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How Moodle Facilitates E-learning? A Case Study in Vocational Education

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Abstract:

E-learning is nowadays a promising place to improve both modern and asynchronous education. The most widely used tools for asynchronous e-learning today are the Content Learning Management Systems, which are Internet-based platforms that allow teachers to manage and distribute their educational material efficiently. Also, they can be used for communication between teachers and students.The aim of this paper is duple. First, this study explores the attitudes of forty students, who attend computer science course in an Institute of Vocational Training (IVT), on e-learning and study learning material through learning platform Moodle. Secondly, this study investigates presentation and teaching methods using the Moodle in the context of IVT. According to the study results and the students' opinions, e-learning can be a useful tool both for teachers and learners to achieve better results in the educational process. Furthermore, students can face learning as an opportunity to strengthen and promote self-efficacy, adulthood, independence, self-assessment and self-development.

Keywords —**distance learning, Moodle, vocational learning.**

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I. INTRODUCTION

Utilizing new technologies in conjunction with the new pedagogical methods used opens up new avenues for learning (e.g. [8]). In recent years, many studies have focused mainly on learning technology, online learning and computer learning (e.g. [4]).

Adult education is included in all scheduled teaching and learnings activities. They aim at the integrated personal development and creative integration of adults based on age, their social roles, and their self-perception as individuals, workers and active citizens in socio-political, cultural and economic development (e.g. [10]). A learning method is and on a postages learning (eLearning) which is increasingly used in higher education seems to result in a significant shift in the way in which information is accessed by modulating an inexhaustible source of easily material accessible and renewable (e.g. [11]).

Penetration in distance learning shows an increasing trend in our country in higher education (e.g. [1]). Besides, recent years have seen keen interest in both primary and secondary education. For example, lately, University Institutions have been providing educational seminars on the use of such technologies to teachers of the respective levels. However, it seems not to have the same effects on adult training schools, such as public IVT as we are in embryos I party stage as, regarding the use of the tools on a distance learning. The work then analyzes research data as they emerged from the students' responses, and then presents ways to use the Moodle platform that has been implemented on the one hand to enhance teaching and on the other hand learning.

II. THEORETICAL CONTEXT

A. E-Learning

In the classroom, e-learning can support all modern teaching methods (e.g. [3]). According to Koh and Chai (e.g. [9]), this is achieved when the two parameters of technology - teaching are combined appropriately. A key factor for success is the knowledge that instructors must have on how they can combine the transmission of knowledge in conjunction with the use of technology (ICTs) (e.g. [7]). Therefore, teachers who can combine the above can more easily adapt to the modern teaching requirements that are now found in all educational levels and structures (e.g. [6]).

B. The Moodle platform

The Moodle is a platform to conduct online courses over the Internet and was created in 1999 by Australian Martin Dougiamas. The name Moodle is the acronym for Modular Object-Oriented Dynamic Learning Environment, available for free under GNU / GPL as free software / open-source software. It is a very flexible, flexible, articulated distance learning, but also for blended learning, as it is often used as a supporter of the educational process at all levels of education. Finally, it is worth noting that it has been translated into 70 languages, including Greek, and uses the infrastructure of the Panhellenic School Network.

Briefly, this tool is a technologically advanced learning environment providing the possibility of interaction between instructor and trainee (e.g. [2]). Through the discussion groups, it is possible to exchange views, to solve questions on issues related to the subject of teaching (e.g. [5]).

From the teacher's point of view, it is possible to organize the course material electronically by making it accessible online. It should be noted that due to the importance of digital educational material, modern trends are gradually leading to the transformation of educational material from "prefabricated" to a more "dynamic", i.e. open to interventions, changes and adaptations in the educational context of the specific group of adult learners. It is also possible to create for each student an electronic envelope that will contain his performance in exercises and assignments, as well as standardized tests for further study on issues that are difficult to understand. Installing Moodle is relatively simple as it can either be installed on the server of any institution or use ready-made online tools that provide it pre-installed.

C. Operationalization

In IVT until the school year 2014-2015 "officially" no electronic learning tool is used. The only electronic procedure that is followed is the "electronic uploading" of the notes of each instructor in the online storage service Dropbox, and through it, the students of each speciality have internet access to the notes. However, many instructors using online tools (blog) or electronic discussion applications (yahoo groups) to enrich the teaching of each lesson. Therefore, due to the lack of a modern and specially designed for e-learning application, an attempt was made to pilot the Moodle platform in the two sections of the Computer Science speciality of the first and third semesters.

D. Implementation Steps

The whole process lasted four (4) teaching weeks, i.e. sixteen (16) teaching hours. The local server (IEK) operating server was used to install the platform. Both the installation and the creation of the administrator account were carried out by the teachers. While for the configuration and enrichment of content with teaching material, the team-collaborative method was followed. The students were divided into groups of four (4) people. Each group completed tasks at a particular time. During two teaching hours, the instructors were informed about the platform and its essential functions so that students can become familiar with the user interface. Then two teams undertook to configure the front end of the application. In the next two weeks, we create the courses related to their speciality and the "uploading" of the material.

E. Application capabilities

The following describes the basic features of the application. Two categories were created based on the specialities of computer science students. Then, in each speciality, separate courses were created. Then, the "Participants" block was activated,

through which it is possible to monitor the activity of the students. It was also considered appropriate to activate the "Calendar" to which the instructor can add an event related to the course, such as the exam date. Also, the system through the blocks and grades allows the instructor to raise the students' grades, whether they are for the final exam or assignments. Thus, students have the opportunity to access their grades immediately. An important feature that Moodle supports is the addition of interactive content in which questionnaires were created with the help of students and each student can not only give answers but also interact with other users or the instructor by asking questions. Special mention should be made of the creation of the forum as, as the research showed, the students used it daily and rated it positively. The exchange of views was not limited to purely educational issues, but constructive discussions were held on computer science with very positive results.

III. METHOD

The research was conducted during the first semester of the academic year 2014-2015 to students majoring in Computer Technician (3rd semester) and Computer Applications Technician in Multimedia (1st Semester). Forty students (N = 10 women and N = 30 men) participated in the study. Both qualitative and quantitative approaches have been used in the research because they complement each other and lead to a more comprehensive understanding of the phenomenon under investigation.

A closed-ended questionnaire was used to collect the results. The questionnaire included demographic questions, questions about personal computer use and e-learning, as well as a set of questions about the current state of IVT regarding online education and what they would like to improve. Finally, the students were asked to comment on the results of the work given to them during the semester. The goal of the study was the students' participation in the configuration of the Moodle platform. Moreover, students were expected to participate in the creation of the educational material. The questionnaire was completed by forty (40) students of both specialities. The data analysis, as well as the output of the results, was done with the application of spreadsheets (Excel).

IV. RESULTS

The resulting demographic data showed that 60% of the sample between 18-25, 25% between26-33, while 15% of the students aged 34, and over. Also, of the 40 participants, 30 (75%) were male, and 10 (25%) were female (Fig. 1).

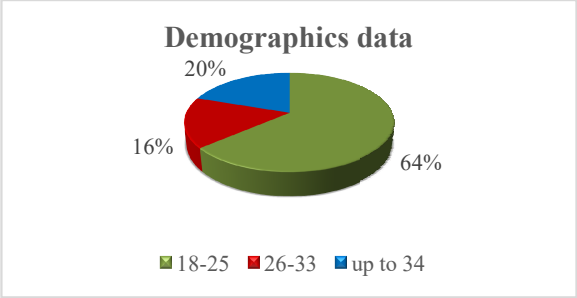

Fig.1 Distribution of the sample according to age

The vast majority of the sample, 90% (36) stated that they own a personal computer, while 65% (26) stated that they have access to the Internet from their home. Also, 75% of students said that the whole experience of using Moodle was positive and constructive, 20% described it as slightly positive, while 5% found it indifferent.

In separate statistics, the students stated that they used the platform mainly to access the teaching material but also to "upload" the assignments assigned to them. The latest statistic needs to be commented on as students have used the platform for basic tasks, while Moodle as a web 2.0 tool can be used as a learning system with which users and instructors can communicate with each other and move forward together—in the shaping of the material, avoiding the trivial functions that are found in more straightforward applications (e.g. [12]). Equally useful conclusions emerge from the respondents' answers to how easy they found the use of the platform. The distribution of the answers, as shown in Fig.2 ranges in definite answers 75% (30 answers) while 25% (10 answers) found difficulties in its use. It should be noted that only two teaching hours were devoted to learning the main points of the platform, but throughout the

semester the students were informed about the operation of the application, resulting in the above positive results.

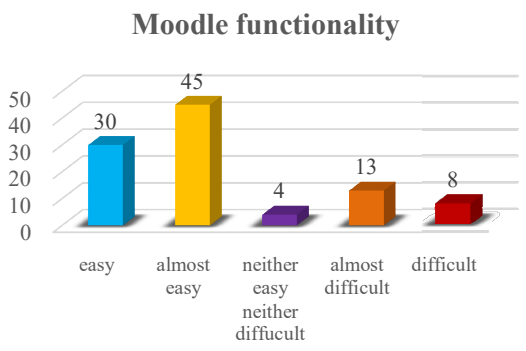

Fig. 2: Ease of Use

Finally, when students were asked what functions they would like to change and make it easier to use, the most popular answers were the implementation of a forum and the calendar of events. Regarding the first, highlighted the lack of automatic update recent activity when a user connects to the application while the second questionnaire focused on throughout this operation the additional (module).

V. CONCLUSION & FUTURE WORK

The results of our research show that Moodle is acceptably accepted by students who consider it an easy-to-use, useful and effective tool for improving educational instruction. It was also found that students' interest increased, as did their self-confidence through collaborative learning. Besides, it was observed that students who did not actively participate in the course, when invited to work in a group showed positive results as they were active members of their groups. Future studies might wantto use the platform from all specialities in combination with the training of instructors in its use. Finally, after a reasonable period of time, it is proposed to expand the research to capture views in other non-computer science-related specialities.

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