

EFFECTIVE TEACHING AND LEARNING THROUGH DIGITAL COURSE CONTENT DEVELOPMENT: A UITM MODEL

Mohd Nor Mamat , Mohd Nor Hajar Hasrol Jono , Azlan Abdul Aziz , Nurmaisara Za'ba
MARA University of Technology, Shah Alam, Malaysia
mohdnoor@salam.uitm.edu.my, hasrol@tmsk.uitm.edu.my, azlanaa@tmsk.uitm.edu.my,
maisara@tmsk.uitm.edu.my

ABSTRACT

Electronic Learning (e-Learning) is not new in today's education system. The success of e-Learning application depends not only on the info structure and the Learning Management System (LMS) but also on the content fulfillment to be uploaded and downloaded. Dependency on the system and the info structure does not cater to the successful teaching and learning process without the distributed and accessed information or the module. The lackluster of the content fulfillment in the smart school project serves as a reminder that a proper and thoroughly thought out plan on training and digital content development must not be overlooked. In the realm of tertiary education, the requirement for online learning is of great relevance in line with the society needs to have tertiary education due to the constraint of campus capacity. UiTM is a unique university with 12 branch campuses and over 150,000 students around Malaysia. The question is actually to gauge on the content development for huge number of users, considering user-friendliness, efficiency, effectiveness and meet the humanistic aspects at the same time. Therefore the issues of technology and facility, infrastructure as well as the capability of the lecturer are in questions requiring fast and continuous solution. This paper intends to share the experience of developing LMS in UiTM and the challenge in providing effective digital course content throughout the whole university. The focus of this paper is the successful attainment of the objectives in the e-Learning development plan that is efficient, effective and cost-friendly.

Keywords: e-Learning, content, LMS

1. INTRODUCTION

The beginning of the Internet in the 80's brings forth the advent of electronic learning mode in the Malaysian society at large. Electronic learning or e-Learning began when the use of electronic medium material in the teaching and learning environment even before the introduction of the Internet. Of late, e-Learning is characterized as the life long learning mode thus receiving the accolade and warm reception of the global community. Society begins to comprehend the importance of knowledge and information hence the acceptance of the e-Learning concept as the contemporary learning model of the future. E-Learning at its fundamental value is defined in a myriad of perspectives. However, it can be categorized as learning through the use of electronic materials, computer based learning, online learning, virtual learning and many others. Basically, e-Learning is the contemporary

learning style that uses the electronic medium comprehensively including the implementation of a learning management system.

2.i-LEARN PORTAL

UiTM started its first phase e-Learning development project in the early 1990's with the complete involvement of Mesiniaga. This was followed by the second phase, utilizing a different vendor, at the branch campuses throughout the country. It was then succeeded by the third phase with the cooperation of lecturers responsible assuming the role of the subject matter expert, graphic and instructional designer, programmer, animator typist and the likes. The first and third phase incurred an enormous cost, thousands of Ringgit, with only a few courses successfully developed. Raja Maznah Raja Hussain (2005) discovered that the e-Learning development at the

institution of higher learning in Malaysia still depended on the ICT professional experts and not the academia hence the technocentric characteristic rather than pedagogic or andragogic. But this did not influence the LMS development in UiTM which focused on the academia functioning or serving as contributors and content developers with the andragogic mindset. Then the fourth phase witnessed the UiTM shift to the Open Source application by developing its own LMS with the assistance of a vendor who trained the in-house experts with a far more reduction in cost. This has solved the main obstacle in each LMS development that is the finance limitation (Raja Maznah Raja Hussain; 2005). The reduction in cost provided more advantages by giving more exposure to the academia in terms of comprehensive teaching technology application and enjoy the return in the form of high academic professionalism. These fulfill the criteria of excellent and effective e-Learning application. Since the middle of 2005 until March 2006, about 80% of the total 4000 university lecturers have been online by providing more than 600 learning materials from the total courses offered. This achievement is something to be proud of because the development was made possible by using the in-house experts namely the academician themselves who truly embrace the education concept as well as the teaching and learning methodology. This feat became the answer to the ever-increasing technocentric concern on the development of learning materials. The university LMS was developed on an acceptable budget but nevertheless able to include almost all courses comprehensively with the aid of the academicians in their maximum capacity/involvement without any burden. The adoption of Open Source with the suitable interface is inline with the university's image and requirement, myriad of contents (buffet approach) from as simple as these formats i.e. .doc, .ppt and .xsl or .pdf to the flash format (.swf) and executable format (.exe), static, dynamic or interactive approach depending on the level of requirement have bring tremendous recognition and success among the university community. At the same time it was designed with the systematic and comprehensive instruction principles thus

fulfilling the e-Learning requirements (Smith; 2005) as well as that of Macromedia, the World Summit of Information Society and Open Source. From the perspective of the system application, this LMS is connected directly to the Student Registration System (iSIS), Timetabling System (ICRESS), Student Portal (i-Student) and the Staff Portal (i-Staff) of the University. This further enhanced the existing quality of the LMS providing great usability and integration without isolation. Among the future development are the campus wireless network facility (a project by the Ministry of Higher Learning and the UiTM Staff Cooperative), continuous training regarding campus wide learning technology all over the nation, upgrading the server capacity at each faculty and branch campuses as well as other strategic plans towards continuous improvement of the current system. Since its inception in December 2005 until mid 2006, the i-Learn Centre in UiTM has successfully trained almost all academicians with the basic skills of phase 1 involving the basic applications such as Flash, Acrobat and advanced Microsoft Office functions such as security, design, animation and the likes. Conceptually, the UiTM LMS was developed with the involvement of all academicians playing the roles of Subject Matter Expert (SME), Instructional Designer (ID), tutor and instructor all at the same time. Therefore the content that was developed fulfill the syllabus requirement, methods and objectives of learning where the lecturer, as a subject matter expert, was actively and closely involved with the development of the material for their own students under the coordination of i-Learn Centre assisted by some ISO personnels. In the management context, such approach made the content development more affordable, easy, simple, concise and reduce great possibility for errors compared to the combined SME concept with isolated designer and tutor. The model with its centralized and integrated functions made the model at par with the Blackboard requirement in terms of its collaboration factor, centralized integrated function and comprehensive information sharing among a variety of experts. From the user-friendliness perspective, the university's LMS or also known as i-Learn can be accessed through the intranet and the internet with the log-in method similar to the

i-Student Portal. Szarina Abdullah (2006) outlined the factors that impede user-friendliness such as low speed (68%), undownloadable materials (60%), computer problems (45%), disrupted connection (32%), unprintable materials (31%) dan insufficient information on retrieval (30%) and it is proud to say that the LMS in UiTM is not affected by any of the factors mentioned. This is also inline with the Macromedia selection and the e-Learning Awards, what more with the buffet approach which is modularly done has made the LMS relevant to the andragogy aspiration. The intranet and internet facility has made possible fast and flexible access all the time. The preparation of simple teaching material for printable download is also a user-friendly element besides multimedia module for visualization and interactive teaching for computer interaction. i-Learn also provides other facilities/features such as an announcement area, which is automatically organized, to entice the students on every log-in, the forum space, chat and e-mail. The structure of the learning materials is also user-friendly

as it is arranged according to the effective instructional design principle. UiTM also considered nine main principles (Mohd Nor Mamat et al; 2006) in the development of e-Learning to ensure the quality and the user-friendliness, which are:

1. ensures availability
2. ensures usability
3. ensures always online
4. ensures that standards are met
5. ensures in the simplest form
6. ensures less dependency of supplementary device
7. ensures fulfilling the users requirement
8. ensures in modular form (modularity)
9. ensures users satisfaction

Without denying the fact that there were a lot of obstacles and limitations in the LMS development (that matured into its second year, not including the previous development phase), the aspects of quality and user-friendliness have always been the focus and this has brings forth a commendable achievement.

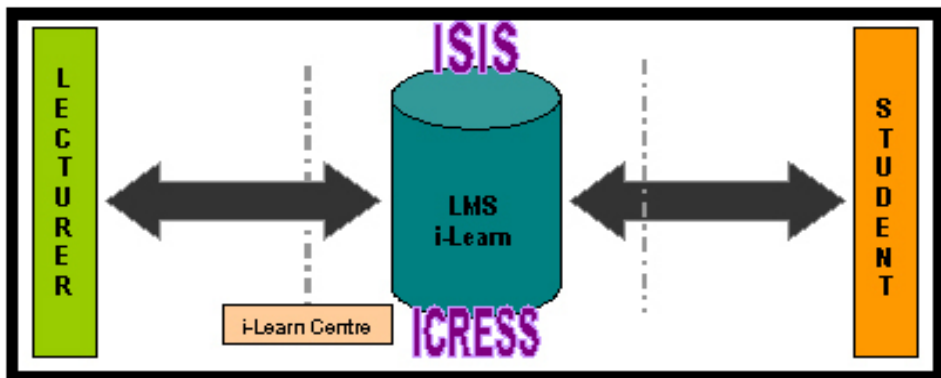


Figure 1: i-Learn Content Development Structure

3. ELECTRONIC COURSE CONTENT

Internet technologies, valuable for information intensive services, have become central to the success of educational institutions (Mazzarol, Soutar & Seng, 2003; Gomes & Murphy, 2003). Malaysian universities use Internet technologies to improve the quality of, and access to education. Integrating online learning in the education process offers flexibility for students (Sweeney & Ingram, 2001), enabling them to access online content “independent of time, place and circumstances” (DEST, 2002; p.1). Digital course

content can improve the quality of learning, enrich access to education, and improves education’s cost efficiency. It fundamentally changes the delivery of education and training along with how student learn. Flexibility lets student’s access course content at any time, place and pace. In UiTM, the only difference between digital course content as compared to the traditional course content will be the delivery mode and its knowledge sharing concept. The digital course content will be uploaded and set available via i-Learn portal, which is

done by the course creator(s)/instructor and it should provide a convenient downloadable version of content. Since UiTM is a unique university with 12 branch campuses and over 150 000 students connected all around Malaysia, managing learning content is critical. A number of courses will be taught by a number of different lecturers to a number of different groups of students. It is imperative that there exist a means to ensure the standards of content and delivery is maintained all throughout the country. The i-Learn portal is the platform promoting information sharing and resources among academicians and students, providing a standard content for the respective courses for students perusal, extending the discussion beyond the class/office hours and many more benefits. Enriched communications takes

place in the portal and high traffic access to the standard electronic course content further proves the worthiness of developing the portal. The latest statistics showed that 96% of the total 5005 course contents are electronically available in the portal and these digital course contents are greatly used by the students in their learning activities. Such offerings of digital course contents are definitely a pull factor for a foreseen extensive usage of the portal. The academicians are all geared up to fully utilize the facilities provided thus increasing the number of active users to 98.9% from the total 4200 academicians. This indicator of vigorous activities is shared in the students' usage statistics where the percentage soared up to 96.6% of the total 161370 students. Statistics from the portal also showed that in July 2007, the bandwidth

Table 1: i-Learn portal usage Statistics

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2007	7681	17806	987088	1911689	50.42 GB
Feb 2007	5254	11423	789031	1583105	85.14 GB
Mar 2007	5934	12769	916300	1804003	106.79 GB
Apr 2007	6272	11788	758121	1491718	82.32 GB
May 2007	3714	5325	223195	452751	33.73 GB
Jun 2007	8866	12671	446248	974478	55.19 GB
Jul 2007	12948	26588	1413946	3425153	90.27 GB

has reached 90.27 GB with 3560.12 KB/visit for the total visits traffic which among others, owed to the hectic uploading and downloading of digital course contents. In overall, the traffic and bandwidth have been very high, indicating great reliance on the portal, for most of the times except during the semester holidays which saw a slightly lower traffic and bandwidth. Providing good quality and relevant digital course contents, besides offering other useful and usable features, is central to the success of the i-Learn portal or other similar portals.

4. CONCLUSION & FUTURE WORK

Today's e-Learning cannot be alienated from the requirement of a comprehensive and integrated Learning Management System (LMS) towards achieving the 24 (hours) x 7 (days) principle of online learning aspiration.

Generally, the LMS development incurs an astronomical cost compared to the conventional 'talk and chalk' learning method. However, the higher return that LMS offer such as the capacity and capability of insufficient class space, time and the ever-increasing student population in the world of knowledge certainly justify such investment. Whether we like it or not, the planning towards the LMS development should begin any time soon and the selected models should be shared for the global benefit. The digital content development model for the learning system application can be considered efficient, effective and worthy as well as satisfying most standards of the excellent learning system around the world. To date, the i-Learn portal can be said to be savoring sweet success in its infancy level, at the same level where others have stumbled. However there are more studies to be conducted in further empowering

the portal as a world class facility analogous to the reputation of UiTM as a world class university. In turn, UiTM can rise to the challenge and is ever ready to serve the country's aspiration of becoming the regions' educational

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