TRAINING PRIMARY SCHOOL TEACHERS TO USE E-LEARNING TECHNOLOGIES – A PILOT STUDY

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Abstract: In this paper we present a blended learning scenario for training of students in master program "ICT in primary school" carried out in South-West University "Neofit Rilski". Our approach is based on "face to face" lectures and seminars, SCORM compatible e-learning content with a lot of simulation demonstrations, trainings and self assessment, group problem based learning. Also we discuss the results of the course and attitude of the participants in the course towards used methods and possibilities of application of e-learning in primary schools.

Introduction

Today e-learning technologies take a permanent place in different educational levels in Bulgarian universities. In Bulgarian e-learning space courses for different majors with diversity of pedagogical scenarios and didactical methods are offered. Some of interesting courses are directed to:

- Problem based learning and simulations in Biochemistry for students from Medical university Sofia [2];
- Problem based learning, grounded on communication and collaborative activities in courses for students in major Pedagogy at Sofia University [5];
- Using of set of tools for visualisation of algorithms in programming courses[3, 8];
- Using of computers simulations in course "Operating systems" for students in major Computer Science [1];
- Using of virtual laboratories [4];
- Collaborative learning method "Jigsaw" [6, 7] etc.

In this paper we present a blended learning scenario for training of students in master program "ICT in Primary School" carried out in South-West University "Neofit Rilski". Our approach is based on "face to face" lectures and seminars, SCORM compatible e-learning content with a lot of simulation demonstrations, trainings and self assessment, group problem based learning. Also we discuss the results of the course and attitude of the participants in the course towards used methods and possibilities of application of elearning in primary schools.

Methods

Target group

In the study participated 26 part time students – 23 women and 3 men. Average ages of 43 years. All of the students were teachers in primary school. (In Bulgaria primary school covers students from 1st to 4th grade and primary school teachers teach all school subjects.)

Learning scenario

The course "e-Learning technologies" is a part of master program "ICT in Primary School", carried out with the part-time students in the South West University "Neofit Rilski", Bulgaria.

The general aim of the course is to form knowledge, skills and abilities about elearnig technologies and methods and their successful implementation into educational process in primary school level.

Basic topics in the course are:
- Basic technological and pedagogical concepts in e-learning;
- Models of e-learning courses;
- Psychology theories of learning and their implementation in e-learning;
- Functional features of e-learning environment Moodle.

The course was organized in blended mode with support of e-learning environment Moodle 1.9. The students had 15 hours lectures and 15 hours exercises in "face to face" mode and around 30 hours for development of own e-learning course in Moodle. During the lectures they learned mentioned above topics of the course. During the face to face exercises the students mastered basic techniques for development of e-learning course in Moodle. They worked under supervising of the tutor with resource files, prepared in advance by lecturer and used on-line simulations and demonstrations. To master basic skills for development of e-learning course all students followed common tasks. The tasks were related to:
- using of integrated HTML editor – including text, images, audio and video, tables etc.;
- using learning resources - web page, link to file or external web resource, label;
- using and management of learning activities – assignment, lesson, test, forum, blog, wiki, questionnaire etc.;
- management of students – grouping, assign students to activities and resources.

The students were grouped approximately 5 students per group according school subjects – Mathematics, Bulgarian Language, English Language, Music, Human and Nature, Human and Society. Each group was assigned to one common e-learning course. During the face to face exercises students used resource materials offered by the teacher to learn basic techniques and functionalities of the e-learning environment. Also they had a possibilities to use SCORM based e-

learning demonstrations and simulations. Each student in role of "teacher" could assign another student in her/his course like "a student". In this way another students have a possibility to be enrolled in the course with student rights and could observe work of their colleagues.

After face to face meeting students have to develop a part of e-learning course with obligatory components:

- e-learning content in form of web page;
- link to files with, presentation;
- audio and video content;
- test with diversity of test's items.

The course have to be based on own scenario. The evaluation of the student's skills was grounded on the developed e-learning courses.

Results

After the training we carried out questionnaire. The aim of the questionnaire was to identify the most efficiency e-learning resources and activities provided in Moodle environment. Also we wanted to investigate student's choice of the resources and activities in their future e-learning courses for primary school. The questionnaire was sent to all 26 students by e-mail. We obtained 21 responds. The most signifying tools and techniques according the students' opinion are multimedia demonstrations, simulation exercises and teacher's explanations during the face to face meeting. (Table 1 and Figure 1)

Table 1. Data for evaluation of significance of used learning resources and activities.

| 7.	Rank the tools that impact to increase your skills and knowledge about e-learning environment. Most valuable tool mark with 1.	1.	2.	3.	4.	5.	6.	Average	Median
	multimedia demonstrations	8	7	3	0	2	1	2,238095	2
	simulation exercises	5	4	6	4	2	0	2,714286	3
	self-assessment simulation exercises	0	2	3	10	5	1	4	4
	self-development of an example of e-learning course	3	1	7	4	4	2	3,52381	3
	explanations of the tutor during face to face sessions	5	6	1	2	5	2	3,095238	2
	discussions with the colleagues in the forum	0	1	1	1	3	15	5,428571	6
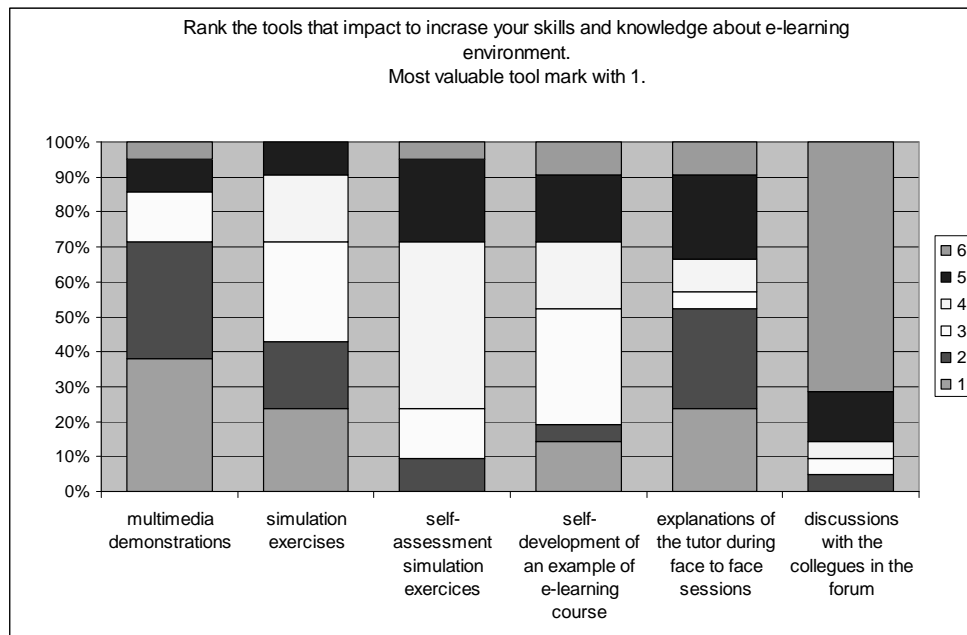
Figure 1. Rank of the used e-learning tools

In opposite of the data presented in another study with the same students [6] for the present course students putted participation in discussion forum at 6 place. We think that in the first course "Computer games in education" described in [6] the students are experts in their field – development of scenarios for educational games and scenarios for implementation in lessons of existing educational internet games. They used the forum like a media for expression of their opinion about developed scenarios. In course "e-Learning Technologies" the students are novices in area of used e-learning environment. They can not obtain a help and more information from their colleagues because all of them are beginners in this field. The data shows that students intend to include in their future e-learning courses learning activities such as assignment, test and lesson. (Figure 2) They prefer to present e-learning content in form of interactive presentations, links to audio and video files.

All of students reported that the course helped them to master basic principles for e-learning content development in e-learning environment - 52,4% answered with Yes and 47,6% answered with Definitely Yes. Most of the students intend to develop e-learning content in the school – 9,5% answered with "Yes and No", 66,7% answered with "Yes" and 23,8% answered with 'Definitely Yes".

Some suggestions that were proposed by the students: "To be included more simulation exercises.", "More practical sessions and exchange of opinion among students", "More assignments", "To be forced communication between students and teachers" etc.
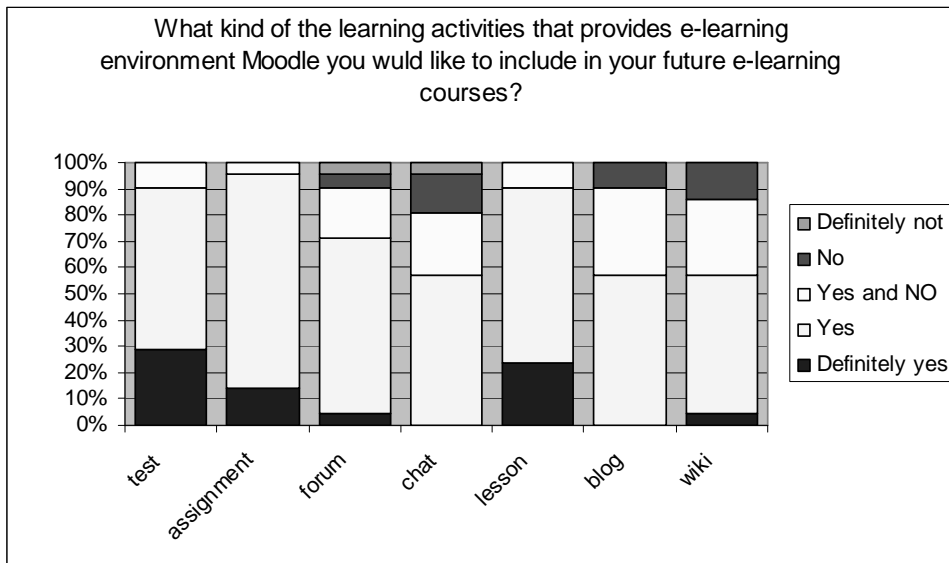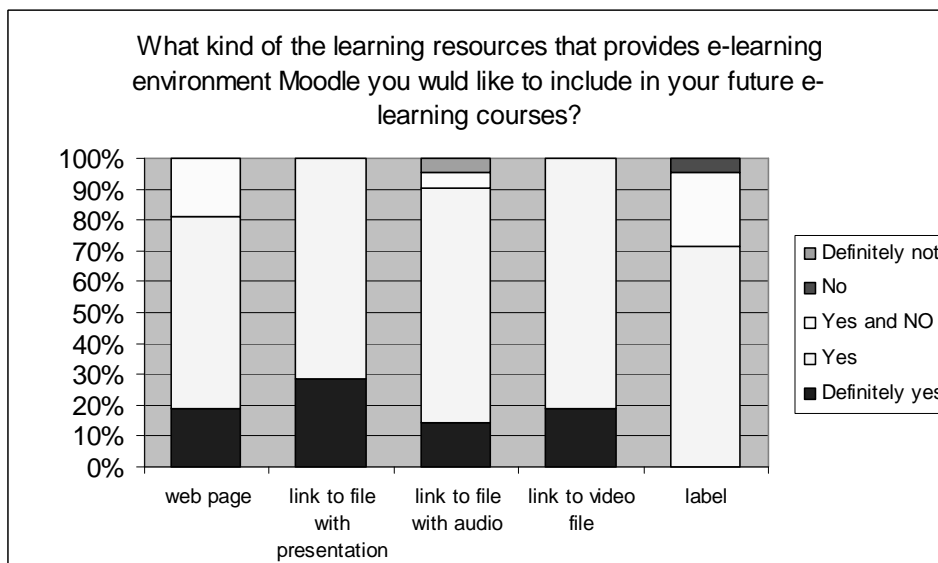
Figure 2. Preferred learning activities

Figure 3. Preferred learning resources

Conclusions and future work

The presented pilot study and scenarios for training primary school teacher to use e-learning technologies and environment in blended mode with variety of interactive demonstrations and simulation was successful. The teachers had very high motivation to participate in the course. The practical results in development of

e-learning content by the teachers are suitable to be applied in primary school. The structure of the course is open and allows new interactive demonstrations and simulations to be added in the future.

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