

# Selected aspects of e-learning in educational process

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## Abstract

The influence of the development of information and communication technologies and the emergence of „the information society“ is changing a look of the current education and its importance. The emphasis is on the need for lifelong learning, which is determined by development of the company. E-learning is seen as a new approach to teaching, which use information- and communication- technologies. The development of these technologies is currently rapidly and so also the e-learning process is constantly upgraded. In our paper we deal with LMS Moodle, which represents one of the forms of e-learning in higher education. At the same time, we look at its use in high schools in Slovakia.

**Key words:** E-learning, education, modernization, LMS Moodle.

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## 1. BASIC CHARACTERISTICS OF E-LEARNING

In defining this concept we can come across on the disparity of terminology. This is due to the continuous development and also trying to find the best naming. In general, we can say that e-learning is a constantly changing system, which changes its form, scope and services offered.

Understanding this concept is far different in the US and in Europe. Liu and Wang (2009) summarize the concepts and definitions of western and eastern (China) e-learning to the following characteristics:

- e-learning is learning primarily based on the Internet,
- information is disseminated in the form of courses available on the network,
- it is possible a worldwide distribution and sharing of learning resources,
- it created a virtual learning environment,
- e-learning is one of the methods of study,
- learning is flexible (anytime, anywhere).

These characteristics of e-learning are shown in fig. 1.

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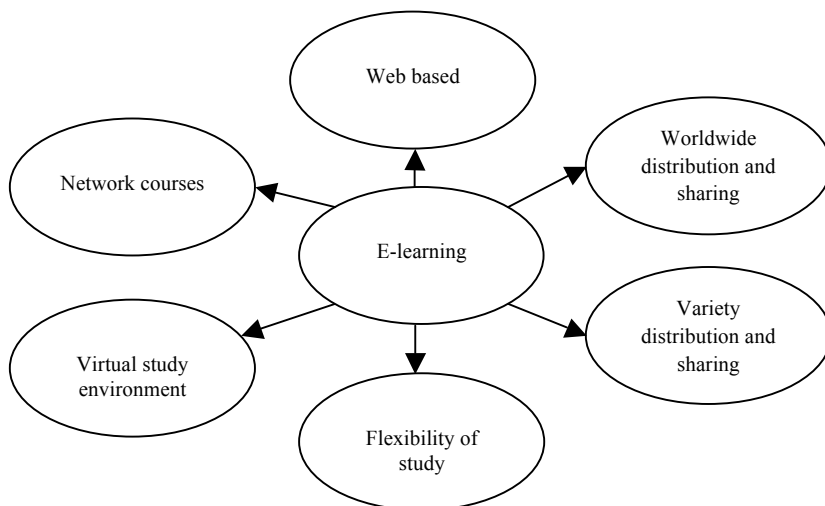


Fig. 1 The characteristics of e-learning  
Source: Liu and Wang, 2009

Kopecky and Vejvodová (2006) understanding the e-learning as any use of electronic material and didactic means to the effective achievement of educational goals (it is carried out, in particular, not only through computer networks). According to Wagner (2005) is e-learning an educational process, which uses information and communication technologies to the development of courses, to distribute course content between students and educators, and to the management of the study. This definition very aptly describes the concept and idea of e-learning.

E-learning in its present form did not exist in the past. The development of e-learning can be divided into several stages:

**CBT** (Computer Based Training) – education with the support of computers. This is the teaching without the use of the Internet. Teaching aids and materials are mostly found on the optical media, as DVDs or CDs (various animations, presentations, text, images, video and audio records, etc). This method is suitable for exercises or to verify knowledge

**WBT** (Web Based Training) – education with the support of web technologies. Education is carried out through the Internet. They created „virtual class“, in which communicate tutor and student. On the Internet are accessible teaching materials, that student has to handle. Also included are links that refer to the additional information.

**LMS** (Learning Management System) – system of the management of teaching. It is a system of teaching with is using web applications. It is made up of a set of tools for communication, study management, like discussion forum and also makes available to students a teaching materials.

**LCMS** (Learning Content Management System) – system tool that is used to create or to the formulation of learning content. Unlike LMS LCMS allows you to combine different educational content already on the lowest levels, create your own training courses, interfere with educational content, etc. (Kopecký, Vejvodová, 2006).

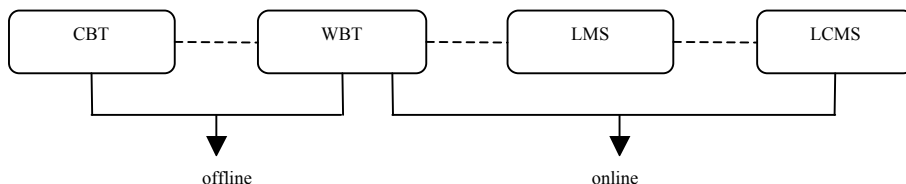
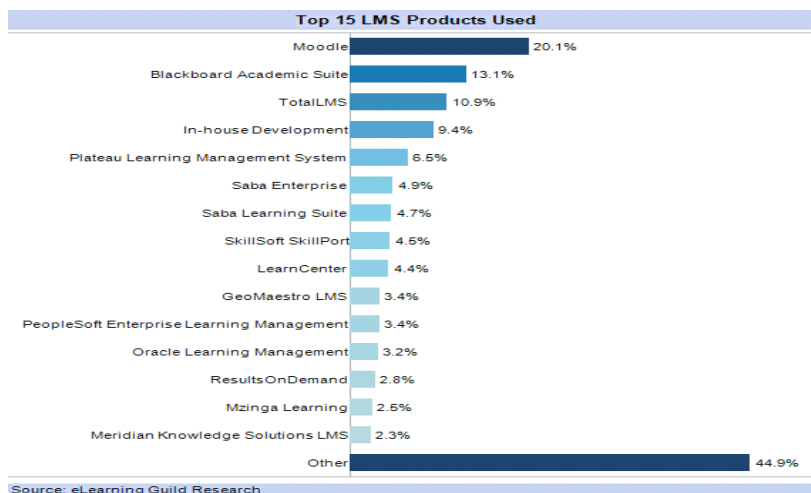


Fig. 2 The development of forms of e-learning  
Source: Kopecký, Vejvodová, 2006, p. 125

**Blended learning** – form of education based on a combination of e-learning and classical forms of teaching. It is about the integration of electronic resources in order to increase the potential of information and communication technologies, which is implemented together with the best methods of teaching. Basically it's a combination of classical college lectures with an electronic support.

## 2. LMS MOODLE

Learning Management System – learning management system is currently the most widely used for supporting electronic forms of learning (well-defined online courses are a necessary condition) [8]. First version of e-learning environment Moodle was released on 02.20.2002 (Martin Dougiamas's birthday – founder). Moodle system belongs to the TOP 15 of most used learning management systems. It is rated as the most used between individual brands (graph 1).



Graph 1: LMS product usage, including education  
Source: <http://www.learningsolutionsmag.com/articles/111/>

There are many systems, from simple to extensive and complex, from academic to commercial and there are also large open-source applications. The Open-source category presents Moodle – Modular Object-Oriented Dynamic Learning Environment.

The Moodle system is a software package, which is available on the internet. It is provided free of charge as open source software (GNU Public License). Among the features of Moodle include modules, from which we can compile its content. Standard modules are study materials, discussion forums, automatically evaluated tests, dictionaries, databases and surveys.

### **3. USE OF E-LEARNING IN HIGHER EDUCATION**

In highest education practice may be encountered with the use of e-learning portals for more than 10 years. The most used software solution is the LMS Moodle, whose main advantage is the possibility of its free distribution. Despite this option, this tool was used in 2010 by twelve of the 33 high schools in Slovakia [7]. The website Moodle.org currently keeps track 208 e-learning portals in Slovakia, 1528 portals in Poland, 337 portals in Hungary and in the Czech Republic is registered 674 portals [4]. These numbers point to a different degree of implementation of Moodle in educational process. On the basis of these numbers we can see that at least is a e-learning used in Slovakia, it is most used in Poland.

In Slovakia, the highest degree of coverage of the individual courses or subjects has Faculty of chemical and food technology (Slovak University of Technology in Bratislava) and Institute of public policy and economics (Faculty of social and economic sciences, Comenius University in Bratislava). The high study coverage of the e-learning portal has Faculty of Educations (University of Prešov in Prešov), which has 391 courses broken down by individual study years and semesters.

For the improvement of the status of the use of e-learning these institutions (Faculty of chemical and food technology - Slovak University of Technology in Bratislava, Institute of public policy and economics - Faculty of social and economic sciences, Comenius University in Bratislava) implemented in 2010 survey in order to identify the status of the use of e-learning. The main objective of this research was the identification of relevant e-learning sites, which have been used in Slovakia in education and private sector. The target group was also students and teachers using e-learning in higher education. Through the e-questionnaire were contacted students, who studied public policy (Institute of public policy and economics). The aim of the survey was to identify the needs of the student in relation to the functioning of the e-learning portal with the aim of improving its functioning.

One of the biggest advantages of e-learning students included the availability of teaching materials, the rapid availability of results or important deadlines, improved orientation in study and easy communication with educators. Among the disadvantages students most frequently mentioned impersonal access, weak technical support system, excessive complexity of the system, the lack of literacy educators and poorly specified roles of educators [7].

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## References

1. Khan, B. H. 2006. *E-learning - Osem demenzií otvoreného, flexibilného a distribuovaného e-learningového prostredia*. Nitra: Slovenská poľnohospodárska univerzita. ISBN 80-8069-677-2.
2. Kopecký, K. a J. Vejvodová. 2006. *E-learning (nejen) pro pedagogy: praktický průvodce výukou v prezenční a distanční formě studia*. 1. vyd. Olomouc: HANEX. ISBN 80-857-8350-9.
3. Liu, Y. a H. Wang. 2009. *A comparative study on e-learning technologies and products: from the East the West*. System Research and Behavioral Science, Volume 26(2): pp. 191-209. March/April 2009
4. Registered Moodle sites. [online] [cit. 25. 2. 2014]. Dostupné z: <https://moodle.org/sites/>
5. Švejda, G. a kol. 2006. *Vybrané kapitoly z tvorby e-learningových kurzov*. Nitra: PF Univerzity Konštantína Filozofa. ISBN 80-8050-989-1. [online] [cit. 23. 2. 2014]. Dostupné z: : [https://edu.ukf.sk/file.php/1/files/moodle\\_tvorba\\_kurzov\\_UKF\\_Nitra.pdf](https://edu.ukf.sk/file.php/1/files/moodle_tvorba_kurzov_UKF_Nitra.pdf)
6. TOP 15 LMS Products used [online] [cit. 23. 2. 2014]. Dostupné z <http://www.learningsolutionsmag.com/articles/111/>
7. Výskum potrieb a možností online vzdelávania v stredoeurópskom kontexte a riešení vývoja softvérového prototypu. Bratislava: Univerzita Komenského v Bratislave. [online] 2010 [cit. 25. 2. 2014]. Dostupné z: <http://www.fses.uniba.sk/index.php?id=5575>
8. Zounek, J. a P. Sudický. 2012. *E-learning. Učení (se) s online technologiemi*. Praha: Wolters Kluwer. ISBN 978-80-7357-903-6.
9. Wagner, J. 2004. *Nebojme sa e-learningu*. [online] [cit. 25.2. 2014]. Dostupné z: <http://www.ceskaskola.cz/2004/06/jan-wagner-nebojme-se-e-learningu.html>