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INTEGRATED E-LEARNING AT OPEN UNIVERSITY MALAYSIA

1.0 INTRODUCTION

The demands of globalisation and liberalisation, have led to a growing need for flexibility in higher education delivery, particularly in the last decade or so. Flexibility, in this context, not only relates to its traditional definition of learning at any time and any place, but more importantly, its ability to customise learning to meet individual learner needs. In this regard, it is very apparent that there is a marked movement from the supply-side "same-for-all" education to the demand-side "just-for-me" education. This learner-centered approach adopted by many successful higher education institutions provide learners with personalised learning programmes with different delivery modes and different levels of support services.

This awareness has led to the rapid growth of open and distance learning or ODL institutions to cater to the needs of the countries' human capital development and lifelong learning. The potential market for lifelong learning, in particular, is huge given the lack of access to higher education that we witness in many developing countries. The Conference Board of Canada (1991) has estimated that 'knowledge workers' require at least the equivalent of three months education or training every five years just to stay competent in their field.

The advent of technology, particularly the Internet and now the mobile technology, has enabled ODL to enhance further its role in providing mass yet customised education for all. E-learning has extended learning to take place beyond the confines of the four walls of the classroom. It has also enabled us to take advantage of connectivity, connections, and content-

distribution capabilities to give our learners alternatives for pursuing their academic ambitions via online courses and programmes. In addition, e-learning has made it easier to update outdated or inaccurate sections of learning materials. In addition, because ICT can enable teaching and learning from anywhere and at anytime, it is seen as an effective means to provide lifelong educational opportunities (Blurton, 2002). Perhaps, the most valuable contribution of e-learning to higher education is allowing customisation and personalisation of learning to meet the specific needs of learners – "just the right content, on just the right device, for just the right person, at just the right time" (Wagner, 2005).

From the organisational perspective, e-learning has enabled the provision of seamless support for faculty, students, and staff alike using a common e-learning platform. At the same time, it has allowed monitoring of learner and instructor performance and creation of learning content management systems (LCMS) that have helped to anticipate the needs for interoperability and learning technology standards, digital rights management, and content repositories. In short, e-learning had opened up immense possibilities for delivering knowledge and information to learners, increased the pace of learning and, in doing so, extended the boundaries for knowledge transfer (Finn, 2002).

2.0 INTEGRATED E-LEARNING

Notwithstanding the above, many experts do not believe that a unilateral approach of using technology to support learning will be successful. Instead, e-learning will be effective if it is implemented in an integrated

manner which incorporates the following three critical conditions (Jochems, Merrienboer and Koper, 2003: 2 and Spector and Davidsen, 2000: 243).

1. Integrated e-learning has to take pedagogical, technical and organisational aspects into account;
2. The best approach to teaching and learning is the "blended approach" where e-learning is combined with self-managed learning and face-to-face interactions; and
3. E-learning should be learner-centered whereby the learners would be the primary focus of attention as opposed to the traditional emphasis on the instructors.

The experience of some institutions have indicated that overwhelming emphasis on pedagogy such as constructivism, problem-based learning, higher-order thinking and others but without adequate technological support and organisational commitment will not achieve the desired results. On the other hand, heavy reliance on technology without well-defined pedagogy and strong organisational support will result in an ineffective learning process. With organisational commitment but without adequate technology and appropriate pedagogy, it will lead to ineffective delivery system and compromised learning outcomes. Thus, it is essential that all the three aspects of e-learning be incorporated so that the goals of an education system are achieved.

In addition, for e-learning to be effective, it must be combined with the other forms of learning, usually self-managed learning and face-to-face interaction. This

"blended pedagogy" has proven to be the most effective learning system and no amount of e-learning, however advanced it may be, will ever replace the other forms of learning. Finally, any form of learning has to be learner-centred, thus allowing the learner to maximise his or her learning potential and experience. In this regard, e-learning is no exception. The current demand-led education requires that the entire education system be tailor-made to meet the diverse needs of learners. For e-learning to be effective, it has to abide by this inexorable requirement.

3.0 INTEGRATED E-LEARNING AT OUM

Having explained the meaning of integrated e-learning, it is worthy to note that Open University Malaysia (OUM) is one of the first higher education institutions in this country to practice this integrated e-learning approach in its teaching and learning process. OUM was set up as the seventh private university in Malaysia on 10 August 2000, established as a unique model for managing a modern-day university under the stewardship of a consortium of 11 public universities. Being the first university to practice Open and Distance Learning (ODL) in Malaysia, the establishment of OUM with its motto, "Education for All" marked a new beginning for the democratisation of education in Malaysia. This indeed allows a paradigm shift in the country's higher education environment permitting a larger number of working adults to continue their search for knowledge and higher levels of competency in OUM.

| Item | 2001 | 2008 |
|---|------|--------|
| Enrolment | 753 | 67,614 |
| Number of programmes | 4 | 50 |
| Number of modules (Printed, CD and Web-based) | 29 | 368 |
| Number of Learning Centres | 12 | 61 |
| Number of Tutors | 100 | 7,440 |

Table 1: Progress of OUM

Table 1 shows the progress of the university from its first humble intake of 753 students in August 2001 Semester to over 67,600 in the current September 2008 Semester. Out of the total enrolment, over 30,000 are teachers while more than 37,000 are from the open market. Since OUM caters primarily for working population, 95% of its students are working adults. To date, OUM has produced 8,895 graduates in multi-discipline areas such as business, information technology and education. A tracer study was conducted by the Ministry of Higher Education (MOHE), Malaysia in 2006 on the graduates of all universities in the country where the graduates were asked on their ratings on a set of services provided by their alma mater. In most of the services rendered, OUM graduates had given relatively high ratings for OUM compared to the other universities. This is a positive achievement since OUM is relatively young when compared to the other universities who had been in existence for many years.

3.1 Integrating Pedagogy, Technology and Organisation

Since its inception, OUM takes into consideration pedagogical, technological and organisational aspects when designing its e-learning system. This is important as the university gives substantial focus to quality education. For example, to develop its e-learning content, it forms a team comprising of subject matter experts (SMEs) and Instructional Designers (IDs) to design an appropriate pedagogical approach. Subsequently,

Programmers and Multimedia Experts examined the technological perspective. The Information and Communication technologists then scrutinised the ICT requirements and recommend the appropriate technological infrastructure and systems. Organisational commitment is shown by the amount of investment in ICT-related infrastructure, equipments and software to ensure that the entire content development process does not suffer any glitches.

3.2 Blended Pedagogy

One of the strengths of OUM as a higher education institution lies in its delivery mode. To ensure flexibility, accessibility and affordability, which are the cornerstones of ODL, OUM has embarked on the blended mode of delivery which comprises of three different but complimentary delivery modes: Self-managed learning, face-to-face interactions and online learning (see Figure 1). A model for Collaborative Online Learning (COL) was developed to support the interactive online curriculum as an extension of the traditional face-to-face learning. The learner interaction via online, like learner interaction in the face-to-face tutorials, is an important component of its blended approach to learning besides the self-managed learning which is made possible by making the printed modules, electronic software and digital collection available to learner community. With the understanding that learners have different styles, approach and pace of learning, this combination makes it very attractive to the learners.

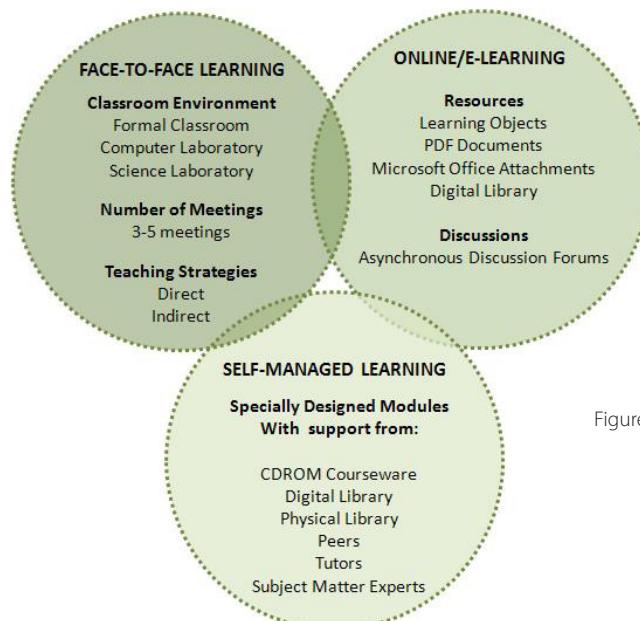


Figure 1: Blended Pedagogy at OUM

- *Self-Managed Learning*

Self-managed learning at OUM revolves around its printed modules and other complimentary courseware. OUM printed modules are written by SMEs from universities as well as industry and are internally developed by OUM's own Centre for Instructional Design and Technology (CIDT). To meet the high demands for quality learning materials, currently, OUM employs 12 instructional designers, 8 graphic designers, 6 desktop publishers, 3 audio and video specialists, 3 multimedia programmers and one 3-D animator. The quality of OUM's modules was proven when Pearson Publishing House agreed to print them for sale to the general public. In this regard, it is not completely surprising that one of these modules, "Learning Skills for Open and Distance Learning" received the Award for Excellence in Distance Education Materials by The Commonwealth of Learning (COL) in November 2006.

- *Face-to-Face Interactions*

To complement self-managed learning, OUM also provides regular face-to-face interactions which are conducted at its learning centres. Currently, OUM has 10 regional and 51 local learning centres distributed all over the country. These centres are well-equipped with computer laboratories with internet connection, a physical and digital library, classrooms, and other facilities to ensure a conducive teaching and learning environment. Using these centres, OUM brings education to its learners' "door-steps". An equally important aspect of OUM's face-to-face interaction is its part-time tutors. Apart from the face-to-face tutoring, these tutors facilitate online learning for learners which is conducted using OUM's learning portal, myLMS or Learning Management System. To enhance the performance of its tutors, an intensive tutor training programme, which expose them to myLMS, Online Mark Entry System (OMES), and online resources (Digital Library). The programme also trains the tutors in the area of academic advising and learner counselling. No tutor is allowed to teach unless he or she has gone through the mandatory training programmes.

- *Online Learning*

The third and final component of OUM's blended pedagogy is online learning. In this regard, OUM has spent a considerable sum of money on setting up the necessary ICT infrastructure and systems to enable it to realise the concept of learning for anyone, anytime and anywhere. Our e-learning management system (myLMS), which is internally developed, has gained

wide recognition and acceptance among the local and international institutions of higher learning. Some of the local public universities have purchased and used myLMS. To date, myLMS is being used by more than 100,000 users. MyLMS contains i-Tutorial, i-Radio and learning objects which are very well received by our learners. In November 2006, OUM received The Asia Pacific ICT Awards (APICTA), initiated by the Multimedia Development Corporation of Malaysia (MDeC) for Best of Education and Training in E-Learning. At the same time, OUM is collaborating with the Ministry of Higher Education (MOHE) of the Kingdom of Saudi Arabia (KSA) to establish a National E-Learning Centre in Riyadh using myLMS as its e-learning portal.

OUM's Tan Sri Dr Abdullah Sanusi Digital Library provides the necessary online resources to our learners. Currently, it holds more than 23 multi-discipline databases consisting of e-books, e-journals, e-dissertations and e-newspapers, which are accessible from anywhere in the world. It is very heartening to note that the use of this online library has increased almost six-fold from 33,516 hits in January 2004 Semester to 196,109 hits in September 2007 Semester.

- *Total E-Solution*

An equally important aspect of ICT is the provision of a fully integrated E-Solution. This is necessary to ensure that information is timely and accurate. In this regard, OUM has put in place a complete and fully integrated system comprising of Student Information System (SIS), Human Resource Information System (HRIS), Financial Information Systems (FIS) and Management Information Systems (MIS). ICT Services Department is the back-bone of OUM's information and communication network. Apart from ensuring that OUM's internet connection is up 24x7, it has also developed and enhanced OUM's management information system. In 2006, OUM spent RM20.9 million (nearly 20% of total expenditure) on ICT, of which RM17 million is in the form of capital expenditure to enhance its ICT services. This amount of spending clearly represents OUM's organisational commitment to develop an effective ICT infrastructure and provide a full-range of ICT services to its ever growing number of learners.

4.0 AWARDS FOR EXCELLENCE IN E-LEARNING AND ODL

OUM efforts in promoting e-learning and ODL have received several commendations as evidenced by the following awards:

- Excellence in Education Management – Provision of Continuous Education from Technology Business Review, Kuala Lumpur, September 2006;
- Research: Best Research Paper on Plagiarism Detection using ICT at AAOU Conference in Kunming, China, October 2006;
- myLMS: Runner up for Asia Pacific IT Award, from Asia Pacific ICT Association, Kuala Lumpur, October 2006;
- Learning materials: Best learning materials award from Commonwealth of Learning (Learning Skills for ODL), Jamaica, November 2006;
- E-Learning Recognition from Eszterhazy Karoly College, Hungary, November 2006; and
- Merit Award: MSC Asia Pacific IT Award, Best for Education and Training, December 2006; and
- Excellence in Education Management from Technology Business Review, Kuala Lumpur, October 2007.

In addition to the above, the following departments of OUM have received MS ISO 9001:2000 Certification:

- Registry
- Centre of Instructional Design and Technology (CIDT)
- Digital Library; and
- Centre for Student Management (CSM)

5.0 ISSUES IN E-LEARNING

While OUM had been successful in implementing its e-learning, there are still some issues that it has to grapple with. Some of these issues are beyond its control, while for others it has to continue improving upon. The issues are:

5.1 Digital Divide

The statistics on ICT usage in the country indicate that the use of ICT is growing at a rapid pace. However, there is still this problem of digital divide, primarily due to income disparity and unequal regional socio-economic development. In the Ninth Malaysia Plan, 2006-2010, the Malaysian Government is committed to bridging the digital divide by focusing on implementing an infrastructure plan for universal access to the internet under its National Strategic Framework for Bridging the Digital Divide (BDD).

5.2 E-learning Content

From the internal perspective, currently, only about

30% of the modules in OUM have e-learning content. Definitely, this ratio needs to be increased. Efforts have been undertaken to increase e-learning content in our modules. OUM's target is to achieve 100% e-content by the end of next year and a sum of RM4.5 million has been allocated in its 2008 Budget for this purpose.

5.3 Training of Learners and Tutors

Insofar as the training of face-to-face learners is concerned, OUM has done very well. Its tutor training programmes have been very well designed and very effective. However, efforts are being made to further improve the training of online learners. They have to be equipped with skills not only in providing guidance on learning per se, but also on the academic advising and even personal counseling, where appropriate.

6.0 WAY FORWARD

As mentioned above, OUM has been successful in implementing e-learning by effectively incorporating it as one of the components of its learning delivery mode. However, as in any learning and growing organisation, there is always room for improvement and OUM will continue to enhance its role in contributing towards the democratisation of education. This is in line with the recommendation that OUM as one of Malaysia's primary providers of distance education continue to offer e-learning opportunities to help the nation create a knowledge society and promote national knowledge and economic growth (Muhammad and Yusuf, 2004). To ensure that OUM stays ahead in terms of providing an integrated e-learning solution to its learners, the following will be undertaken:

6.1 Developing Quality e-Learning Infrastructure and System

OUM will continue developing effective, engaging, sustainable and quality e-learning system to provide not only greater but faster access to our learners. Its aim is to make available the best online learning portal that will serve all the learning needs of our learners. Apart from the learning management system, OUM will continue to enhance its ICT infrastructure. At the moment our main campus and our own regional learning centres are wirelessly connected to the Internet.

6.2 Moving into New Modes of Delivery

In line with the fast growing mobile usage in the country, OUM is in the process of widening the use of mobile phones in its delivery system. Currently, mobile technology is used to inform learners of their examination results and automatic calls for academic

advising and counseling for "at risk" learners. This function will be further expanded to include the sending of learning materials using mobile phones. OUM is also embarking on i-TV in 2008.

6.3 Development of an e-Learning Culture

OUM will continue to inculcate a rich e-learning culture amongst its learners, staff and the general public. As part of this effort, OUM will continue to develop engaging e-learning contents as a supplement to its printed modules. Efforts are currently being made to do just that and OUM hopes to achieve 100% e-content in 2009 from the current 30% in 2008.

6.4 ODL Skills Module for Learner Training

We will continue enhancing our coveted ODL Skills Modules to further assist our learners in their learning. New sections on mobile learning will be added to take care of this mobile learning technology, i-radio and i-TV.

6.5 Tutor Training

As mentioned above, new elements of academic advising and counseling will be incorporated in the training modules.

6.6 Collaborate as Partners

OUM will continue to seek collaboration with interested organisations. It believes that there is no need to reinvent the wheel. It is willing to learn from others and at the same time offers itself to assist with the organisation, formulation, planning, testing, implementation and monitoring of e-learning delivery system for any university or institutions of higher learning, particularly those who are new and have to go through an e-learning process and experience similar to ours. In short, OUM will continue to leverage on each other's strength through sharing of our valuable experiences. This is in line with the education trend in the 21st Century where there is increased interest in partnerships - between the business world and the academy (Conway, 2003 and Kovel-Jarboe, 2000) and among different higher education institutions, especially around issues such as technology, where resource constraints encourage this type of complex collaboration (Conway, 2003 and Kezar, 2000).

7.0 CONCLUSION

OUM's experience, since its first intake of learners in August 2001, indicates that integrated e-learning in ODL has proven to be a viable and complementary alternative

to the traditional campus-based delivery mode in higher education. It has enabled OUM to contribute towards the country's democratisation of education as well as enrich its learners' learning experience by enhancing the quality of its delivery system. The demands of globalisation and liberalisation require that e-learning is implemented as part of a totally integrated education system driven by pedagogy, technology, organisational commitment, blended pedagogy and learner-centeredness. The failure to incorporate any of these aforementioned elements will lead to ineffectiveness and wasteful utilisation of resources in this increasingly challenging higher education environment.

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