Towards A Collaborative Web-Based Learning System

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ABSTRACT

The Internet can play an important role in providing education and new opportunities. The availability of the web-enabling technologies has influenced the success of e-learning strategies. The Internet may make the larger world more tangible and give strong foundation to extend traditional learning methods with dynamic learning using web technologies or electronically. E-learning consists of Web-based teaching tools that allow students and instructors access to course materials, assessment tools, activities and various communication options electronically. E-learning continues to work its way into the curriculum of many institutions of higher learning across the country. Focus of this paper is the discussion of the e-learning implementation, including future development and enhancement of e-learning. A review of the literature concerned the role of ICT in enhancing and promoting learning in or using the World Wide Web (WWW or Web) is also included. The e-leaening platform used does provide a paradigm shift in facilitating student-lecturer interaction.

Keywords:
e-learning, Internet, web-based teaching tools, WWW, collaborative

1.0 INTRODUCTION

With the advent of computers and Internet-based education and training; delivery of learning using traditional methods generally has changed. Instructor faced steep learning curves where they have to adapt to the computer age. It is a challenge for most of the lecturer in the university to change from traditional mode of teaching to Internet-based. The Internet is and can be a wonderful tool for lecturers to deliver their teaching material; however how good it is depends also on the topic being taught. Most courses can benefit the Internet as teaching medium but not all can effectively transformed to totally computer-based learning environment. With e-learning, lecturer can distribute the course materials to students by making it available to the Internet.

2.0 E-LEARNING

The term refers to the use of the Internet technologies to deliver teaching that enhance knowledge and performance. The definition of e-learning is based on three fundamental criteria (Rosenberg M.J, 2001):

1. E-Learning is networked, which makes it capable of instant updating, storage/retrieval, distribution and sharing of instruction or information.
2. It is delivered to the end-user via a computer using standard Internet technology.
3. It focuses on the broadest view of learning; learning solutions that go beyond the traditional paradigms of training.

According to Fry (2002) e-learning is defined as delivery of training and education via networked interactivity and a range of other knowledge collection and distribution technologies. What does the 'e' in e-learning mean? 'Electronic' is the standard definition that could be given. However, Elliot Massie offered several alternatives for the letter *e*:

e is fo *Experience* – this is about changing the character of the experience of learning in the organisation or university. Students have the options of time-shifting, place-shifting, simulation; which not necessarrily electronic but increasing the experience level.

e is for *extended* – with e-learning a University can extend the learning options; moving to an ongoing process.

e is for *expanded* – expanding the learning process beyond the limitations of the classroom.

3.0 BENEFITS OF E-LEARNING

The availability of electronic and Web-enabling technologies has tremendous influence on the success of e-learning (Kramer, 2000). The Internet and network-centric computing give a strong foundation

for experimentation with e-learning and extend traditional learning methods through electronic and Web technologies into new dynamic learning models (Eckert et al., 1997; Colette, 2001). The Importance of the Internet to education has increased during the past few years. For electronic learning system to make use of these technologies so as to be successful, effective and of a quality comparable with some of the traditional educational learning systems, the electronic learning system must be designed and constructed with care, using a scientific approach which embraces well-designed procedures and techniques (Colette, 2001). Education and training can be facilitated by e-learning. The advent and widespread use of information technology and in particular the popularization of the Internet and World Wide Web have meant that opportunities have been identified for developing distance learning activity into a more advanced online environment (Furnell et al., 1998). Alexander (2001) believes that using technology in both classroom and distance learning will produce these advantages:

- Improving the quality of learning;
- Improving access to education and training;
- Reducing the costs of education; and
- Improving the cost-effectiveness of education.

3.0 E-LEARNING IN UNIVERSITY MALAYSIA SABAH (UMS)

The advent of the Internet, WWW and the university network make it possible to implement e-learning in the campus network. ICTs resources and infrastucture in the University has been used basically for e-mail communications; Web surfing; internal networking for communications; and sharing of resources. E-Learning is increasingly being considered or deployed worldwide to improve the education process and address problems related to weak collaborative partnerships, declining education standards, rising costs, increasing students numbers and general increased demand for higher education (Stephen M. Mutula, 2002). The use of ICTs in instructional delivery is not new; used of computers and other IT tools to increase student learning has been used long time ago. This is especially in the language teaching i.e English language. Disc technology has long been used for instructional delivery in either a tutorial and exploratory way. The capability of combining the features of video and audio making learning more interesting. Electronic databases is another way how students access information quickly and in a self-paced way. The use of ICTs in the development of electronic reference and learning tools using hypertext, hypermedia making it possible for students and learners to access large bodies of information.

Reworking a traditional classroom to entirely online presentation needs proper planning and implementation. The e-learning initiative in UMS is to support traditional teaching and learning; where the portal is used by the lecturer to post and upload their course materials for the students to access. Which means the online learning is utilized to add-on to traditional classroom presentation. Some fundamental questions addressed during the initial process of implementing e-learning in the university are:

- What advantages would there be to putting the course online?
- What benefits are there for the students?
- What benefits are there for the school and the University?
- What benefits are there for me as a lecturer?

Most lecturer especially senior lecturer questions about the advantages of putting their course online. The lecturer even question about benefit of the method to their students. They are worried if the student will be missing from the class since they can access their course materials online.

The university has selected Blackboard as a platform for the e-learning. As an initial move towards e-learning a training called 'Training for Trainers' has been made to the lecturer. After that a series of training is done and most lecturers has their online materials on the portal. Most has at least posted their syllabus online and a few has made available their notes online. For advance users, they have done interactive multiple-choice quizzes and test via the Internet; and these test can be scored electronically. Alternatively the virtual classroom and electronic bulletin board is used to communicate with the students; especially the bulletin board where the lecturer can post a topic to be discussed and the students will participate in giving their opinion. Other features of Blackboard is the announcement; where lecturer can post their announcement in the portal so that students is well informed about anything regarding the course they are enrolled. The methods for the university e-learning is as an asynchronous program. Students can log on to the portal and access lesson materials whenever it is convenient to them. The lecturer usually will communicate with the students by e-mail or forum/discussion board created by the lecturer. Discussion board is a public bulletin board where anyone participated in the course may post message and others may respond. Delivery of

the message in the discussion is left in the forum/discussion page, remaining available so members may be referred to later. These creates opportunities for student collaboration and greater interaction is possible especially for those who are shy to see their lecturer.

4.1 E-Learning Team

A team for the implementation of e-learning in the university has been formed; the team is broadbased and is representative of each school and institute in the university, including among others: The Vice Chancelor, Deputy Vice Chancelor (Academic), the Media and Educational Technology Unit, School of Engineering and Information Technology and every schools. This is shown in figure 1 below.
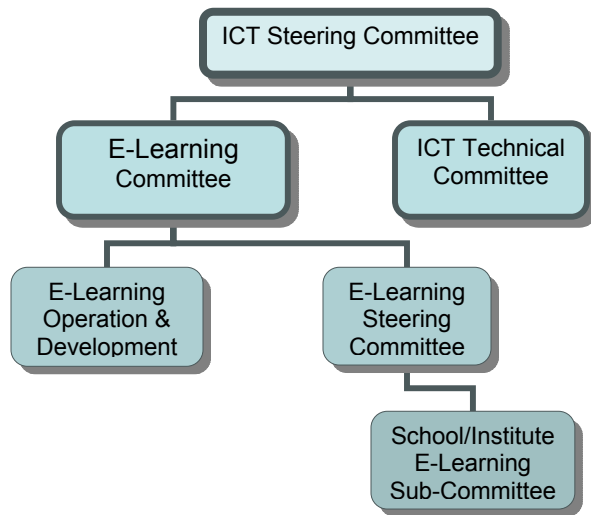

FIGURE 1 : UMS E-LEARNING ORGANIZATIONAL CHART

4.2 Motivating Factors for E-Learning

The use of IT can improve both student and lecturer motivation and attitudes, as they get challenged. E-learning is a new way of learning and teaching; both student and lecturer have to be brave to try new things. This will encourage experimentation and exploration through use of technology. A student is more independent when using technology in their learning process; basically will be more responsible in their study. Tools like announcement, course information, course documents, assignment and discussion board help student engage and learn from each other. They can obtain their course document

before the class and can bring the material in the face-to-face class. An online course component provide sources for supplementary materials for students. The Internet or e-learning portal is used to post assignments and as medium for instructor-student interaction. Electronic mail and discussion board is used to keep in touch with the students regarding their courses.

The instructor can enhance his/her presentation by using multimedia to enhance lessons with the addition of slides presentation, and animation. In this Web-enabled environment, students can access courses and lecture materials, assignment etc-from anywhere. Standard Web browsers offer consistent and seamless user interface across a wide variety of workstation platforms and networks (Young, 2001). Distributing of information is easy by making course materials available on the Internet. Students can just switch on computers, log on to the Internet and go to the appropriate Web page; this encourage them to bookmark the URL and offer much simpler task for students to get course materials.

Student assessments are essential in education in order to know whether teaching methods and course structures are successful. These asessments also determine if student progress is satisfactory. Through web-based learning system, students can access and respond to interactive online quizzes at any time, privately and at their own pace. Since the assesments is computerized, the grading also done by the system and the students receive the answer immediately with meaningful feedback. Futhermore, with online assessment tools, it provides lecturer with many ways to build, distribute and compile information quickly and easily. This way, the lecturer able to assess the effectiveness of the quizzess and also the lessons. These eliminate the tedious job of correcting endless examinations, formulating statistical evaluation and analyzing specific questions. In short, the assesment tools helps to free the lecturer's time spent on course analysis.

In traditional education, students have to be present at the lecturer's room or at the school office to hand in their assignment. When web-based communication tools are available, physically present is no longer an issue. Providing students with communications tools and file uploads, students can submit their assignment via electronic drop-box. This way, the student is not necessarily to physically present to hand in the assignment to the lecturer. It also can remove reliance on physical attendance, especially in group discussion. The students can use the discussion

board without the constraints of meeting together at a specific time, date and location.

Lecturer motivated by e-learning in: identifying and recording of students information through the statistical report that is available for each course; delivery of learning using email, disscusion board (collaborative), and tracking learning and assessment. Web-based educational tools provide many ways to increase communication between class members and faculty, including discussion boards, chats, and e-mails. Researchers have found that adding these elements to a course increases student motivation and participation in class discussions. Students are "more willing to participate due to a measure of anonymity, which serves as a motivator people feel more empowered. They are daring and confrontational regarding the expression of ideas," (Kubala, 1998). The active participation in online discussion will not only motivate the lecturer but also the students. Active participation can reflect a productive students although it is virtual participation. The precious time that can be saved also is one of the essential motivation factor for the lecturer to use e-Learning tools.

4.0 CHALLENGES AND ISSUES IN IMPLEMENTING E-LEARNING

There are many issues to be taken into account when integrating e-learning program with traditional education. The university has to take into account the network capability to effective e-learning; especially the issue of bandwidth and more laboratories are needed for the student to access the portal. It is not an easy work for the lecturer to automatically change to this new way of teaching. There are a few academic staff who are not willing to change and refuse to put their course online; this may be because they don't have personal computer in their room and cannot effectively use the computers for word processing. Lecturer and also student have to be motivated to change. Training is necessary for them to adapt to the use of new technology.

Multimedia is interesting but it will slow down the loading of pages; one will giving up on sites that load very slow because of heavy graphics. Each added components of multimedia requires storage space as well; downloading the components to the their hard drives will create problem unless their hard drive has sufficient capacity to handle multimedia file which is usually a large file. To be able to participate in online learning, a student must have an up to date computer, curent software, sound card, video card, speakers, CD-ROM and good Internet connection either at home or from the university's laboratories. This is especially when the student needs to download course materials developed using three dimensional effects or with heavy multimedia elements.

Class management in e-learning which involve setting up student records, registering student, inputting, storing and manipulating data is important. Complete and accurate records maintained are important in order to make the e-learning a successful one; update information regarding what course the students have registered for that particular semester is very important. Integrating the e-learning portal with academic information need to take into consideration; this is crucial especially when the lecturer has to key in students registration themselves.

Web technology can change the way teaching and learning is handled. However before embarking into this kind of learning it is important to draft a policies regarding e-learning, promote e-learning interest at the university and draft recommendation relating to policy, pedagogy, copyright and intelectual property. Involvement from the top managers in the university is also very important to the successful of the implementation.

The Internet can also be a distraction to the students; they can access, search or viewed other Web sites, listening to MP3 music and this will divert the student's attention from the course objective. Lecturer may find it difficult to control participation of students in e-learning environment. A method to check students' participation will help lecutrer to have an overview of actively participating student. Henry (2001) argues that successful implementation of e-learning requires the same management commitment as other mission-critical organization-wide initiatives. A framework is critical in developing e-learning courses. Provision of the following support and development mechanism constitutes an integral part of an e-learning initiative (Alexander, 2001):

- A vision for e-learning at the institution;
- Development of a technology development plan;
- Development of faculty workload policies which relate to e-learning;
- Maintenance of a reliable technology network;
- Facility for providing technology support; and
- Provision of time release for faculty engaged in e-learning developments.

5.0 THE WAY FORWARD FOR UMS

The Internet can be an excellent means of communication; be it an email communication or other services provided in the Internet. The networking capabilities and latest browsers development has made the Internet go beyond and will grow as the most important communication tools. E-Learning is the appropriate use of ICTs in teaching and learning. UMS is in the process of integrating e-learning strategy into the education process. Instructional technology is very important as it focus on the teaching and learning strategies through the use of modern/advance technology and in establishing portal for learner/students. Lecturer development in the use of the platform (Blackboard), establishment of committee members, e-learning labs, and training are essential factors in order to make e-learning successful and acceptable as teaching and learning method in UMS.

A set of policy regarding the implementation of e-learnig in every courses offered has been developed and implemented in stages. Therefore, those training mentioned earlier, will prepare the lecturers to use and take advantage of the e-learning facilities. At the moment the university has allocate several numbers of lab to be used by the student especially to access the e-learning system. In the future the number of lab with Internet connection will be increased to accommodate growing number of students. Futhermore, the formation of support staff such as help desk, content developers, editors, system specialists, network specialists and the IT department will ensure the e-learning continue to be the value-added in teaching and learning process in UMS.

The involvement of e-learning implementation should not limited only to the academician. This method also can be expanded to other University department such as registrar, treasury, and library. Many information and knowledge can be gathered from these department and upload them to the e-learning website; this will encourage knowledge sharing among the university staff members.

6.0 CONCLUSION

Learning is a lifelong process. Keeping up with technology is a must for every lecturer. Technology is changing the education system and e-learning offers much to learn and interesting opportunities. E-Learning or online learning is here and represents a new and challenging medium for all. Lecturers have to be knowledgeable about online learning; learn how to adapt a Web-based environment and make commitment to keep up with technological advances. Developing an effective, understandable and interesting online course is another challenge. It can actually be a great learning experience for the lecturer. Through the e-learning initiative, UMS actually can make full use of the technology to transform the education process and strategically re-establish the university as a center of excellence within the region and also beyond. This can be done because e-learning will present an open and flexible learning opportunity which should enable mature students and those in employment to access academic programmes. This will also attract former students to further study as a graduate students, gives potential to strengthen and expand research to support the university overall objectives and vision to become centre of excellence.

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