

# **Integrating ICT in Teachers Education - Case study at "Goce Delcev" University**

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## **Abstract**

*Faculty of Education at the University "Goce Delcev"-Stip is a leading institution in the implementation of new technologies in education in Macedonia. Faculty of Education has realized many international and local projects under the patronage of the MES of RM and USAID, as well as one EU TEMPUS project. The main idea of the projects was to integrate ICT in the curriculum of the Faculty of Education, and the students, the future teachers to be familiar with the application of ICT in education. Generally, known problems are emerged here: a lack of equipment, insufficient training for use of equipment, lack of digital resources for use in education and so on. At present, most of these problems are solved, but things still are not going as it should. Now we have classrooms full of technology but that technology is insufficiently used by teachers. Also, we found that there were new problems: motivation and desire to use ICT, and insufficient monitoring of ICT development. In this paper our experiences and lessons learned in the implementation of projects and in the process of integration of ICT in the teaching process are described.*

## **Introduction**

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 are several projects funded by USAID, European Council and Ministry of Education and Science of RM. 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 establishment).

Here, I would like to highlight two projects in scope and duration which had a special significance for the Faculty of Pedagogy: Creative Teaching and Learning (USAID), Integrating E-Learning across the Teacher Curriculum (TEMPUS). Common feature of these projects was the fact that they were aimed at adapting the existing curriculum to better educate the prospective teachers. 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 Fulbright Foundation.

The realization of these projects at the Faculty of Pedagogy as a unit at the University "Goce Delchev" made it a leading institution in our region in the implementation of new technologies in education.

## **Conditions for equipment and application of ICT in teaching in 2005**

In early 2005 the Faculty of Pedagogy in Stip was very modestly equipped with ICT. There was a laboratory with 12 PCs of type 486 (the current type Pentium 4 " ), acquired in 1996. In each cabinet, for 2 or 3 teacher they 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.

## **Projects activities**

Project "Creative Teaching and Learning" was a huge project and was not limited only for integrating ICT in the teaching process. It lasted from October 2002 to December 2009, it was implemented in three phases, with a total budget of about 3.5 million dollars provided by USAID. <http://macedonia.usaid.gov/en/sectors/education/ctl.html>

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

- Two ten-day intensive trainings "Teaching and Learning with Technology", with instructors from George Mason University, Washington, USA (Tetovo and Ohrid in August 2005, January 2006)
- Study visit to London, 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 were included from the pedagogical Faculties during 2007 and 2008 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 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:

- Study tour 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 aim 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)
- Study stay 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).
- Purchase of equipment and software to equip the Centre for e-learning that fits the newly established University "Goce Delcev" (110,000.00 Euros were spent, from March to August 2008). The aim of the establishment of this Center is to provide continuous support to teachers and to monitor, develop and implement new technologies in the field of electronic learning.

In the second half of 2007, with the founding of the University Goce Delcev (UGD), it established a policy that it would be organized with a high degree of usage of ICT in all segments of business and administration and in teaching. Thus, by the end of 2008, computers are 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. Document Management System and Learning Management System (Moodle) are also implemented.

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 day workshop with instructors from the USA, provided by Fulbright, January 2009
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- 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 on using the LMS, for each teacher at UGD, with instructors from the Center for e-learning implemented from April 2010 to June 2010

### 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:

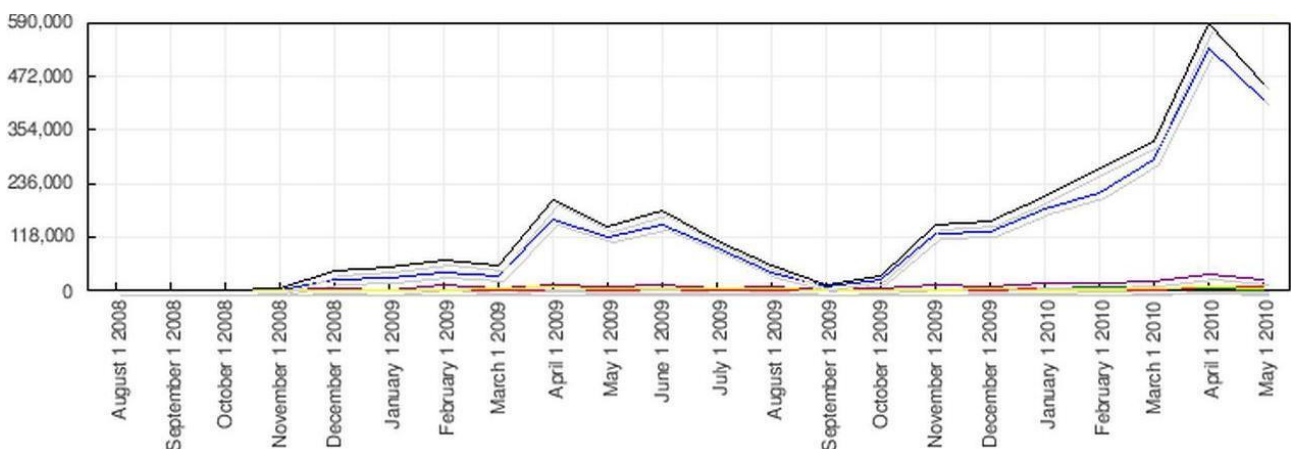


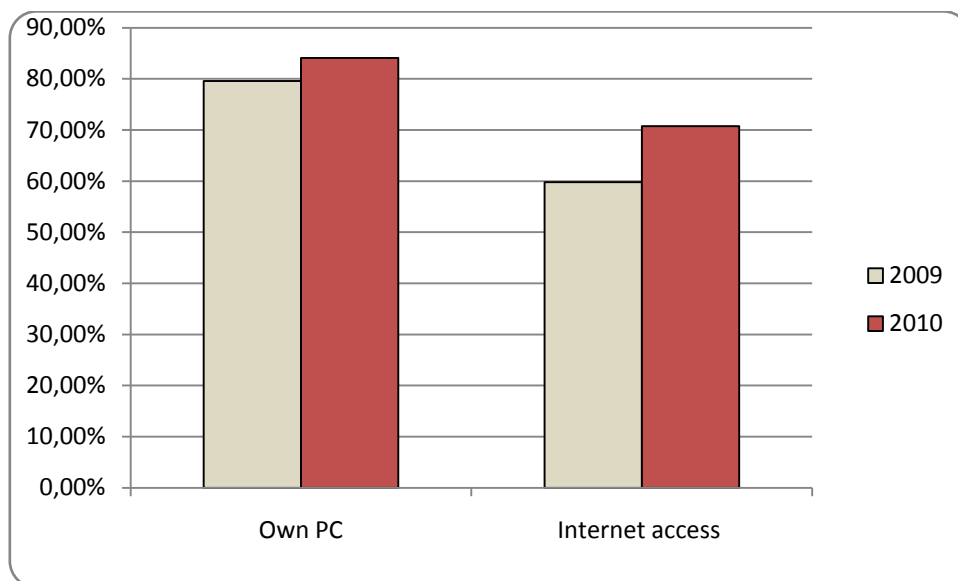
Figure 1: Graf showing the usage of the LMS at UGD

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 the use of LMS by the students. According to surveys carried in March 2009 and March 2010 a total of 632 student replies in 2009, i.e. 731 student replies in 2010:

- The number of students who have UGD home computer 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%

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



*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.

## **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. 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.

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

- 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.