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Aspects concerning the use of the Moodle platform - Case study

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Abstract

Exponential growth in computing over the past decade has triggered the development of many useful IT tools and implicit teaching, development of several E-learning platforms, which have become more familiar to teachers and students. Generic learning E-learning can be defined as distance learning in a progressive and collaborative learning, which combines traditional teaching methods with methods based on IT resources with the objective of increasing the performance of individual learners. Learning E-learning is based on modern teaching in a different way than classic which is more attractive and has an important role of knowledge building and evaluation performed in an attractive manner and custom, both those direct learning, especially as learners - pupils or students. This paper intends to present the functionalities of the E-learning platforms. This approach underlines identifying the training of students in using Moodle platform, based on a SWOT analysis and based on a questionnaire survey. The questionnaires were pooled using Google Docs platform. The results obtained from the questionnaires have shown some positive and some negative aspects.

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1. Introduction

The exponential growth of information developed new thinking (targeted selection of subjects) which refers to how we acquire knowledge and skills, and how we develop learning resources, keeping up with the knowledge-based economy. Learning is a vital activity in the current knowledge-based new economy characterized by globalization, increased intensive competition, knowledge sharing and transfer, and information technology

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revolution. To keep up with new technological trends in the educational system institutions of higher education have developed new communication platforms. Using the online environment to present E-learning initiatives has created expectations both in the business market and among in the higher education institutions. Nowadays, the computer is a significant part of the learner's daily life. It is, by now, inevitable that methods of teaching and learning should include E-learning components that are based on the computer environment and include proper preparation for the 21st century which requires a "new pedagogy" [1]. The new technology support the students / learners and presents an alternative for those who want to strike a balance between private life, career, and continuing studies. The development of this type of learning has focused primarily on the implementation of technological resources (web platform) and the definition of standards for the exchange and reuse of learning objects. This has led the researchers to define a lot of E-learning platforms with the purpose to create the learner's self-paced learning process [2]. This method is one of the most dynamic forms of learning because it helps reduce dependence on time and space. It is a process adapted, personalized and dedicated to the student need and specifies environment, it is available at any time and can be accessed anywhere. Therefore, a new challenge to the developers of E-learning platforms would be to improve platforms, which make it possible combining traditional teaching methods with new technologies to take into account creating an interactive content, educational and personalized [3]. This leads to continuous development and improvement of software developers for personalized learning. Software developers must go beyond the paradigms of their discipline when they made the design and implementation of the learning program. They have to seek interdisciplinary exchange (teachers, authors and learners). There are also many companies such as Ninth House, Thomson Learning, Keep- Smart.com, and eMind.com available that provide E-Learning platforms like Blackboard (a commercial one) and an open-source Moodle [4].

Interest in developing a platform for E-learning has emerged in academia in the early 2000s. A concrete example is the one Muenster University, which in 2003 developed LearnServe platform. In contrast to commercial E-learning platforms, LearnServe, being developed by Muenster University, makes E-learning offerings available though the emerging paradigm of Web services [5]. The implementation of this tool in the area of E-learning facilitates a considerable flexibility for the users of the system both in usage of functionalities and selection of content.

The present paper highlights some aspects of a scientific approach of sociological analysis and interpretation from data obtained in one study based on observation and questionnaire.

This research was applied to ID students (Distance Learning) with the following steps: initiating research, development and reproduction of the questionnaire, determining sample, data collection, data entry in computer, computer processing of data from questionnaires, statistical analysis and interpretation of sociological research results and conclusions of the study drafting. The paper concludes that the concept of E-learning is an important development in education. It recognizes the the transition from teaching to learning and puts the student before the institution. The universities too have to change their strategy and move away from traditional learning modes to more innovative and participative ones.

2. The E-learning concept

E-learning offers new ways of learning for institutions of higher education based computer and net technologies. The sphere of E-learning has enabled universities to expand their areas of knowledge both nationally and internationally. The time granted of the study is not limited to a specific place or time but may be at any time or space. E-learning is defined as the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services, as well as remote exchange and collaboration [6]. E-learning is one of the new learning trends that challenge the traditional “bucket theory” or the banking concept of education [7].

E-learning concept has become increasingly important in the field of higher education and educational communities. The emergence of this form of education is based on the rapid growth of information and communication technologies, as well on advanced computer knowledge acquired by students. Reasons for obtaining such significance can be attributed to several factors. One of the most important factors is the increasing role that they have on languages and opportunities that arise for professionals who have a good knowledge of the language to make a career in country and abroad. Nowadays,, one can observe a growing trend among young people to master many specialties. Developing technologies allow professors to create multimedia courses for certain students and
provide the access to on-line materials. Every learner can select a subject to be studied to their taste as well as pace of learning [8].

However, an important research direction indicates that studies on creating an environment for E-learning is not simply a technical issue, but rather, it requires consideration of several human and social factors. Learners perceptions about the technology used determine their attitudes towards them. The choice of educational technologies should not be guided by a technologically deterministic approach but should be based according to contextual requirements related to a broad range of social, cultural, political and economical [9]. E-learning is more and more known and available today, it is free for courses which are held by public institutions. It offers to the student’s opportunity to study at home, if they have Internet access and gives the chance to part-time students and disabled people to study as well. Courses are created by top professor from the leading universities, can be available for bigger audiences in small towns and even villages, in schools and colleges of periphery. The other factor that influences E-learning is that in this era named the knowledge era, the younger generations can download things easily on demand and are quite comfortable with hyper texting or parallel processing and so they are called “digital natives”[10].

The second direction of this educational approach should also take into account the impact on the learners towards created the field of E-learning, learning attitude and their style through this system [11] as well as promoting teacher-learner relationship, engaging students in group activities, including regular communication training of feedback, course organization effectively using technologies that are flexible [12]. E-learning can be viewed as the delivery of course content via electronic media, such as Internet, Intranets, Extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM [13].

The third direction is apparent from the researches on to the student behavior in using E-learning platform influenced by several factors. Each student develops his or her own style of learning. Students have different learning styles; some of them learn quickly and can synthesize rapidly the information, while others prefer to learn in a slower rhythm. Furthermore, some students like to work alone while others prefer to work in groups. Information technology allows customization the student experience and allows adaptation to different learning styles. Khan concludes that the concept of E-learning is seen as synonymous with web-based learning (WBL), Internet-based training (IBT), advanced distributed learning (ADL), web-based instruction (WBI), online learning (OL) and open/XeXible learning (OFL) [14].

Acquiring a learning style influences learning behavior of a person during school activities and his experience affects future work. The researchers believe that learning style is a good indicator of preferred learning behavior of a person. It is important to have and to give more opportunities to learn because instructors cannot always accommodate each student's needs [15].

A match between learning style and teaching style reveals increases in student satisfaction [16]. Furthermore, E-learning platforms have the potential to change not only how student keeps and accesses knowledge, as well as to transform and restructure traditional models of higher education [17].

2.1. Moodle platform

Moodle (Modular Object Oriented Dynamic Learning Environment) platform, it is known as a Learning Management System (LMS) and a free Open Source course management system (CMS) or Virtual Learning Environment (VLE). As a tool for creating dynamic online web sites for students, has become very popular among educators around the world.

Moodle platform is an E-Learning project described as a course management system [18]. The Moodle emphasis is always focused on giving educators, the best tools to manage and promote learning; it is designed to help teachers create effective online communities for true learning. E-learning platform based on resources and activities. The main resource is the training, based on weekly lessons and activities. Can go page by page or you can go from one chapter to another using the "Quick Jump". At the end of each course module can insert a module evaluation.

This module is very flexible and allows the trainer to establish several evaluation methods. Questions can be like "true or false", "questions with a single correct version", "multiple choice questions", "fill gaps" [19]. Moodle allows the utilization of a large range of resources, from chats and forums to online booklets, a variety of questions,
collections of problems and exercises, lecture notes; including a multimedia resources such as graphics, video or audio or PowerPoint [20].

Moodle offers to professors the best tools to manage and promote learning and allows organizing, managing and delivering course materials, thus creating a friendly environment. Professors can provide students with a large amount of resources that they cannot usually show in the classroom due to time constraints. Lesson tasks within Moodle can be linked to any resources that are uploaded to one's server or that are available on the Internet. The students’ exploration of any of the content-based resources can be easily accessed by using any of the Moodle based evaluation and feedback tools. The degree of expertise required is essentially the same as for any word processor. More sophisticated presentations such as animations or textspecific feedback provisions need to be created using exterior multimedia authoring programs. These materials cannot be added in a hard copy booklet.

Moodle has pedagogical advantages since it was built in accordance with the teaching approach which emphasizes the construction of knowledge through active and interactive learning, and learning multi-sensory experience through multimedia [21]. This means its goal is to provide a set of tools that support an inquiry and discovery-based approach to online learning. Furthermore, it purports to create an environment that allows for collaborative interaction among students as a standalone or in addition to conventional classroom instruction [22].

The platform is used for other activities besides E-learning. Moodle is used mainly in education and aims to improve the teaching experience, through the enriching of the traditional training and assessment methods with the ICT-based ones. By using Moodle, the students have the opportunity to access learning materials, interact with teachers and colleagues and receive specific tasks as home-works. Moodle presents multiple functionalities which made it to become in short time a representative E-learning platform. Some of its features are synthesised in the Table 1:

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Description</th>
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<tr>
<td>Online self-learning and virtual classroom</td>
<td>Self-training module enables the delivery of content in a predetermined order, asynchronously, to the users, they have the possibility to browse the content of pace they want. Virtual classroom enables the delivery of content to users, synchronous learning with the assistance of an instructor. Audio and video instructor can communicate with students. The instructor and students can chat. The instructor has the ability to manage learner’s instant tests and see the results immediately. The instructor can adjust his course plan during the course without having to leave it.</td>
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<tr>
<td>Online Testing</td>
<td>The system allows the administration of tests with questions of different kinds constructed from random sets of questions, corrections and automatic report generation. The platform allows teachers to plan evaluation, at day / hour / minute start and day / hour / minute termination while meeting the test, the student will know how much time has to solve test. At the allotted time the test will be closed automatically and the system will show its result.</td>
</tr>
<tr>
<td>Communication and exchange</td>
<td>System contains forums for students so that they can interact with teachers or peers for discussion of major issues, exchange of experience (answers to questions, debate topics, opinions, etc.). Each course will have its own forum on E-learning platform. Furthermore, the system allows users exchange private messages. Messaging system supports sending events (enrollment in a training session, training session started, granting a grade) and email to each user.</td>
</tr>
<tr>
<td>Monitoring and control</td>
<td>Platform enables monitoring and control of the learning process through reports. These reports or any other lists of platform application interface can be exported in a format that allows their processing (XLS or CSV) for advanced analysis, printing. To fulfill the monitoring indicators will implement several types of reports so that at any time there is a clear picture of activity. Reports and online users list at a time, statistics on users consisting of the number of completed training activities, shoulder training activities underway, the number of training activities not yet started - detailed progress for each training activity traveled, session statistics test consisting of the number of registered users, number of tests completed, the number of tests in progress, the results of each user to a test statistics distribution results in a test for a group of test users will be found in the complex system training.</td>
</tr>
<tr>
<td>Administration and security</td>
<td>E-learning platform provides a controlled environment for carrying out training by restricting access to users with a username and password valid. Each user is assigned a role which gives certain rights to use the platform.</td>
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3. Description of the research method

In this study the Moodle of the Politehnica University was examined. Research method addressed in this approach was the questionnaire developed on the basis of the literature review. This questionnaire aims to identify positive aspects, negative aspects and possible improvements in Moodle. The questionnaire consists of 18 questions, was interviewed a number of 31 students from ID (Distance Learning) with the following steps: initiating research, development and reproduction of the questionnaire, determining sample, data collection, data entry in computer, computer processing of data from the questionnaires, statistical analysis and interpretation of sociological research results and drafting the study and conclusions. Afterwards, the use of Moodle’ tools by students from the Politehnica University Timisoara was analysed. The questionnaire had two stages: the first phase focused on identifying motivational aspects in learning and the second stage based on identifying positive and negative aspects of Moodle. The 18 questions of the questionnaire, which were requested answers, were closed questions. Centralization questionnaires was obtained using Google Docs platform (Fig. 1).

![Moodle Questionnaire](image)

Fig. 1.Questionnaire interface

The main results derived from this research on students from ID, academic year 2013 - 2014 are:

- With a response rate of 1.07%, 28 students responded negatively, hence the use of Moodle is easily approachable and the information folds to the learning styles of students surveyed
- In terms of motivational issues the point of view of target group analyzed are real-time access to information, the ability to choose a optimal learning time management, ability to work in groups
- In terms of the negative aspects of this platform are not tested adequately for student background information, lack of practical activities, increased risk of the occurrence technical problems (Internet Server overload), failure to give every post and unable to make changes without the administrator
- Identified positive aspects of this platform are retrieving all necessary information (which involves gaining knowledge), connect to any device platform technology, interaction between teachers and students.

4. Conclusions

With the integration of the web platform, into the distance learning system, there has been a transition from centralised classroom-based education towards distributed E-learning courses that can be taken anytime and anywhere. The distance learning can provide new formats compared to traditional teaching strategies (teaching, reading and listening). They also allow students to become an integral part of the learning process, new systems can be experience rather than reading or hearing, and in addition can pretend to work and learn in different situations
without risk. So following these criteria students will be able, autonomously, to continuous evaluate their knowledge of cognitive functioning, their own abilities, skills, abilities, knowledge. To realize their strengths and weak aspects (and intervene to eliminate them), to select optimal techniques, procedures, methods of learning, by referring their constantly goals, anticipate difficulties they might face and find solutions to prevent/overcome, to plan and to organize effective the time spent learning the material for study. Taking into account the aspects presented above, it can be summarized that due to its multiple facilities and especially its easy accessibility, even for the beginners, the Moodle platform proved to be a powerful educational web environment for developing different teaching / learning activities in the frame of various on-line courses. More than that, the students who have been enrolled in different on-line courses developed on Moodle platform can easily transfer their abilities and skills acquired in the distance training practice, in future E-learning situations organized on other educational web environments. After analyzing the results obtained in this study, we can draw the following conclusions on Moodle: has friendly interface, it is efficient in terms of cost, has a variety of features, easy transfer information, enables easy communication with each student, psychological comfort and usability in various fields.

Ability to manage online courses for educational institutions or other companies is an important facility, allowing them to implement an E-learning system without the need for hardware infrastructure, reducing the cost of implementation.

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