



VIRTUAL LEARNING ENVIRONMENT IN A CAMPUS

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Abstract- Use of the Internet for enhancing e-learning has become a leaning in modern education institutes. For delivering online and flexible e-learning, e-learning platforms are increasingly becoming a significant part of the strategy. With the help of e-learning the students have opportunity to interact electronically with each other and their teachers during forums, by e-mail and in chat rooms. In addition, it increases the feeling of equality amongst students having equal access to opportunities in the educational process, to express their ideas and to search for facts, making the information more relevant than is usually possible in traditional classrooms. In this paper analysis is carried out for developing assessment activities for e-learning systems that comprises of quiz activities. This exercise module is to be used as a means of assessing a student's recently acquired knowledge, and the implementation of such quizzes online can be an essential aspect in the education process. The main aim of this paper is to provide the quizzes online for students, in order that they feel more confident before an exam. This system is to be implemented using Modular Object-Oriented Dynamic Learning Environment (Moodle), an open source software.

Keywords- Moodle, e-learning, Open source software (OSS), Virtual Learning Environment (VLE).

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Introduction

Using the Internet to support learning has become a leaning in modern education institutes. E-learning systems are increasingly becoming an important part of the approach for delivering online and flexible learning. Presently, an explosion is going on in the demand for e-learning all over the world. The next generation of e-learning needs to provide greater vitality, adaptability and flexibility to support today's increasingly hassled e-learning requirements.

E-learning systems are a group effort, in order to serve a community of learners, where educators, trainers, instructional designers, database administrators, multimedia technicians, and users from a variety of other areas of expertise come together. E-learning offers institutes a number of benefits, such as access anytime and anywhere, better integration of application technology tools, opportunities for independent learning, improved motivation, and access to novel learning styles [2,6].

Currently, there is an increasing demand for methodologies and

technologies, especially for e-learning. E-learning is defined as interactive learning in which the learning content is available online and provides automatic feedback to the student's learning activities [2,5].

There are fundamental requirements that must be realized, in order for current and future generations of personalized e-learning to improve educational effectiveness and efficiency. While recognizing that the world at large will continue to use terms in different and often confusing ways, the term of e-learning is used to refer to online interactions of various kinds, which take place between students and instructors. E-learning particularly refers to the components through which students and teachers interact for online learning purposes [1].

Accessing information and following up all new developments is becoming increasingly hard and expensive with traditional learning. In contrast, e-learning provides these facilities to the learners or researchers whenever and wherever they are by simply accessing the Internet [1]. E-learning is based on two main ele-

ments. The first one is providing up-to-date information to the learner and the second is providing this new information easily and quickly [4,10].

Overview of E-Learning

E-learning is increasingly seen as an important tool by educational institutions. The e-learning allows the students to interact electronically with each other and their teachers during forums, by e-mail and in chat rooms. In addition, it gives students the feeling of equality in the opportunities provided by the educational process, and enables them to express their ideas and search for information more effectively than is possible in traditional classrooms. There is no standard architecture for e-learning systems. All the available architectures depend on the kinds of e-learning products than an institute requires [1]. Most education institutes have similar goals, and so every product or system has similar structures and activities. The differences lie in the institute's requirements, and some universities integrate e-learning products together, such as Oxford University, which has integrated two OSS learning environments, Bodington E-learning and Moodle [10] although they are slightly different from each other.

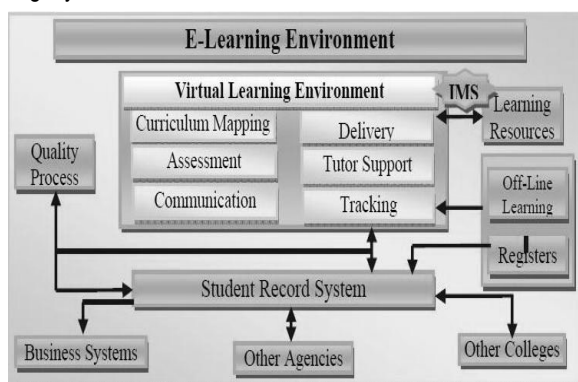


Fig. 1- VLE as a Sub-System within E-Learning [1]

The Figure 1 above shows that, e-learning also acts as a gateway to online Curriculum Mapping, Assessment, Communication, Delivery, Tutor Support and Tracking facilities[1]. The diagram's main purpose is to position e-learning as a sub-system within a range of information systems and processes.

E-learning has become so popular and embedded in many institutions because of there are real benefits to be gained from the use of the technology. Ever increasing student numbers is one obvious aspect of higher education where e-learning can help. They can maintain good communication links, and there are opportunities for automated assessment[1]. In terms of widening participation, e-learning can provide resources to students.

Use of e-learning provides many advantages for the learner, and indeed for the institution. Educators can manage courses such as tracking student progress, making announcements to classes, issuing timetable information, setting, receiving and marking assignments, creating multiple choice tests and so on[1]. It is also an enormous advantage to the institutions and university staff, as it allows them to upload files onto the system for people to access; so they don't need to attach documents to an e-mail and then send them to the class.

Here, interactivity is offered on a large scale and variety; this tech-

nology provides exercises for basic skills. E-learning facilitates interaction between students and instructors, without having time and location constraints. E-learning enables easy online delivery of materials for both students and lecturers with wider student access, on and off campus, to learning materials and resources. In addition, it offers a flexible support for educators who do not need to be in a fixed time or place to support and communicate with students [8,11,7].

Though there are many advantages of e-learning for teachers, student and institutes, it also has some limitations, which are that both teachers and learners need training in order to be able to use e-learning. Also, e-learning can be a dumping ground for material not designed for delivery online. Furthermore, the copyright, disability legislation and accessibility of online materials need to be considered [5].

Problems may arise during off-campus access to hardware and networks for both learners and teachers, increasing issues of equality, and also access can be slow and expensive. Online support must be planned carefully. Also, learning material can become outdated. Therefore, e-learning can become more sophisticated and may require more tutor administration.

Analysis of OSS (Moodle)

This literature review is aimed at identifying the literature related to e-learning, analyzing and evaluating existing e-learning, and focusing on exercise modules to explore their functionalities and limitations. E-learning supports the world-wide trend of offering online joint courses over the Internet, which includes institutes in different countries who employ roaming staff and who target mobile students[1].

Universities need to spend a great deal of money on e-learning, and also need to spend large amounts on IT experts because e-learning software is much too difficult for normal users. The best solution regarding this issue is that these institutes should adopt Open Source Software (OSS) such as Moodle, Sakai and WebCT [1]. OSS is almost free, which means that users are free to download, use, modify and even distribute under the terms of the license (the license agreement gives the licensee the right to modify and redistribute OSS)[1]. The financial assets for OSS implementation are therefore almost free.

By adopting OSS technology teachers can provide and share documents and graded assignments, provide quizzes, and use discussion forums, etc. with students, in an easy manner and with useable interfaces. Moodle, in the context of e-learning, is a fine software example of how and why OSS works[1].

OSS is rapidly developing, and new alternatives for non-profit organizations are emerging and growing. Also, OSS is becoming widely adopted by university and educational institutions. Managing an LMS can be a complex task. Moodle does not hide this complexity and its detailed online help, examples and sensible defaults assist users in installing, administering and using the LMS [5,9].

This study has chosen the Moodle software is an area of research and analysis because the result of our comparison in Section 4 proves that Moodle is better than other e-learning systems for the following important reasons [3,5,9]:

- a. Moodle is an OSS that users are free to download, use, modify and distribute under the terms of GNU.

- b. Moodle runs without modification on Unix, Linux, Windows, and any other system that supports PHP. Also, data is stored in MySQL, PostgreSQL, Oracle, ODBC and others.
- c. It allows teachers to provide and share documents, graded assignments, quizzes, etc. with their students in an easy way to create online courses. Also, it supports 75 languages and is being used in 175 countries[1].

Moodle is a fine example of how and why OSS works, but it has some limitations, as follows:

- a. OSS is only for IT experts and is much too difficult for normal users to install and use. More than 66% of Moodle users have identified themselves as teachers.
- b. It seems to be difficult for novice technicians to install and use Moodle because there are many technical word lists in the installation instructions. Therefore, Moodle will work, but not by itself.
- c. Forums contain a great deal of information, but nearly all the Moodle forums are in English[1].

Architecture for Accessing Exercises in Moodle

We choose Moodle as a suitable e-learning software, since its features allow teachers to provide and share documents, assignments, quizzes, etc. with their students, helping students to learn easily and teachers to create high quality online courses. Additionally, Moodle is a practically free OSS [5].

Collaborative learning can be encouraged using different modules and shared material by connecting individual courses together. This system also gives easy access to the teacher and the student outside official working hours, as well as reducing the administrative burden of the curriculum through the utilization of the means and tools.

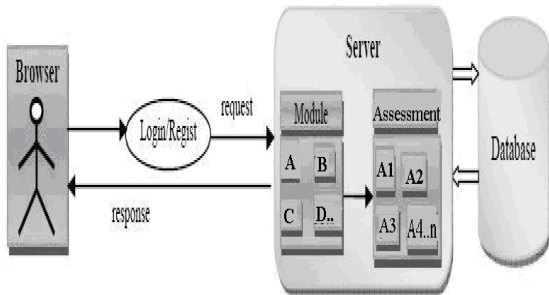


Fig. 2- The Scenario for Exercise Services i.e. assessments in Moodle

As shown in Figure 2, the representation has four components, which are browser, server, login/registry and database. It offers the exercise services for Moodle as a new activity to help students to train themselves anytime and anywhere [1].

Assessments in Moodle

One of the many types of assessments we can do in moodle is the traditional quiz. These quizzes may or may not carry direct weightage to the final score. Adding a short quiz with each topic is a good way for students to test their understanding of the topic before moving on to the next topic/lesson. Moodle provides different question types in a quiz. The fig. shows the example of a quiz [12].

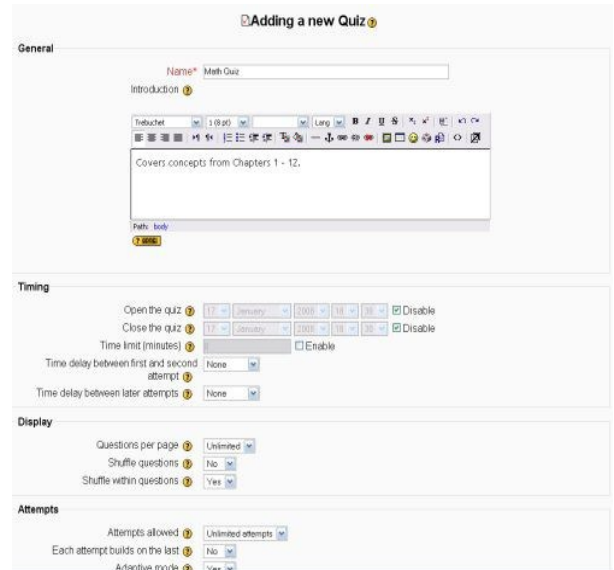


Fig. 3- Adding a new quiz

We can make use of its question banking facility to build a repository of questions on the subject. This will be handy to keep the questions updated based on feedback, to vary the questions in the quizzes from year to year, and even in preparing university or class examination papers from time to time. If we get a set of questions in any electronic form, Moodle has options to upload this to Moodle's question bank; so there is no need to build the question bank from scratch[12]. Similarly, questions can be exported from Moodle for use with other systems or just for keeping record.

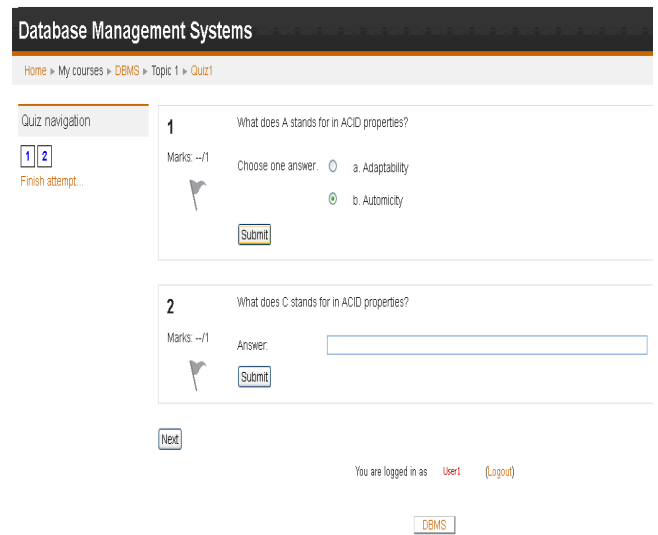


Fig. 4- Quiz module in a course

In the quiz module there are many types of question, which includes true/false, multiple choice, essay questions, etc. Teachers have the right to add, to update and delete all the main functions in the exercise module but students are only able to answer the exercises after choosing the module and section. Students can view the results of each question, at the bottom of question.

Conclusion

This paper is aimed at adding to the new e-learning technology that is far-reaching through academic institutions. An overview covering the broad aspects of e-learning is taken out here. We have tried to introduce the elements of e-learning using the Moodle open source LMS. The activity of exam exercises i.e. activities like quizzes are represented using a scenario architecture. The implementation of such exercises online is becoming a vital aspect in the education process. These assessments can help students to learn in a collaborative environment and thus build in a confidence in them.

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