

myLMS: a home-grown e-learning tool for ODL in Open University Malaysia.

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Abstract

As an institution of Open and Distance Learning (ODL), Open University Malaysia strongly believes on quality learning using multimode learning technologies. One of such technologies is myLMS, a learning management system developed by a team of academicians and technical people at OUM. As a tool to manage learners' learning, myLMS was designed to meet the core needs of learners which include the Discussion Board, Assessment, Email, etc. Issues and challenges faced during development and during the usage of such tool are discussed. The changing needs, together with the changing technical requirement requires OUM to improve further the quality and reliability of such tool.

Keyword: Learning Management System (LMS), myLMS, open and distance learning (ODL)

1.0 Introduction

A new generation of e-learning software, called learning management systems (LMS), is quickly replacing the course management systems (CMS) of the 90's in colleges and universities around the globe. With its emphasis on learning management rather than course management, LMS software is able to store educational content so that it can be referenced by many courses. Parmar and Stephanie (2006) define e-learning as an approach to facilitate and enhance learning through the use of devices based on computer and communications technology.

This paper presents the e-learning approach used in Open University Malaysia, namely an LMS tool to manage learners' learning, known as myLMS. Discussions will cover a spectrum of activities that includes the scenario of e-learning at OUM, the myLMS and its features, the issues faced while developing and implementing the system, and it will be concluded with a discussion on future planning and direction of the myLMS.

2.0 E-learning at OUM

The Open University Malaysia (OUM) is the first private Open and Distance Learning (ODL) institution in Malaysia and its establishment in the year 2000 was to fulfill the nation's aspiration to increase the access of higher education to more Malaysians, especially the general public and working adults. Its mission statements are that the institution would be the leading contributor in the democratization of education; it would develop quality education through multimode learning

technologies, and develop and enhance learning experiences to promote development of a knowledge-based society.

The expansion of the OUM is tremendous and this can be seen in terms of the current student population of more than 65,000 after seven years of operation, starting August, 2001. The OUM teaching-learning system is premised on blended pedagogy consisting of three major components – self managed learning, face-to-face instructorial and online learning. The online learning component involves provision of online course delivery tools through the Learning Management System (LMS).

Simonson (2007) refers to LMS as software systems designed to assist in the management of educational courses for students, especially by helping teachers and learners with course administration. In OUM, we explain LMS as “a web-based e-learning platform that bridge face-to-face learning and self-managed learning”. An early idea of LMS is to support a fully integrated teaching and learning environment through the following:

- Enable instructor to upload and deliver timely learning materials to learners.
- Enable instructor to interact and communicate with learners in a conducive environment.
- Enable instructor and learners to learn collaboratively.
- Enable instructor to monitor and track learners’ learning progress effectively.

3.0 *The features of myLMS*

With the core idea of having a “comprehensive and flexible e-learning platform”, OUM started to develop its own learning management system in 2004. The LMS which is known as myLMS is designed to provide users (the learner, instructor, administrator and Subject Matter Expert (SME)) with a single access to Information, Administration, Teaching & Learning, Communication and Support Services.

A very important feature of myLMS is its unified online learning environment and targeted delivery. An SME/instructor can upload and deliver courses to a specific student, a small group of students or the entire group of students. The instructor can also initiate forum and monitor participation very easily. This is an important element for group discussions to ensure equitable participation amongst all learners.

Among the key services offered by myLMS are explained below:

3.1.1 *Course Management*

Using the course management, an administrator can add/drop individuals or groups of learners to/from courses. The tool also can be used to automate the extended student enrolment options: limited-time self enrolment (e.g., certain dates only for self-enrol feature), password-protected enrolment, defined course duration (e.g., for self-paced study).

Course profile is a feature under course management where users can access/upload course objectives, syllabus, schedules, course resources, digital content, etc. According to Salim (2006) the course profile is the most preferred feature in course management.

3.1.2 Discussion Board

Discussion board is one of the important features of myLMS. It is a communicative platform for collaboration among learners and instructors. It enables learners to interact and learn from each other with threaded discussion boards. Instructors can set-up multiple forums around different topics or task/group based activities and embed these forums with relevant content area or lesson. The learners read the text and respond to it at a later time, thus creating a whole new level of interactions and generating a rich collaborative and communicative learning environment (Healey & Brayn-Kinns, 2000). Records of discussions can also be retained to allow for later referencing through the use of this threaded discussion board.

Discussion Board has powerful searching engine that enables learners to search and get the desired information. It also has a rating feature which enable learners and instructors to rate each other posting. Discussion board also has a number of viewing options: Sort messages by author, date and/or title, unanswered messages and post popular discussion topic. This facilitates learners to select learning materials, or to be directed to content in such a way that learner can find the learning material to their level of knowledge, interest and need in order to perform more effectively in their particular learning activity. Instructors too, are able to attach the resources available in the world-wide-web and develop them as learning material for learners' use.

3.1.3 Assignment

SMEs can upload and publish assignment to specific target learners and learners can download and then submit the completed assignment online as well. The instructor can also download all the learners' assignments into his/her disk drive with just a click of a button. The instructor can then grade the assignments and provide the feedback for each learner which can then be viewed through each learner's course page. This feature also incorporates details such as deadlines information, target user submission modes (to instructor or SME) and notification modes. This fosters self-confidence and encourages learners to take responsibility for their own learning. On the other hand, the instructors are able to communicate information to learners in a more engaging manner as compared to text-based education programmes.

3.1.4 Assessment

SMEs can create and deliver tests or quizzes using easy-to-use test template or select assessment items from a pool of questions in the Question Bank. These templates are for True/False, Multiple Choice, Multiple Answer, Matching, and Ordering, Fill in the Blank and Essay type questions. Instructors can add, correct and provide feedback for each assessment item and when the assessment is available.

Assessment can be prepared in advanced and scheduled for future release. It can also be password protected, randomized, timed or un-timed and can be taken more than once depending on the set-up determined by the instructor. The instructor can also set options whether the detailed results of each assessment item and the answers submitted by learners should be displayed. In short, it allows the instructors to package essential assessment for all learners to access. Learners can access this any time, any place and learn at the rate they prefer as this feature fosters self-paced learning.

3.1.5 *Announcement*

Easy to use announcement template lets the administrator/instructor to post important course information instantaneously. The administrator/instructor can also tailor-make the announcement to the desired target group at the desired learning centres. In addition, The administrator can determine when the announcement should be displayed or archived. This also helps the administrator/instructor to provide information related to online learning for learners to access without disturbing them frequently via telephone calls and emails.

3.1.6 *Mathematical Equation Editor*

myLMS is integrated with Mathematical Equation Editor to create web-based learning environments that help instructors to engage learners in mathematics and science courses, on the web. The editor also applies the concept of WYSWYG, thus enabling instructors and learners to easily create mathematical symbols.

3.1.7 *Glossary*

Easy-to-use glossary template enables instructor to create sharable and customizable term-definition lists. Glossary is linked with Content Management System and Discussion Board, thus, enable learners to view term-definition in the context of the content.

3.1.8 *Tracking and Monitoring*

The instructor can track learners' learning progress and activities, grades in assessment (either self-test or test), course content usage and participation in the discussion board.

While the myLMS helps in accommodating different learning styles amongst learners, it also allows room for monitoring the type of teaching done by instructors. OUM, as an institution, can also use this tool to track and monitor instructors' performance in online tasks and remunerate them accordingly.

3.1.9 *E-mail*

All the users of the myLMS have a free web-based e-mail. Each user will be entitled to the benefits of:

- Getting their emails anywhere – All is needed is an internet connection and the e-mail can be accessed from anywhere, anytime.
- Personal Address book – Each user will have a personal address book that allows a better control and management of all the contacts. Contacts can be grouped and sub-grouped.
- Global Address Book –the users also have a directory of all the other users of the myLMS, which make finding a classmate or instructor/instructor email address, simpler.

3.1.10 *Online Community*

Learners and instructors or even the general public who have common interest in specific areas can form a virtual club or online community to interact, communicate, share and exchange resources and ideas. This feature encourages and promotes

knowledge and resources sharing among users in the region. As recommended by Salim (2006), this feature is one of the requests by our learners.

Among the strength of myLMS is high scalability – providing a seamless growth path from the basic function of delivering online courses, to the creation and administration of online communities’ right up to the management of teaching and learning for the entire online campus.

Reliability is assured at any scale due to the enterprise-grade technology used while still retaining ease of use. Many levels of monitoring and extensive reporting capabilities are also provided for effective feedback.

myLMS is developed by OUM technical staff with direct academic and administration inputs, to ensure every service is delivered according to sound pedagogical and andragogical reasons.

4.0 Issues and Challenges

There are many issues and challenges faced by the teams that developed the myLMS and as well as still developing it. At the early stage, developing myLMS was the biggest challenge faced, but after a few years of operation, the biggest challenge was to fulfill the needs of nearly 70, 000 users all over Malaysia as well as some international students, namely from our international collaborators from Bahrain, Yemen, Indonesia and Singapore.

Based on the myLMS utilisation figure as stated in Table 1, there is clear indication that OUM needs a very stable infrastructure in order to meet users’ need. It is a challenge in making sure the infrastructure (hardware and software) to be available all the time.

As the myLMS users are ranging from fresh school leavers to full time working adults, the time and duration of accessing myLMS is greatly varied. Some users prefer to access myLMS during daytime, while many others will only get the chance during night time. It is such a big responsibility to provide 100% accessible services at any time in this situation. Fortunately, with proper design of the infrastructure, the up-time for myLMS is 99.9%.

Since not all our learners can afford to subscribe to high speed internet access, it is also crucial to make sure that the time taken for downloading and uploading of homepage is as low as possible. For myLMS, the downloading of the page takes around 15 seconds with a 56Kbps connection. Uploading of pages takes approximately 10 seconds.

Realizing the importance of complying to standards, OUM has taken an active step to make myLMS comply to standards like Sharable Content Object Reference Model (SCORM). As for the moment, myLMS is fully complying with the SCORM standard to ensure the orderly delivery of e-contents and address any costly inefficiency (DigitalThink, 2003). myLMS webpage is also developed to comply with the World Wide Web Consortium (W3C) standard.

5.0 Suggestions for future plans and direction for the myLMS

At OUM, the practice of constantly improving the quality of teaching and learning always remains as the top priority. Since LMS does play a big role in the process of teaching and learning, there are several key areas where there is a need for OUM to look into, and to make sure

that certain changes in technology and pedagogy be adapted to myLMS, so as to ensure its effectiveness as a major e-learning tool.

Some of the areas which need to be incorporated in the future generation of myLMS are discussed below:

1. Plagiarism has become one of the main concerns among educational institution. With the advent of technology and the high availability of Internet, plagiarism can easily be done by learners. A feature to detect plagiarism needs to be included in the next generation of myLMS. The feature will not only detect plagiarism in learners' assignments submitted via online, but also amongst the learning materials created by the instructor.
2. The element of artificial intelligence (AI) needs to be incorporated in myLMS. One example would be by having an agent that provides guides to users in using myLMS. More importantly, this agent also guides users on how to do certain learning activities, and offer online support wherever necessary.
3. The other element of AI that needs to be incorporated in myLMS is the ability of delivering learning materials and learning activities based on learners' learning styles and pace. This will help the learners to follow lessons based on his/her capability, thus will create a more productive learning.
4. Security needs to be upgraded to make sure that all confidential information can be accessed and used by authorized party only. Since the myLMS is rich with complete data about learners' personal particulars, exam results, financial details and many other confidential data, myLMS must add the feature on Security Authentication and Encryption.
5. According to Hamid (2005), all LMS available in the market from 2008 to 2015, will be an open architecture LMS and so, there will be a need to integrated LMS with enterprise application suite.

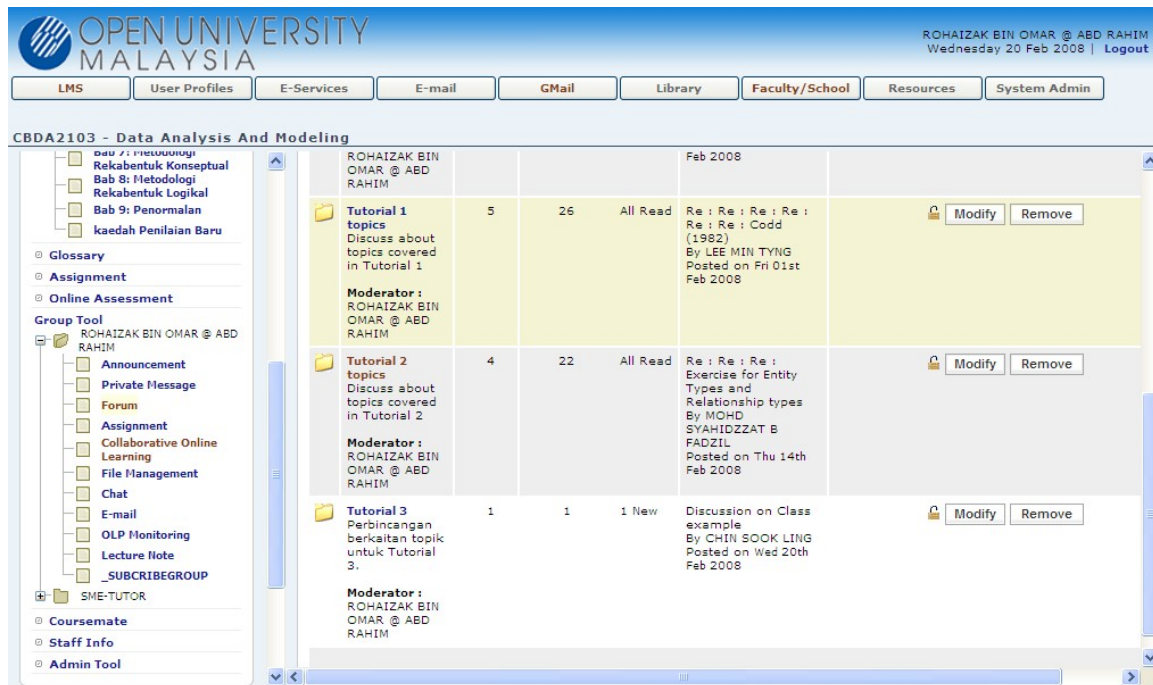
6.0 Conclusion

This paper has discussed in complete detail the various aspects of the myLMS related to technical features, issues and challenges, and the future direction of the home-grown, myLMS. From this paper, it is obvious that myLMS has been providing e-learning resources that is available in asynchronous mode for individualized use by learners, theoretically at any time, in OUM. Ruth (2002) explains that e-learning environment could be imagined as a situation where a person is sitting comfortably at a place of his or her convenience like home or office and is able to achieve an educational experience that is similar to a classroom or sometimes tries to derive an experience better than a classroom! Such description synthesizes the functionality of OUM's myLMS, that is, not only able to provide a learning management system but also to provide the much-needed online support that stimulates learning interactions of various kinds between the learners, the instructors, the administrators and the SMEs. It is also expected that by the suggestions that have been put forward, OUM's home-grown myLMS's infrastructure and content quality will always match the learning requirements of OUM learners.

Table 1 myLMS Utilisation

Number of users	70,000
Number of courses	300
Average time spent by a student in a day	20 minutes
Average time spent by an instructor in a day	15 minutes
Average accessibility	5 million hits per day
Average number of students accessing LMS	8,000 students per day
Average number of instructors accessing LMS	2,500 instructors per day
Concurrent Users	9,000

Figure 1 Snapshot of myLMS



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