E-LEARNING AS A SUPPORTIVE FORM OF EDUCATION AT UNIVERSITIES

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Abstract

The paper presents new approaches to the use of ICT in education at universities. E-Learning is expanding worldwide and is a form of learning that is really effective. The success of this education is due to interesting and modern e-learning courses for students that will interest them from the beginning of the course to the end. Students are so busy with school, personal life and work that learning through e-Learning will certainly appreciate. It is known from analyses of used systems abroad that Moodle and Blackboard are the most used e-Learning systems. Moodle is the preferred higher education system in Europe and Slovak universities use this system at different levels. University of Zilina and Slovak University of Technology in Bratislava have high-level of e-Learning. The Moodle system used by the University of Zilina is integrated into the education system. The paper presents suggestions for more effective use of e-Learning, which are based on the survey conducted among students and on the examination of the system too. We suggested that teachers use a variety of activities offered by the system to improve teaching. By using the latest version, there are additional benefits that will simplify the work of students.

Keywords: e-Learning, e-Learning systems, teaching, university students.

1 INTRODUCTION

There are currently looking for ways of learning that are spatially flexible, simple and faster. Such an option is just e-learning, which is interesting and modern, but classical education is still used today. E-learning can be combined with classical learning. Learning through e-learning becomes more effective, engaging. The student then has more motivation to study.

Education is not just the process in which knowledge is acquired, but it also includes other functions that are supported, complemented and co-operated in education. These functions are pedagogical and social. From a pedagogical point of view, there is a professional function that prepares a student for a future profession and a socialization that puts the student into society. From a social point of view, for example, it is an instrumental function that says that education is the basis for further education. It also has an educational function that says that an individual is educated by education. [1]

E-learning encompasses both theory and research, as well as any real learning process in which information-communication technologies that work with data in electronic form are used in accordance with ethical principles. How to use ICT resources and the availability of teaching materials. They depend mainly on educational objectives and content, the nature of the learning environment, the needs and opportunities of all participants in the learning process.

The paper describes e-learning environment and e-learning system Moodle. Consequently, the student benefits from using Moodle are presented. A survey focused on the use of e-learning by students of the University of Zilina was carried out. We also present a proposal for streamlining education for students through e-learning, which was formulated from survey results, by examining the e-learning environment and the system.

2 METHODOLOGY

Based on the study of domestic and foreign sources, the analysis of the issue was elaborated. We used secondary research to investigate the current state of e-learning and its application and the level of use of e-learning at universities in Slovakia. The researched object was the environment of e-learning at the University of Zilina from the perspective of the student and some of the activities for teachers to improve the quality of e-learning support for education were also partly proposed. The primary survey is focused on the level of e-learning through learning.
Method of questioning was used to collect the data. The survey was conducted through electronic query in Google Forms. The questionnaire was sent to students by social networks. In its evaluation, we applied the method of interpretation. We used Microsoft Excel for data processing. To obtain more information from students, we conducted a primary survey, which we divided into two parts, the preparatory phase and the implementation phase.

The base file range is less than 100,000, so a relationship was used to calculate the sample size:

\[ n \geq \frac{N \cdot t_1^{-2} \cdot \frac{\sigma^2}{(N-1)} + t_2^{-2} \cdot \sigma^2}{\Delta^2} \]

and \( \sigma = \sqrt{p \cdot (1-p)} \)

where:
- \( n \) - minimum sample size (minimum number of respondents),
- \( t_{1-\alpha/2} \) - critical value determined from tables,
- \( \sigma^2 \) - variance calculated from standard deviation,
- \( p \) - basic file variability (character share),
- \( \Delta \) - maximum allowable margin of error.

In the survey, it surveyed 180 students (minimum contribution amount is calculated by the number of respondents to 148 at 95% strength and the reliability of the estimate of 5% deviation of sampling).

3 RESULTS

3.1 E-learning and its positive and negative aspects

The advantage for the student is a higher teaching efficiency and a higher ability to test knowledge. Users can study at any time using e-learning, both at home and at work. Individual access to the user is that the subscriber is no longer inactive. The teacher is no longer interested in the subject matter but on the requirements of the students who choose the study materials that suit them. Students have access to up-to-date information and are easier to find, absorb, and remember. The advantage is that the student increases his or her computer literacy. [2]

The advantage for the teachers is that they can find many available study materials that can be included in his / her teaching with minor modifications. Information is easily updated, supplemented and stored. Teachers can use technology to support and develop student knowledge. A big positive is the support for communication and the opportunity to invite an expert to a virtual learning process. Teachers can communicate with each other and continue to learn. [2]

One of the disadvantages for a student is that they must have access to the Internet and to certain hardware. The problem may also be a lack of computer literacy and a rejection of technology. The student is not self-educated and less motivated to study. When a teacher is not available, the student can feel insecure, helpless and lonely. Another negative is the student's overwhelming amount of information. The problem is also the health problems that arise from sitting at the computer and cheating users. [3]

A more advantageous form of e-learning is synchronous learning. Teachers with students can communicate live and answer students instantly. We cannot say that there are pluses and minuses of e-learning that are generally valid. At the same time, advantages can also be disadvantages. A significant advantage of e-learning is the ability to study anywhere, anytime, also to find information easily and to access study materials. [4]

LMS - (Learning Management System) - web technologies are used in this form of teaching. This system should be able to combine various online communication tools and study management tools such as: chats, discussion forums, electronic boards, bulletin boards, and so on. The study material is accessible in electronic environment via the Internet. Tasks assigned by the teacher are evaluated together with the students after they have been developed by the students. Mutual multidirectional communication between all stakeholders is taking place. [5]

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LMS is today the most used environment for teaching courses and e-learning support, creating academic or commercial training. There are a large number of systems that have a commercial solution or an open-source solution. [6]

Moodle is a dynamic learning environment that is modular object-oriented. Moodle as a system can be taken as a software package that serves primarily to support combined, distance and on-site learning using available e-learning courses using an Internet browser. [7], [8] Current Moodle server and web technologies use and do not require unusual computer skills from users. A simple computer that is connected to the Internet is enough for the user to work on it. Through this, several aspects of teaching can be managed and the content of education (e-learning courses) simply created. [9]

LMS Moodle enables the teacher to create an effective electronic form of presented data through a web interface, which can be edited graphically and variously structured text. [10] Universities using the system include the Slovak University of Technology in Bratislava and the University of Žilina. [11]

3.2 E-learning at university

University of Zilina has its own e-learning academic information system. Part of the university's integrated system is a system for promoting e-learning. E-learning subsystems are integrated with each other via the university intranet. The system uses data that are uniform and common data databases. Data functions control system functions, database change of data causes system change of behavior. System architecture has three layers [12]

At the University of Zilina, the e-learning system consists of two special circuits that use one data base together. The first circuit includes information on smart cards, student information, features for maintaining and updating student information, information on study plans and programs, statistics, and report printing.

The second e-learning support area includes features and data such as LMS Moodle entry, deadlines and exam enrollments, subject assessment, schedule processing, publication of learning outcomes, and access to study materials. [13]

University e-learning users are:

- Students - after enrollment they have access to enrolled subjects, their results in a given year via password. They have the opportunity to sign up for exams, evaluate subjects and enter LMS.
- Teachers - the teacher has access to his / her folder via password. The teacher enters the LMS, where he / she makes information available to students. The teacher has access to the enrollment system, LMS, and student assessment of the subject.
- Study Officers - are tasked with submitting study results, enrolling students to a higher grade, keeping records of personal data and others.
- Management - the ability of managers to obtain information about the use of the e-learning system.
- Operators - provide system functionality, collaborate with system users, and send information about system fulfillment, etc. [12]

University of Zilina uses one of the free open source non-commercial LMS systems - the LMS Moodle system. This system is a dynamic learning environment that supports "face to face" learning in a classic environment. It enables education through online on-line courses and focuses on distance learning on the Internet. [13] University is currently using Moodle version 3.3.

3.3 Survey results

Several questions were asked, and the answers to a few of them are discussed below. In addition to identifying questions, the question was how often they use e-learning to determine the intensity of e-learning use by students. This question was answered by 50.3% of respondents that they use e-learning daily and 38.1% use e-learning once a week - Fig. 1.
A small proportion of respondents stated the reasons for not using e-learning. Respondents who answered in the negative stated the reason for not using it - Fig. 2.

Most respondents, specifically 37.5%, prefer a classic, full-time form of education. The second most common response was that 20.8% of respondents cannot use e-learning and do not need to use it. Other responses are shown in Fig. 2.

The respondents were asked which e-learning tools they were using (they could mark multiple answers). Most respondents reported sign up for the exam tool (91.6%). In addition, 91.0% of the respondents reported the semester timetable tool and 90.3% reported the study outcomes tool. These tools are most represented by percent. Other responses are shown in Fig. 3.
72.9% of respondents said they would support the learning of foreign languages by e-learning and the remaining 27.1% answered this question negatively. The question of how foreign language teaching was supported by e-learning was answered by respondents who answered positively in the previous question – Figure 4.

In particular, 78.6% of respondents said that foreign language teaching was supported by e-learning material and 45.2% responded that Moodle was available. 40.5% of respondents responded to the possibility that the teaching was supported by Moodle testing - the results in Fig. 4

When asked what equipment is most commonly used by students to access e-learning, 62% said they used PC or laptop to access e-learning, with 37.4% of respondents using Smartphones. In the next question, respondents answered whether they thought e-learning was helping to achieve better learning outcomes. This question has been formulated using the scale presented in Fig. 5.
The question of 27.7% of respondents probably answered yes and 27.1% of respondents were unable to decide whether e-learning improves study results. Other responses are shown in Figure 5. Students have suggested some ways to make education more effective, such as more e-learning material, online lectures, better clarity, system layout, better display on mobile devices, etc.

4 CONCLUSIONS

Improvements in e-learning for students have been proposed by reviewing the survey results and exploring the environment. Teachers should be better informed about all the activities in Moodle and on their contribution to education and greater use of these activities. Chat is also an appropriate activity to engage in education so that the student can discuss with the teacher in real time. The student would answer his question immediately, thus improving the quality of his education.

It is also good to use quiz activity, where a student can practice the issue through tests and in case of mistakes, study the correct answer. In the survey, students stated that they would like to practice before a given test, which could be done using this activity. In the wiki activity where the teacher makes the website available, students can get more information about the subject and the different points of interest, thereby improving their learning outcomes. Activity testing that makes it easier for teachers to evaluate, but the student knows as soon as the test is over.

The university does not have a new version of Moodle, which would make it easier to find and simplify navigation around courses. In the event that the UniApps application is not used, students can download the Moodle Mobile app to simplify access to their smartphone. E-learning is expanding worldwide and is a form of education that is really effective. The success of this education is due to interesting and modern e-learning courses for students that will interest them from the beginning of the course to the end. The Moodle system used by the University of Zilina is integrated into the education system. This university is currently using outdated Moodle version 3.3. The teachers used several activities offered by the Moodle system, thus improving the quality of teaching for students. By using the latest version, there are additional benefits that will simplify student learning, including by downloading Moodle Mobile.

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REFERENCES


