, as is the case in transmission pedagogy, but as a much more significant challenge, i.e. to equip the recipient of such instruction with the capability of getting through an enormous amount of knowledge to be able to use it properly. Those learning strategies are currently gaining importance, and computers already have the tools to support such activities.

The differentiation between those two groups (behaviourists vs. constructivists) was only possible via a detailed analysis of the theoretical background and foundation of distance education and programmed learning, and their comparison with up-to-date learning theories. As indicated above, distance education is based on certain rules that still reflect the times when the level of science and technology did not indicate future existence of technologies that would allow those boundaries to move into entirely different dimensions.

The so-called 'moral obsolescence' of classical distance education is thus not only the result of a massive growth of information and communication technologies, but also a logical result of the gradual convergence of those technologies with regard to the needs of educational theory and practice. This approximation can be identified especially in the area of the development of 'learning environments' or software products that now facilitate the application of some methods of constructivist pedagogy and cognitive psychology (Grecmanová & Urbanovská, 1997).

## **Technically-Oriented Development Trends and Their Application Within the Framework of Czech University System**

Earlier, we have mentioned some of the trends in the development of distance education within the framework of Czech universities. Based on the analysis carried out, those trends can be specified in terms of their nature, and a synthesis can be performed. The respective trends are recapitulated below.

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## The trend toward the computerization of education

An effective 'learning' environment, often in the form of an LMS system (Long & Jancarik, 2010) is a precondition for the implementation of the educational process through e-learning. Learning environments require hypermedia learning material to fully stimulate learners. The so-called hypermedia learning materials can only be created and presented electronically. Of course, it would be far from reasonable not to use the potential of the existing learning materials, so many authors just upgrade the latter into hypertext enriched with multimedia features. Such multimedia learning materials are then incorporated into the fully computerized 'learning' environment where they can contribute to a higher efficiency and also to better management of studies. Below are a few other notes explaining the above-defined trend.

- LMS systems allow for better organization and management of a student's learning and reduce the delays to a minimum. The student is permanently informed of updates, deadlines or other important facts relevant to distance learning.
- Fully computerized system allows the LMS to develop a variety of communication face-to-face techniques which are important for the development of social skills. Of course, personal contact between a student and his or her tutor is highly desirable as well. The said systems allow inter-human interaction optimization and enable the learner to improve time efficiency of studying.
- LMS systems can provide immediate feedback. In some cases, they can automatically evaluate the results of student's activities. Students' assignments are available immediately after submission, while tutor's assessment is automatically forwarded to students.
- Simulations help to maintain a higher degree of interactivity while working with the study materials, given that interactivity is one of the most important prerequisites for a continuous motivation.
- Electronic hypermedia learning materials facilitate quick editing, and there is no need to spend large sums of money on the production or distribution of modified or updated study materials.
- Electronic hypermedia learning materials, also known as e-learning or electronic learning materials enable a high degree of modularity and mobility of the studies. Modularity stems from appropriate structuring of LMS systems, while mobility is useful on travels, as properly modularized learning materials can be stored in an online or offline form to mobile phones or handheld computers (Dostál & Klement, 2008).

## **The trend toward using interactive teaching elements through simulations of real processes or procedures**

As stated above, learning simulations increase the effectiveness of learning. They can be effective in the specific skills' training and development of psychomotor skills of students. Interactive hypermedia simulations are an important means for activating students. There is indeed a wide range of situations, skills, and methods, where activity is much more effective in learning (Zounek, 2009a, 2009b). Below a few further notes are listed:

- There are many types of simulations that cover a wide range of activities, not only of technical or scientific nature. These simulations can therefore be used in social science or arts disciplines (Eger, 2002).
- The development of training simulations is no longer as demanding as it used to be several years ago. There are numerous development environments susceptible even to less skilled computer users.
- LMS systems are capable of operating such educational objects, and they often comprise specialized modules for their use.

## **The trend toward using virtual reality as a learning environment**

Though being quite obvious, this trend has not made a breakthrough on a large scale yet. It is therefore a highly promising area of computer technology, which, after having overcome a few technical difficulties, can provide the education process with almost unlimited possibilities, independent of space and time in most cases. For the time being, it is possible to make use of certain activities that can be incorporated into e-learning, such as replacing virtual classrooms with virtual simulations (the exception are subjects such as physics, chemistry, biology, and in particular medicine, where smell plays a highly important role). Several Czech universities have already become aware of the above mentioned fact and have consequently set up the so-called virtual booths, as part of the Second Life project (Marešová, 2010). They thus significantly extended the range of training activities pertaining to distance education. Below is a brief summary of further arguments highlighting the importance of those technologies and their potential for the education process.

- It is already possible to integrate some elements of LMS and virtual reality systems.

- The number of users of simulated virtual worlds amounted to several million in 2010, and has witnessed steady annual growth ever since.
- Performance and availability of computer technology and fast data connections have been increasing annually despite the ongoing economic downturn (Dostál & Klement, 2010).
- The potential use of virtual reality in education is almost unlimited and can provide solutions to many problems related to the social dimension or humanization of studies (Marešová, 2010).

To conclude, the above stated trends assume the existence of technical and methodological means and assessment tools susceptible for the application within the education process.

## **Pedagogy-Oriented Development Trends and Their Application Within the Framework of Czech Universities**

Another group of development trends that can currently be observed (Hampel et al., 2008) is characterized by the purposeful application of some elements of constructivist theories, such as the expansion of learning strategies or a more effective achievement of the stated learning objectives, in cognitive as well as psychomotor and affective domains.

### **Application of a wider range of learning styles**

The traditional concept of distance education is based on the behavioural theory of programmed learning, which was gradually being replaced by cognitive theories of learning, which in turn have recently been progressively replaced by the constructivist theory (Clark & Mayer, 2008). The main presentation element of a distance learning curriculum, that is, multimedia learning materials which were originally printed, but which today appear in the form of hypertext and multimedia, has however never been possible to overcome a certain level of learning. The fact leads to a conclusion that advanced technologies enable the use of procedures and learning methods that better fit the personal traits of students and thus make the study process more efficient and rewarding for them. Find below the propositions that confirm the above stated conclusions.

- Cognitive processes applied in multimedia-based distance education which uses communication technology (television, radio, DVD, CD-ROM) for educational content presentation and distribution enable lower as well as higher

involvement of intellectual processes, but even in this way, the applicability of learning strategies is limited.

- Hypermedia distance learning based on the constructivist learning approach, consisting in using hypertext and multimedia elements as well as advanced electronic 'learning' environments in the form of LMS systems, allows higher involvement. Most students can thus apply a wide range of learning strategies and thereby increase the efficiency and the output level of the whole education process.

## **Trend toward a more efficient achievement of learning objectives**

Presently, the possibility of using simulation and virtualization can be a very effective way towards achieving educational goals (see Bloom taxonomy) which include cognitive as well as affective and psychomotor goals. However, the use of such modern technologies requires a fully computerized system of study, with instruction being carried out by means of e-learning and hypermedia content being incorporated in the LMS system. Once again, we provide a few arguments that make us believe that the above outlined trend stems not only from the demands of the education process, but also reflects contemporary psychological and psychological theories dealing with the learning process.

- The use of printed study materials within the framework of correspondence or multimedia forms of distance learning allows the achievement of predominantly cognitive educational goals, as stated hereinabove. This is mainly due to the fact that it is very difficult to develop psychomotor and affective skills of students solely by means of text instructions and guidelines.
  - The use of hypermedia learning materials ensures a high degree of interactivity between students and the content. Those materials and multimedia elements facilitate manipulation with computer reality or simulation of certain processes which may be affected by students themselves. Consequently, it is possible to reach a much wider range of learning objectives, which in turn can help develop a wide range of students' competencies. All the above stated can be achieved also through e-learning.
  - To be objective, it is necessary to ask ourselves which of the above stated trends are merely a reflection of time, and thus respond to some external influences that do not influence the very course and outcomes of the learning process, and which ones, on the other hand, are really based on the deep-rooted necessity to develop education both in terms of quality and efficiency.
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## Conclusion

Based on the assumptions stated at the beginning, this study focused on the conditions under which e-learning generally takes place and the methods of its implementation. This view facilitated a comparison regarding the development of particular learning theories and the application of the latter in terms of both distance and computer-aided teaching.

At various stages of its development, distance education reflected contemporary learning theories, e.g. programmed learning reflected behaviourism, while technological theories reflected cognitivism. The impact of the constructivist theories on e-learning is recognised in particular in contemporary 'hypermediality' and 'interactivity'. Those theories were compared not only to the general principles of distance education, but also to the real possibilities of using information and communication technologies.

Based on the analysis and comparison of the outcomes it was possible to elaborate the basic principles of distance education, which should be added a new principle of interactivity that might be one of the prerequisites for an effective learning and a means of achieving wider set of learning objectives. The latter can nowadays be provided through the use of educational simulations and virtual reality. This principle allows a long-term development of e-learning, based on consistent application of new knowledge in the fields of pedagogy and psychology. Interactivity is an important factor influencing the efficiency as well as the outcome of education, not only in terms of theoretical development, but also in terms of experience and the needs of the recipients of this type of education. The principle of interactivity in such an 'upgraded' concept includes not only the communication component, but emphasizes the component of students' manipulation of the learning content, presented also by modern learning simulations or virtual reality. The application of this principle enables the achievement of a wider set of learning objectives, not only in the cognitive, but above all in the affective and psychomotor areas.

The research study proved that it was desirable to revise the current interpretation of one of the fundamental principles of the traditional concept of distance education, i.e. the principle of multimodality. The respective principle was once regarded as suitable for the application of a wide range of transmission media intended for the presentation of distance education curriculum. It stemmed from the assumed necessity to ensure the transfer of the curriculum to the student via as many channels as possible, but did not accept the fact that those channels should transmit the same information content, thus stimulating more elements of a student's perception. This method of presenting the subject matter was mainly reflected in the fact that it was only possible to achieve cognitive educational objectives, which substantially limited the range of usable learning strategies. Based on the analyses—

both theoretical and empirical—which were carried out, it is possible to argue that the said perception of the multimediality principle no longer corresponds to the current level of knowledge, so its contents should be reconsidered. However, in terms of e-learning, only one transmission medium, namely the Internet, is suitable and capable of stimulating more elements of students' perception at the same time. It enables the teacher to present one piece of information simultaneously as text, static image element, dynamic visual element, audiovisual recording, or even as any combination of these, in a way that students are not faced with information overload. That approach to the concept of multimediality, in terms of training implemented through e-learning, is a necessary precondition for an effective implementation of the latter. Multimediality can thus be understood as a means to stimulate multiple components of the student's perception, not only as transmission of information via multiple media. That application is of major importance for e-learning, and facilitates the development of a wider range of learning strategies.

The necessity of lifelong learning has been declared and considered as substantial for further development of every society. Information and communication technologies can be of great help, as formerly used means of curriculum presentation would make it difficult to ensure effective learning in contemporary conditions, even with regard to full-time study modes. There are a number of important questions and issues subject to further study and discussion. The present study put forward and analyzed selected contemporary problems regarding the use of information and communication technologies in e-learning.

## **DALJŠI POVZETEK**

V zadnjih nekaj letih je e-učenje postalo sestavni del sistema terciarnega izobraževanja, ne le v okviru kombiniranih oblik študija, temveč tudi in predvsem v okviru rednega načina študija, ki je akreditiran in se izvaja na čeških univerzah. Pravzaprav obstaja mnogo zunanjih ter notranjih dejavnikov vpliva, ki delujejo bolj ali manj prikrito ter bolj ali manj intenzivno. Priporočljivo je, da se ti dejavniki prepoznajo, opišejo, analizirajo ter da se minimizira ali maksimira njihov vpliv, da bi s tem preprečili njihov vsesplošni negativni učinek na kakovost terciarnega izobraževanja, ki ga pogojujejo tudi »modni trendi«.

Z retrospektivnega vidika je mogoče opredeliti in opisati obstoj dveh pojavov, s katerima se češko terciarno izobraževanje srečuje že od leta 2005. Prvi je nenehno prizadevanje za »poenotenje« visokošolskega izobraževanja znotraj Evropske unije, drugi pa pogosto obravnavano vprašanje financiranja češkega terciarnega izobraževanja, vključno z znanostjo in raziskovanjem. Oba pojava sta bistveno vplivala na trend razvoja terciarnega izobraževanja. Univerze so bile primorane sprejeti ustrezne ukrepe za optimizacijo, da ne bi ogrozile kakovosti terciarnega

izobraževanja na vseh ravneh, hkrati pa so morale tudi napredovati in razvijati posamezne znanstvene discipline.

Na podlagi teh zunanjih vplivov so številne šole začele intenzivno pripravljati, razvijati in ponujati programe izrednega študija, ki so se v preteklosti izvajali le kot redni študij, saj je bilo takrat število študentov (ne glede na način študija) eden tistih dejavnikov, ki so najbolj vplivali na financiranje izobraževalnih ustanov na terciarni ravni. Če so te šole torej želele ohraniti kakovost in obseg zagotavljenega usposabljanja, so nadaljevale z akreditacijo in uvedbo kombiniranih oblik študija, ki so se že v preteklosti izkazale kot uspešne in to ne samo na Češkem. S tem je e-učenje na čeških univerzah postalo ena bistvenih dejavnosti, saj je bilo ključnega pomena za njihovo nadaljnje delovanje. Poudariti je treba, da težnje po ohranjanju potrebne kakovosti izobraževanja niso bile vedno očitne. Še najbolj so bila prezrta nekatera pomembna dejstva glede načinov ocenjevanja pedagoških obveznosti ter kakovosti študijskih besedil, ki so zato poniknila v ozadje. Potrebno je bilo imeti »sistem LMS in izobraževalne vsebine v njem«, kakovost pa ni bila upoštevana, in sicer predvsem zaradi manjkajočih ali slabo razvitih orodij za ocenjevanje.

Navedena dejstva so prikazana v prispevku na primeru Pedagoške fakultete Univerze Palacky v Olomoucu, kjer je izobraževanje s pomočjo e-učenja doživljalo hiter razvoj v obdobju med letoma 2005 in 2010. Navedene rezultate je mogoče podpreti tudi z ugotovitvami raziskovalnih projektov, ki so jih na tem področju izvedle druge češke univerze in ki so potrdili obsežno povečanje usposabljanja s pomočjo e-učenja. Zato je mogoče trditi, da to ni osamljen pojav. Čeprav za nazaj lahko rečemo, da se je razvoj izobraževanja na osnovi LMS in e-učenja v okviru terciarnega izobraževanja izkazal za uspešnega, ne smemo pozabiti, da je kakovost na zahtevanem nivoju mogoče ohraniti le pod pogojem, da obstajajo ustrezna orodja za ocenjevanje in vrednotenje. Široko uporabno orodje mora biti rezultat trendov modernizacije, ki jih je mogoče prepoznati na področju programov študija na daljavo.

S tega vidika je mogoče določiti več razvojnih trendov, ki temeljijo predvsem na tehničnih zmožnostih sodobnih informacijsko-komunikacijskih tehnologij. Te so bile priča tako hitremu razvoju, tako kvalitativnemu kot tudi kvantitativnemu, da je sedaj mogoče uporabljati tehnologije, ki so bile pred le nekaj leti bodisi s finančnega bodisi z osebnega vidika tako zahtevne, da jih je bilo zelo težko prenesti v vsakdanjo prakso. Te tehnično usmerjene trende v izobraževanju na daljavo je mogoče opaziti predvsem na treh področjih, ki so podrobneje razčlenjena v našem prispevku.

Glede na izvedene analize in raziskave je mogoče ugotoviti, da tako imenovana »moralna zastarelost« klasičnega izobraževanja na daljavo ni le posledica velikega razmaha informacijsko-komunikacijskih tehnologij, temveč

je tudi logična posledica postopne konvergence teh tehnologij s potrebami vzgojno-izobraževalne teorije in prakse. To približevanje je še posebej vidno na področju razvoja t. i. učnih okolij ali programske opreme, ki olajšajo uporabo nekaterih metod konstruktivistične pedagogike in kognitivne psihologije, ne le v okviru dodiplomskega študija, ampak tudi vseživljenjskega učenja. Nujnost vseživljenjskega učenja velja za bistven element nadaljnega razvoja vsake družbe. Informacijsko-komunikacijske tehnologije lahko pri tem veliko pripomorejo, saj bi v preteklosti rabljen način predstavitve učnega načrta v sodobnih razmerah le težko zagotavljal učinkovito učenje celo pri rednih oblikah študija. Obstaja več pomembnih problemov in vprašanj, ki so predmet nadaljnjih študij in razprav. Naša študija predstavlja in analizira izbrane sodobne probleme v zvezi z uporabo informacijsko-komunikacijskih tehnologij pri izobraževanju s pomočjo e-učenja.

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