

## E-learning in Higher Education through E-learning center

Zoran Zdravev MSc<sup>1</sup>, Gorgi Dimov MSc<sup>1</sup>, Silvana Krsteva<sup>1</sup>

<sup>1</sup>E-Learning Centre, Goce Delchev University

Stip, Republic of Macedonia

### ABSTRACT

Today E-learning has become the key to a profound revolution in learning. This is because E-learning can offer the most flexible and effective learning approach. The university "Goce Delchev" - Stip is a leading institution in the implementation of new technologies in education in Macedonia. In order to gain an understanding of the current situation in Macedonian universities, this paper highlights the broad spectrum of E-learning practice and activity occurring today at University "Goce Delchev" in Stip. All activities are conducted through the E-learning center, which directs, supports and coordinates all of these activities. The key benefits, derived from the successful integration of E-learning within the wider learning practices of a university, are explored, too. The paper concludes by outlining the challenges and opportunities for E-learning, and raises the issue of how collaborative action could benefit the universities in Macedonia.

### I. INTRODUCTION

The presence of informational communicational technology in education has brought significant changes in the learning – teaching process. E-learning is attaining significance in this Internet world due to the obvious advantages of anywhere anytime learning, to reach the unreachable. Nowadays, most of the effort in the area of e-learning are directed towards the educational use of ICT at all levels in the Educations system. In the last two decades, the constant imperative of teachers and professors was to introduce the use of ICT in the educational process. For this purpose, at all levels of education various projects are implemented to integrate ICT in teaching. In the Republic of Macedonia, this process is especially emphasized in the last 5-6 years, through the implementation of several projects of national interest. These projects are funded by USAID, European Council and Ministry of Education and Science of Republic of Macedonia. Some of these projects were implemented through the Faculty of Pedagogy in Stip, and from 2007 through the University "Goce Delchev"-Stip (University "Goce Delchev" was founded in 2007 and the Faculty of Pedagogy was joined at the University since the date of its establishment).

Also an important point to single out with the foundation of the University "Goce Delchev" is the preferential role that ICT won at the beginning of its work. The project "Implementation of LMS in teaching was organized as a part of the ICT implementation activities at the University, which was partly supported by the European Commission (through TEMPUS project) and Fulbright Foundation.

As a result of this project in September 2008 the E-learning center has been established in order to introduce modern forms of learning at the university, new technologies (interactive whiteboards, graphic whiteboards, multimedia software and hardware, audio-visual equipment), as well as training for teachers and students from universities and schools in Macedonia and abroad. The realization of these projects through the E-Learning Center at the University "Goce Delchev" made it a leading institution in our region in the implementation of new technologies in education.

### II. CONDITIONS FOR EQUIPMENT AND APPLICATION OF ICT IN HIGHER EDUCATIONS

It is evident that a wide access to learning through E-Learning is gaining significance and becomes essential for the survival in this new, continually changing world in any profession and in any discipline. Information communicational technology (ICT) has a main role in maintaining the quality in Higher Education in Macedonia and it will be a basis for competitive advantages of the universities in the future.

In the past period (2000 – 2005) all universities in Macedonia were very modestly equipped with ICT. As an example, is taken the Faculty of Pedagogy in Stip. In 2005 there was a laboratory with 12 PCs of type 486 (the current type Pentium 4"), acquired in 1996. In each cabinet, 2 or 3 teachers had a "Pentium 3" computer and several laser printers for the entire faculty. The best computers were installed in the accounting and student services. There was no organized maintenance of computers. There was no laptop computer and there was only one LCD projector that was used accidentally. Teachers were not happy with this situation and they constantly looked for ways to improve it. Generally, known problems that emerged here were: a lack of equipment, insufficient training for using of the equipment, a lack of digital resources for using in education and so on. At present, most of these problems are solved and with the implementation of the projects this situation is dramatically changed.

The project "Creative Teaching and Learning" lasted from October 2002 to December 2009 and it was implemented in three phases, with a total budget of about 3.5 million dollars provided by USAID.

In the second phase (from July 2005 to September 2008) 11 teachers from the state pedagogical Faculties in the Republic of Macedonia were included, 5 of which were from our University. The following activities were realized as part of this important project:

- Two ten-day intensive trainings "Teaching and Learning with Technology", with instructors from George Mason University, Washington, the USA (Tetovo and Ohrid in August 2005, January 2006)
- A study visit to London, the UK, workshops involving visits to schools and universities that have shown positive results in the use of ICT in the teaching process (November 2005)
- Reconstruction and providing laboratories and classrooms with suitable equipment (\$ 70,000 spent, Summer 2006)
- Dissemination of experience gained through mandatory workshops, each teacher at the Faculty of Pedagogy (Sept-Oct 2006)

In the second part of the second phase of this project all teachers from the pedagogical Faculties during 2007 and 2008 were included, and more workshops and training sessions were organized, which were not directly related to the integration of ICT in teaching process.

The second project, titled "Integrating E-Learning across the Teacher Curriculum" was within the TEMPUS program of the European Commission. It was launched in October 2006 and lasted until September 2009. The value of the project was about 480,000.00 Euro. The holder of the project was the Faculty of Pedagogy, Stip, and the project included two other state Faculties of Pedagogy from Skopje and Bitola, as well as teachers from the Teacher's Faculty from SEE University in Tetovo. The EU Partners of the project were from the University of Groningen, University of Edinburgh and Catholic University of Leuven. Important activities implemented within this project were:

- A study visit in Groningen and Leuven, organized as short courses and visiting schools that are advanced in the use of ICT in the teaching process (February 2007). The goal of this visit was to get a perspective of the equipment and software tools used to deliver the teaching process in the Netherlands and Belgium.
- A series of workshops implemented at the Pedagogical Faculty in Stip (2007-2009)
- A study visit in Groningen, Leuven and Edinburgh (January 2008), retraining teachers, 12 for the application of ICT in the teaching process (for everyone in their area of interest).
- A purchase of equipment and software to equip the E-Learning Center that fits the newly established University "Goce Delcev" (110,000.00 Euros were spent, from March to August 2008). The goal of the establishment of this Center was to provide continuous support to teachers and monitors, and to develop and implement new technologies in the field of electronic learning.

In the second half of 2007, with the foundation of the University Goce Delcev (UGD), it established a policy that would be organized with a high degree of usage of ICT in all segments of business and administration and teaching. Thus, by the end of 2008, computers were provided for each

employee at the UGD, more new classrooms and computer labs with interactive boards were provided, a modern network connecting buildings and campuses with optical connection are provided. In September 2008, the e-learning center has been established and Learning Management System (Moodle) has been implemented.

The E-learning Center uses Moodle platform, which aims to ensure proper development of skills and competencies necessary for the 21st century and especially to ensure digital literacy for students that is essential for their future profession or career. Also, this software package provides increased and improved access of students to the created courses. By using a multimedia software, interactive panels and audiovisual equipment, the center meets all the needs of a modern and educational space.

Until now (February 2011) the Moodle platform has 9205 members, 225 of which are teachers, assistants and lab technicians, and others are students of the University "Goce Delchev" - Stip.

Currently, the total number of created active courses on Moodle platform is 835, and administrators run regular and constant review of its courses for content, activities and students belong to them. In the table 1 are given recent data that define the use of Moodle platform.

Table 1. Use of Moodle platform

	<b>Total:</b>
<b>Courses:</b>	835
<b>Users:</b>	9205
<b>Assignments of roles:</b>	51690
<b>Lecture:</b>	225
<b>Posts:</b>	17430
<b>Questions:</b>	1575
<b>Resources:</b>	9176

In the period from November 2009 to December 2010, the E – learning center implemented a number of activities, according to the intended work program. In continuity is given a chronological overview of implemented activities:

- In the period from November 2009 to January 2010 at the E-Learning Center (ELC), initial courses were held for the use of „Moodle platform“ for teachers and collaborators from all 13 faculties within the University "Goce Delchev".
- In the period from February to March 2010, and a new look for the Moodle platform with its own logo on the center was created, with menus and links to useful sites. On 03/05/2010, the officially launched the first issue of the weekly e-info, which is continuously published weekly, except the period during summer vacations..
- From March 31 to April 30, 2010, the second part of the courses for the use of "Moodle platform" for teachers and collaborators from all 13 faculties within the University "Goce Delchev" was held.

- In the period from April to May, in regions of the Workers' University in Strumica, a course for the „Life long learning in every home“ was held, as well as conducted training courses for IT resources.
- In the period from May 31 to June 30, 2010, in the E-Learning Center (ELC) the courses for IT - Resources for new employees of the University "Goce Delchev" were held.
- Additional courses for the use of Information Computer Technology - ICT in teaching and research process took place during the period (23.08 – 20.09.2010 year). Guide for using Moodle platform was developed. During this period at the high school “Dobri Daskalov” in Kavadarci the course " Use of IT tools for E-learning " was held.

The project "Implementation of LMS in teaching organized by the UGD’s E-Learning Center (ELC), began in January 2009 and is still in progress, and it is planned to finish in July 2010. It is partly funded by the Fulbright program, and most of the assets are covered by the UGD. As part of this project the following is realized:

- First part of the training for trainers for the application of LMS in universities (two from each faculty), 15 days workshop with instructors from the USA, provided by Fulbright, January 2009
- A part of the training for trainers for of the application of LMS in universities (two from each faculty), 15 days workshop with instructors from the USA, provided by the Fulbright, July 2009
- Mandatory one-day initial training on the use of LMS, for each teacher at UGD, with instructors from the ELC implemented from October 2009 to December 2009
- Mandatory training (consultations) on the spot at the university’s faculties with visiting instructors from the ELC, January 2010
- Mandatory two days’ training for using the LMS, for each teacher at UGD, with instructors from the Center for e-learning implemented from April 2010 to June 2010

### III. PRESENT SITUATION RESULTS ACHIEVED (MAY 2010)

As a result of all these activities, the situation with the use of ICT is much improved. Every employee of UGD daily uses computers for communication and work, while teachers use more LMS as it is shown in the following picture:

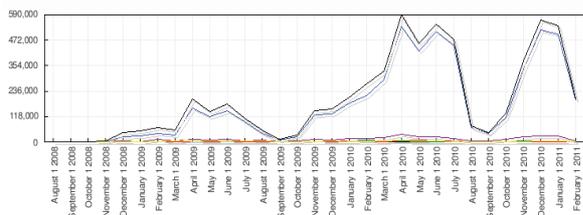


Figure 1: Graf showing the usage of the LMS at UGD

Here it should be noted that since October 2009, when compulsory courses began to use the LMS, its use has increased several times. If you compare April 2009 and April 2010 you will see three times more activity than in April 2010.

Of course this has influenced by the use of LMS by the students. According to the surveys carried in March 2009 and March 2010 a total of 632 student replies in 2009, i.e. 731 student replies in 2010 (table 1):

- The number of students who have a computer at home is up nearly to 5%, i.e. from 79.60% to 85.12%
- The number of students who have internet access at home has increased by more than 10% i.e. from 59.82% to 70.77%

Table 2. Students questionnaire

Students questionnaire		
Year	2009	2010
<b>Own PC</b>	79,60%	84,12%
<b>Internet access</b>	59,82%	70,77%
<b>Answers</b>	632	731

The obtained results from table 1 are shown with diagram (figure 2)

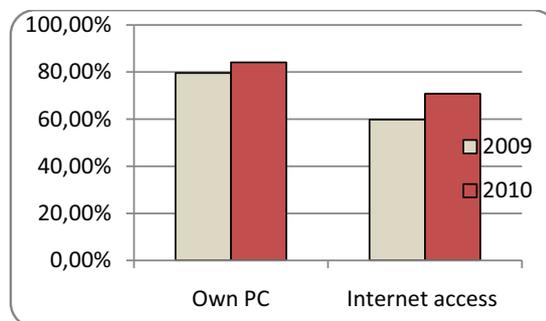


Figure 2: Graf - students who have a home computer and Internet access

The lack of digital content and resources that should be used in teaching occurs as a shortcoming in this situation. The process of creating digital content is time consuming and requires more effort in their creation. This directly affects the quality of teaching.

In this period all the effort are directed towards implementation and integration of Moodle E-learning platform. Our next activities will be to create content for learning and creating a repository for content of learning.

#### IV. CONCLUSION

The process of implementation of ICT in daily work in teaching is not easy. It takes great effort, dedication and perseverance.

Before we began this process the lack of equipment and lack of skills in using the equipment were identified as the main problems. Yet another issue was neglected at the beginning: the human factor - motivation and willingness to use ICT. This was frustrating - they were leaders with their support the computerization, but when they began to use computers, they avoided training and kept low level of skills in using ICT. Unfortunately it is a fact that became a word for fellow aged between 30 and 40 years. A solution to this is found in several "unpopular" measures: mandatory training for anyone recording the attendance and examination, instructions for mandatory use of ICT and regulate the entire process with regulations.

The key benefits of e-learning solutions are:

- Increased quality and value of learning achieved through greater student access and combination of appropriate supporting content, learners' cooperation and interaction, and on-line support Decreased cost of learning delivery, and reduced travel, subsistence costs and time away from the job.
- Increased flexibility and ability to respond to evolving business requirements with rapid roll-out of new and organizational-specific learning to a distributed audience. Often an E-learning programme will involve development by a number of people simultaneously. Therefore design and development of standards need to be put in place to ensure consistency and transferability of skills.
- Students are also far less forgiving in terms of inconsistency of user interface and ease of use than with classroom material.
- Increased reach and flexibility enabling learners to engage in the learning process anytime, anyplace and on a just-in-time basis

From all the above said in our success story, we found that key factors for success are:

- E-Learning Center (ELC), which is necessary for realizing and coordination of all activities.
- Advanced ICT equipment and resources
- Permanent training for upgrading skills to use ICT equipment and resources
- Organizing a specific centers which will be tasked to monitor compliance with the ICT (safety, maintenance, lapse, use) and which will provide continuous training to users
- Looking for a way of motivating users through the rewards, orders, decrees, etc.
- Organizing a repository of reusable digital content and learning materials.