

Constraints in Implementing 'E-Learning' Using WebCT: Lessons from the SEAMEO Regional Open Learning Center

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Abstract

The SEAMEO Regional Open Learning Center (SEAMOLEC) is a centre under the Southeast Asian Ministers of Education Organization (SEAMEO) mandated mainly to promote open and distance learning (ODL) in Southeast Asia. SEAMOLEC activities are mainly on human resource development through training and advocacy, and research in the area of ODL. This paper illustrates the challenges and difficulties in implementing e-learning at the centre. Some issues regarding the implementation of e-learning are the choice of the delivery method, selection and the provision of the technologies, the choice of software, the provision of infrastructure including the availability of the computers (and its connectivity) owned by the learners, preparation of course design, cost effectiveness of the programme and addressing the issue of quality assurance. The example of implementation utilising the *WebCT* Learning Management System is discussed in details.

INTRODUCTION

The Dakar Framework for Action on Education for All (Anonymous, 2000) stated that ICT in the twenty-first century offers new ways of managing the education process as well as delivering particular programme. Such technologies can also help to deliver learning programmes at adult and professional levels, such as teacher education through distance learning (UNESCO, 2002, Soekartawi, 2003a). According to Churton (2001), Anung Haryono (2002) and Soekartawi (2002a,b,c) distance learning programmes can provide adults with another opportunity for education by reaching those disadvantaged individuals constrained by time, distance, or disability, and at the same time provide the opportunity for updating the knowledge and skills of workers at their places of employment. Further, Churton (2000) argued that distance learning if designed properly can provide the opportunity and access to educational programmes on a local, national, and global arena.

The advantages of distance learning led to the tremendous and diversity in distance learning industry (Soekartawi et al., 2002; Soekartawi, 2002d,e,f). In Southeast Asia, the growing number of students at the distance learning institutions such as in Indonesia - the Open University Indonesia (*Universitas Terbuka*), in Malaysia - The Open University Malaysia, Universiti Sains Malaysia (USM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Technology Mara (UiTM), in Vietnam - Yangon University of Distance Education Myanmar, Hanoi and Ho Chi Minh Open Universities, in Philippines - University of the Philippines Open University (UPOU) and in Thailand - Ramkhanhaeng and Sukhothai Thanmmathirat Open Universities are evidenced. For example, the number of student enrollment in the Yangon University of Distance Education Myanmar was 134 thousands in 1994 and increase to 199 thousands in 1999 or an increase of 48.5% within 5 years period or an increase of 9.7 % annually (Min Than Thoung, 2001). In addition, the number of student in the *Universitas Terbuka* Indonesia was 65 thousands in 1984 and increased to 350 thousands in 1998, an increase of 438% within 14 years or an increase of 27% annually (Pribadi & Rosiata, 1998).

The Information and Communication Technology (ICT) is a major contributor to the dramatic transformation in distance learning. In many cases, the implementation of distance learning the capabilities of computer is utilized. With the online technology the term ‘on-line learning’ or ‘e-learning’ emerged which basically means the educational material that is presented on a computer. UNESCO defines on-line learning or e-learning is the learning through the use of computers. Thus, on-line learning is always connected to a computer or having information available through the use of computer (UNESCO, 2002). Jackson (2002) on the other hand argues that it is difficult to define ‘on-line learning’ because different people may have different ways in interpreting. Jackson proposes that on-line learning would be appropriate if the distinction between Technology-Enhanced Learning and Technology-Delivered Learning is made. Since on-line learning is generally used in distance learning, he therefore prefers to use ‘Technology-Delivered Learning’ for defining on-line learning. In the Technology-Delivered Learning, learner audience is never (or very rarely) in physical proximity to the instructor, and the course materials may be delivered via the use of asynchronous and synchronous technologies.

The advancement of the ICT has led to the development of the Learning Management System (LMS) that integrates the course and students database in the learning activity. There are numerous proprietary LMS and open source LMS currently available and the *WebCT* is one of most widely used LMS throughout the world. The Southeast Asian Ministers of Education Organization (SEAMEO) Regional Open Learning Center (SEAMOLEC) currently uses the *WebCT* for its trainings because of the following reasons (Soekartawi, 2002g):

- *WebCT* is considered to be user friendly and it is relatively easy to learn within the short period,
- *WebCT* is an integrated set of tools for developing and delivering interactive course or course components over the Web. It is relatively easy accessed in the internet.
- *WebCT* offers a range of tools that can easily be selected and added to the course. These tools can then be used to design or customise a course, add content & assessment tasks, give feedback on progress and assignments, manage student records & track of the student progress.
- *WebCT* facilitates online communication between teacher and student.

Like others LMS besides some strengths, the *WebCT* has also some weaknesses. The objectives this paper are to share the experiences in facing up the challenges in the implementation of the *WebCT* LMS as the technology delivered learning for promoting distance learning at the SEAMOLEC.

SEAMOLEC EXPERIENCES IN IMPLEMENTING e-LEARNING USING *WebCT*

In many educational institutions especially in Southeast Asia, e-learning or online learning is highly demanded. The best way to meet these demands is with a strong course design that is developed on time, within budget, and at the desired level of quality. It is found that one of the critical factors in the online course delivery is design issue. This is to say that whether the course design has achieved the expected output or otherwise. As such the designing an online learning program is an exciting challenge (Bullen, 2001; Elangovan, 1999, Soekartawi, 2003b).

In order to meet the need of the learners, and due to its flexibility, designing on-line learning can be done through:

- *Tailored to individual learning and working styles*
Instructor can provide alternative presentations of material based on users' preferences. For instance, some learners prefer to learn first, then try the questions; others prefer the opposite.
- *Experiential*
Through simulations of real-world experiences, instructor can design learning situations that let learners try out various approaches and observe the implications of their actions.
- *Participatory*
Although many on-line learning programmes look like electronic page-turners, many others allow users to fully participate in the learning experience. Synchronous tools allow questions-and-answer sessions with experts and discussions. Asynchronous tools allow interactive case studies and simulations, in which participants receive information about a problem one piece at a time and make decisions about how to proceed.
- *Patient*
Through effective design of exercises and quizzes, instructor may pinpoint the most likely problem that learners encountered in mastering the learning material and provide them with alternative explanations and subsequently exercises until they master the concept.
- *E-learning Platform*
The right use of platform is important and needs to be taken into account. This is not only in terms of license fee but also whether or not the platform suits the course offered.

There are a few e-learning platforms available at SEAMOLEC and one of the mostly used platforms in SEAMOLEC e-learning trainings is the *WebCT*. At the end of every training sessions, evaluation were conducted. It was in these evaluations that the issues pertain to the use of the *WebCT* were elucidated. The summary of the evaluation is discussed in the following section.

CONSTRAINTS IN IMPLEMENTING e-LEARNING USING WebCT

Accessibility

Connectivity

In many countries problems of connectivity are still encountered by students. Some problems are related to the availability of telephone line, electricity and internet connection. The cost of paying telephone as well internet bill is considered expensive. There many internet-cafe but mostly in big cities.

Selecting Technologies

In delivering the online learning materials, the organisation would normally use the existing network system and infrastructure. Experiences indicate the basic components of an online network as follows:

Server computers

Server computers are central computers that most users within the organisation have to access. Organisations typically store commonly used data and programs on servers, such as lectures, training courses, etc.

Client computers

Client or student computers are the individual computers in learners' offices or homes. These are typically the computers used by learners.

Connections between the computers

The connections involve hardware. The hardware varies, depending on the size and location of the network. If linking the client and server computers is in the local area network (LAN), then the organisation installs the network within the building that send information back and forth among the computers.

Computers (and Hardware) Owned by the Learners

The last consideration in delivering on-line learning programmes is the types of computers that the learners have. The constraints related to this computer is the configuration that consist of processor, main memory, storage, monitor and network connection. Not all users have very good PC configuration. Some students do not have computers and use the university computers or computers that are available in the Internet café.

Software Tools

The connections also involve software. The software includes the learning program, such as a unit of information in a course, an e-mail message that's part of an online discussion, or a transmission of a video image. To make ensure that the computer received the information and able to process the information it received, many software publishers use some common formats. Another set of software prepares packets of information to be transmitted over the network, identifies its destination, sends, and unpacks the information.

The Internet is the most widely used in online learning. Some of the most common elements of the Internet that affect the on-line learning are Independent Service Providers (ISPs), browsers, intra- and extra-nets, firewall, and server. Although multimedia touches, like graphics, audio, and video clips enhance an online learning programme, they require that a lot of information be sent with them on the network and, therefore, are slow to transmit given current technologies. However, if all of users posses the high speed connection to the Internet, the network has a much larger transmission capacity (bandwidth) and this allow the transmission of these files (Mulvihill, 1997). The constraints pertaining in an online programme are generally related on the capability of IPS, browsers, intra- and extra-nets, firewall, server as well as bandwidth.

Human Resources

Problems related to human resource may be grouped into two categories, namely (a) Skills and knowledge, and (b). Attitude. There are instructors and students without sufficient skills and background knowledge on computers or IT. Therefore the e-Learning training related to the enhancement of basic knowledge of computers and IT is imperative before the commencement of the e-learning programme.. The second issue related to the attitude towards IT' can be overcome by regular exposure to the IT. Not many instructors and students are happy with new technology and therefore have negative attitude towards it. Regular exposure on the use of the IT' are known to minimize this negative attitude.

COST-EFFECTIVENESS OF THE PROGRAMME

The SEAMOLEC experiences indicate that one of the main issue of the online course is whether or not the on-line course is cost effectiveness. Soekartawi & Sudirman (2003) has reviewed the costing in offering distance learning in many distance learning institutions. Jackson (2002) suggests that it is difficult to judge whether on-line learning is expensive or not. This is partly true as users may use the available resources in the Internet with free, but others may spend money to get the access through Internet. Beam (1997) has also reviewed the cost effectiveness of on-line learning. They suggest that when assessing the feasibility of online learning for an organisation, the following issues need to be looked upon:

- *Financial feasibility*
On-line learning programmes often require significantly more funds to develop than the types of information currently in use. They tend to justify themselves in the reduced cost of delivery.
- *Access to computers*
On-line learning happens on computers; learners must have access to them. Most employees have computers at their desks. Many other types of employees do not. Thus, make provisions for the computers before the programme will be feasible.
- *Environmental issues that promote or hinder use of the program*
Some of the on-line learning programmes are intended to be used on the workplace. Others are intended to be a specialised learning event.
- *Previous experience with computers*
People cannot use the on-line learning if they don't know how to use the computer. If the online learning are intended for users without previous computer experience, a computer literacy training must be included as part of the effort.
- *Previous experience with on-line learning*
If the users have a positive previous experience, they will more readily accept an on-line course than with user with negative experience. The management personnel with unsatisfactory experiences with on-line learning in the past often also resist future efforts. In this case, feasibility studies is imperative before the commencement of the online course.

Other issue related with cost effectiveness is the cost of license. Information related to the license fee is also not readily available. This is the major factor to be considered when embarking for the online courses.

POLICY SUPPORT

Policy support may be grouped into two, namely (a). Law related to e-Learning, and (b). Policy in implementation that include special rate for telephone or internet used for e-Learning, accreditation for e-Learning, etc.

PEDAGOGICAL ASPECTS

Course Design

Even though the SEAMOLEC alumni have been given the training on how to run and manage the online learning, the problems in designing, developing, and administering on-line learning programme still persist. Hashim et al., (2001) and Lieux, (1996) suggest the general processes in designing online learning are:

- Conduct a needs analysis
- State objectives
- Design the evaluation
- Choose the medium
- Develop the course (or choose an off-the-shelf course)
- Conduct a formative evaluation
- Revise the course
- Produce the course materials
- Distribute the course materials
- Conduct post-course administration (testing, enrollments, record-keeping), and
- Maintain the course.

It is quite often found that one of the critical factors after finalising the online program is design issue, whether the programme suits the expected output or not. This is because online learning programs that replace classroom courses can be more flexible and offer more opportunities for enrichment and review.

- Online learning programs based on workplace applications provide a more comforting level of support for work activities than the traditional practices.
- Online learning offers unique opportunities. These techniques include gaming-simulation, discovery learning, experiential learning, and personalised remediation.
- Finally, online learning offers many design challenges. Because online programmes offer flexibility to learners, course designers must consider each possible path that a learner might take and design it appropriately.

Quality of the Program

One the biggest issue in on-line learning is quality issue both in the program and the student being produced by the programme. This is understandable since teachers and students are never or very rare meet one another. They are separately by time, location or both. The International Council for Open and Distance Education (ICDE) has conducted several audits of Open and Distance Learning programmes. In the programme called the ICDE International Accreditation and Quality Assurance, ICDE has conducted an audits in three areas as follows (Reidar Roll, 2003):

- The effectiveness of an institution internal-quality assurance structure and mechanism
- The accuracy and reliability of the information that an institution publishes about the quality of its programs, services and standards, and
- The institution internal-quality assurance processes at work at program and institution level

To answer the issue of quality assurance, The Western Governors University (WGU) has developed a system where quality control requires the successful completion of an externally administrated, criterion-referenced assessment instrument for awarding certificates and degrees. Seven items have been developed by WGU (1999) are as follows:

- Establish reliable and valid performance measurements for distance learning
- Require providers to substance evidence of contact between faculty and students
- Require evidence of effective instructional techniques
- Promote systematic efforts for selecting and training faculty
- Assure the availability of learning resources
- Promote on-going monitoring and enhancement of the technology infrastructure of institutions, and
- Focus attention on the development of courseware and the availability of information.

CONCLUDING REMARKS

The power of information technology and the emergence of on-line education allow students regardless of location a much wider array of choices in education. The students can study with greater flexibility. The *WebCT* is one of the online learning platforms that are often used by the SEAMOLEC. It is user friendly and it is relatively easy to learn in the short period. It has a set of tools for developing and capable of delivering interactive course over the Web. The range of tools

can also be easily be selected and added. These tools can then be used to customise a course, add content and assessment tasks, give feedback on progress and assignments, manage student records and track of the student progress. The *WebCT* also facilitates online communication between teacher and student

However, there are challenges that may be encountered in the implementation of the *WebCT* as a delivery mechanism. Motivating students to be active learners and encouraging students to be active in assessing the programs are the critical factors. The following are factors to be taken into account in managing on-line learning: (a). Choosing delivery method, (b). Selecting and providing supported technologies, (c). Selecting software in the Internet, (d). Providing the infrastructure including computers (and its connectivity) owned by the learners, (e). Preparing course designs, (f). Identifying the cost effectiveness of the programme, and (g). Anticipating the issue related to quality assurance. There are number of advantages of the *WebCT* as a learning platform but care should be taken into account to suits the needs of the users. It is also suggested the need of feasibility study to elucidate whether it is technologically feasible and there is a return of investment.

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