

Learning Management Systems in Higher Education: A Review from Faculty Perspective

Jintavee Monsakul, Ed.D.

Department of Curriculum, Instruction, and Educational Technology,
Chulalongkorn University, Thailand
E-mail: jinmonsakul@gmail.com

Abstract

Higher education has been challenged by the emergence of new Information and Communication Technology (ICT) in integrating wide range of ICT into teaching and learning experiences. Among various ICT, eLearning has been recently adopted by many institutions since it has offered to a great extent meaningful learning experiences by accommodating different learning styles, matching individual's need, fostering self-paced learning, and promoting life long learning that one learns how to learn -- not what to learn (Smaldino, et al., 2005). Most significantly, eLearning has provided access to and promoted flexibility in learning that one can learn from anywhere and at anytime without place and time constraints (Bonk and Graham, 2005; Monsakul, 2006)

Though there are various formats of eLearning, according to Sloan Consortium (2005), three formats were classified based on delivery modes and proportion of content delivered online including: complete online course, blended course, and web-facilitated courses. In all such formats, Learning Management System (LMS) are an integral tool in such courses to facilitate exciting, meaningful, and active learning experiences. Most LMSs share two fundamental functions: 1) being a content provider and 2) being a communication tool in an online

environment. Individual LMS has its own strength, for example, some LMSs provide more flexibility due to their customizing functions, while some give reliable access, and some, which are open source, is free of charge. There has been rapidly diffusing LMS technologies which are categorized into commercial system and open source system. There has been debate on benefits and limitations of various kinds of LMSs. In addition, many institutions seek the system that suits their need. Thus, this paper presents the existing LMSs including commercial and the open source systems, as well as their effectiveness and constraints. It will focus on four LMSs including Blackboard, Educator, AU-Plus, and Moodle. The paper is based on author's perspectives and experiences as a lecturer in online, blended, and also web-enhanced courses. First, the paper will be of use for institutions to select the suitable LMS. Second, it aims to share perspectives and experiences among lecturers to respond to the increased expectation in integrating such technology in higher education teaching. This paper will be based on the review of literature, and personal experiences of the author of this article as a lecturer of educational technology program, who has experiences in the addressed three approaches. Information about the concept and the types of LMS is also discussed to

assist to enhance utilization of LMS in teaching and learning.

1. Background

eLearning has gained popularity from higher education institutions lately, and simultaneously, blended/Hybrid learning, a combination of face-to-face and online, has been increasingly used across all disciplines. Most institutions have begun to view that Blended/Hybrid learning holds more promise than eLearning (Allen, Seaman, and Garrett, 2007). Bonk and Graham (2006) described the emergence of blended learning as the convergence between traditional face-to-face learning environments and online learning environments, by combining four critical dimensions including space, time, fidelity, and humanness.

Sloan's report (2005) classified eLearning, based on course delivery methods, into three formats: online, blended/hybrid, and web-facilitated. Online course was defined by more than 80% of the content delivered online; blended/hybrid was defined by 30% to 79% of the content delivered online; and web-facilitated was defined by only 1 to 29% of the content delivered online (Allen and Seaman, 2005). No matter of the of eLearning formats being integrated, an intergral tool to facilitate learning is Learning Management System (LMS). Though, most LMSs share two fundamental functions: 1) being a content provider and 2) being a communication tool in an online environment, individual LMS has its own strength, for example, some LMSs provide more flexibility due to thier customizing functions, while some give reliable access, and some, which are open source, is free of charge.

2. Benefits of LMS in Higher Education

LMS is significantly used in many higher education institutions since the

institutes are facing growing enrollments and greater demands for online courses. According to Morris (2004), Allen and Seaman (2005), when institutions plan to put traditional courses online, a Learning Management System is necessary in order to properly organize content, courses, sections, faculty, students and grades. LMS also supplies tools for providing multimedia contents, assignments, and supporting interaction including discussion groups, chat sessions, and online quizzes and examinations. Bonk and Graham (2006) described Benefits of blended learning (partial online and partial tradition) which can be categorized into three aspects:

2.1 Improved Pedagogy

Blended learning is more effective pedagogical practices. Based on the works of Collis, Bruijstens, & van der Veen, 2003; Hartman, Dziuban, & Moskal, 1999; Morgan, 2002; Smelser (as cited in Bonk and Graham, 2006), blended learning approach increase the level of active learning strategies, peer-to-peer learning strategies, and learner-centered strategies used. In higher education, professors use online modules to help students acquire the tool-related skills and technical information and then use precious face-to-face class time to focus on application, case studies, and develop decision making skills (Cottrell & Robinson, 2003 as cited in Bonk and Graham, 2006).

2.2 Increased Access and Flexibility

Since access is one of the key factors influencing the growth of distributed learning environments, it makes learning possible even when learners have most of their learning experiences at a distance from instructors and/or other learners. Benefit is also of growing importance as more mature

learners with outside commitments such as work and family seek additional education.

2.3 Increased Cost-Effectiveness

Blended learning maybe one of the solutions in cost effectiveness in higher education environment since it provides an opportunity for reaching a large globally dispersed audience in a short period of time with consistent content delivery.

3. Selection of LMS in Higher Education

Landsberger (2004) discussed LMS's functions found in higher education instruction and classified them as: 1) a course-organizing tool, such as a replacement to a traditional syllabus, grade books and testing tools; 2) a dynamic tool to facilitate the process of learning, such as synchronous and asynchronous discussion groups; 3) a space to enhance student collaboration. With its various functions, LMS serves different learners' characteristics, different learning styles and outcomes. Also, students can look at course syllabus to see how instructors teach courses before signing up for a course (Landsberger, 2004; Suwannathachote and Monsakul, 2007). Suwannathachote and Monsakul (2007) discuss in great detail regarding Thai's context, adoption of blended instruction through Blackboard Learning Management System found in educational technology undergraduate courses. Instructors found that students' critical thinking skills are enhanced by making use of discussion board activities to force students in expressing their thoughts and opinions related to course contents. In addition, Blackboard LMS has increased accessibility to course contents, such as, course agenda, materials, and assignments. Communication tools, such as personal profile, personal messages, and online learning log, have promoted interaction and

association between instructor and learners and also among learners. The challenge of using LMS in higher education is how to encourage faculty to utilize LMS to develop online, blended, or web-enhanced courses. One of the concerns is that most faculties do not have experiences, and interests in developing and teaching online courses.

In terms of the LMS vendor selection, most institutions consider only the features and functions of the LMSs which maybe meaningless. Most commercial and the open-source LMSs contain the same fundamental features and functions. In case a company misses any key feature, it is likely to develop the missing feature almost immediately. Figures 1-5 are screen shot of the four LMSs I have experiences with along with description my perspectives toward each LMS. They all are shared almost the same functions.



Figure1: The screen shot of the Educator LMS (Information based on author's experience during 2002-2005) <http://www.ucompass.com>

From my perspective, the relationship between company and the prospective partner is the most important. When I was at Texas A&M University-Commerce, USA., the university selected Educator as a LMS for their institute. The strength of Educator is, personally, the technical support that is responsible and devoted. All features and functions can be customized and adjusted as

instructors need by sending request to the technical supports. In addition, I, once, accidentally delete all students' data. The technical support can retrieve the information back within 24 hours. Thus, customer services that are willing to work with you when facing problems become one of the major considerations.

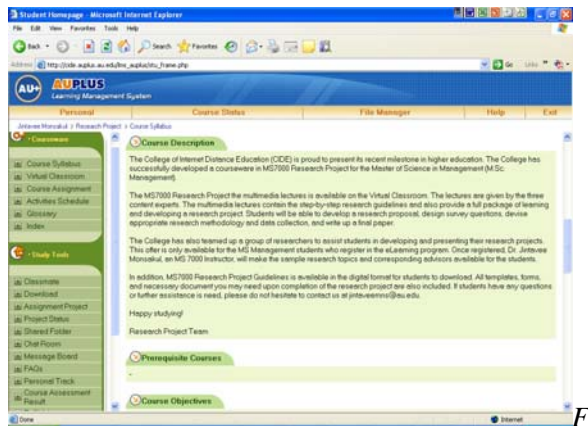


Figure2: The screen shot of the AU-PLUS LMS (Information based on author's experience during 2005-2006) <http://cide.auplus.au.edu>

Like Educator, AU-PLUS system's strength is to provide relationship between company and the prospective partner is the most important. Expand the range of features and functions of your CMS as the institution needs. In addition, the technical supports and customer services are willing to work with users, in this case the instructors, when facing problems. Therefore, the two systems would be suitable to most institutions with limitation numbers of IT staffs and with LMS experience constraints.

Alternatively, some institutions with experienced IT staffs may employ the open source Moodle LMS, such as at Assumption University, Thailand, called Knowledge Management System (KMS). Moodle is a free, open source software package designed for educators create effective online learning communities. Despite limitation in some of its functions, such as student tracking, the

open-source software provides updated features for institutions to upgrade as long as its continue.

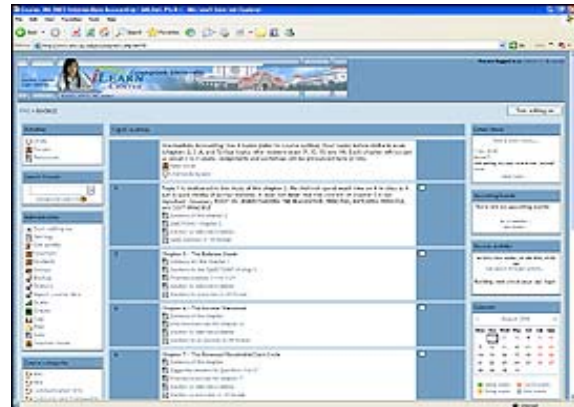


Figure3: The screen shot of a Customized Moodle LMS called "KMS" (Information based on author's experience during 2005-2006) <http://moodle.org>

In addition, some universities select using Blackboard, one of the leading commercial LMS software packages widely used in North America and European Universities. With its powerful capabilities, user friendly instruction, communication, and assessment, Blackboard is considered as world-class software application (<http://www.blackboard.com>)

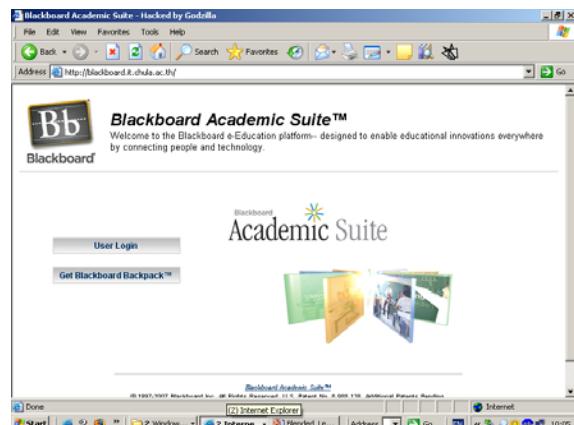


Figure4: The screen shot of Blackboard LMS main page (<http://www.blackboard.com>)

As a leading company, Blackboard LMS is reliable. The instruction, such as course document, supports multimedia documents including text, sound, and video. The communication is easy to use and learners

are able to edit their communication on discussion board (while some LMSs could not), though it is limited to asynchronous communication and no synchronous communication is currently not provided (information based on Blackboard Academic Suite purchased by Chulalongkorn University 2007). Assessment, especially tracking system, work well and systematically in assisting instructors to keep students' participation in online learning community. Also, grading system can be linked to all activities and assignments, which are consequently calculated in score or diagram formats.

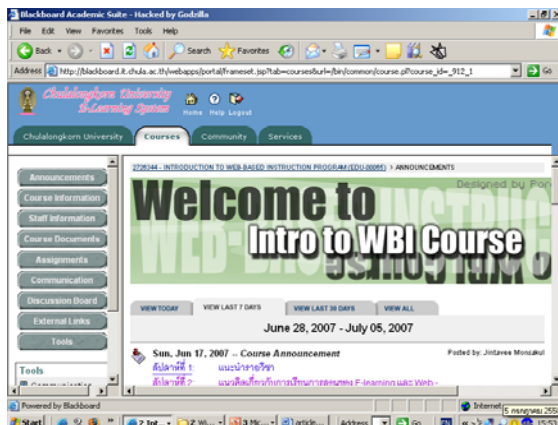


Figure 2: The screen shot of Blackboard LMS (Information based on author's experience during 2005-2007) <http://www.blackboard.com>

4. Faculty Perspectives: Lesson Learned and Common Functions of LMSs

Though LMS is a web-based system, the use of the LMS is not limited to online classes only. Due to the fact that most classes available in higher education are still off-line, there remains effort in seeking the possibility to incorporate the LMS into traditional face-to-face classes. The blend of the on-line and the off-line pedagogical methods generates a so call "hybrid" course. It is believed that the hybrid courses will gain popularity due to several factors, such as demands of a maximization of resources, and the expanding communication channel,

and most importantly its flexibility. For instance, using online discussion board in a face-to-face class also promotes student-centered learning. Learners realized the benefits of participating in a web-based conference including time and advantage of participation in discussions, more in-depth contributions, and the opportunity for those who are shy to participate in discussion more easily.

Three lessons learned from the LMS operation are comprised of course organization, different features diversifying the class activities, and communication tools developing the learning community.

1. Course organization designing from learners' perspective -- when the LMS is the only medium to communicate with learners, the organization of the instruction should be conducted in a consistent manner that helps learners to follow the instruction easily. For example, in a weekly plan, it may begins with a reading assignment and resources, followed by the class assignment with due date. By so doing, it helps learners to navigate weekly lesson plan. In addition, well organized course helps reduce instructors' workload. Instructors can keep track of students by checking students' work, recording students' grade sheets, and class attendance directly from the system.

2. Using different features to diversify class activities -- various components are available in the LMS. Components, such as, e-mail, discussion board, quiz, exam, and file uploading features, provide different ways to facilitate the learner-content interaction, learner-instructor interaction and learner-learner interaction. For example, instructor may assign learners to review another group member's work and give informative comment to the creators. This assignment required students to upload and exchange their works with group members and use

email to give private comments to the creators and cc to instructor for credits.

3. Using communication tool to develop the learning community -- though absence of physical human contact may reduce learners' sense of belonging in an online class, it is the instructor's responsibility to facilitate the development of the learning community utilizing synchronous and asynchronous communication tools. Learners have opportunities to exchange ideas and conduct meaningful dialogues through posting and replying messages.

In addition to the above lesson learned, following are thirteen common functions of LMSs:

- 1) "Course Info/Syllabus" for students to view and print course info and course syllabus;
- 2) "Course Documents" for student to upload their files to their folder and for download/view course materials;
- 3) "Announcements" for students to regularly check the class announcement which is on the first screen when signing into LMS;
- 4) "Discussion Board" for students to post their messages to the discussion board;
- 5) "External links" for Instructor and students to share additional web resources for students that they can access directly by clicking on the links;
- 6) "E-mail" for students to send an e-mail to instructor and their classmates with available address lists;
- 7) "Chatroom" for students to participate in synchronous communication (available on all LMSs but the Blackboard);
- 8) "Students profiles" for students to modify their profile and to view classmates' profiles and photos;
- 9) "Who's online" for students to check to see who is online; students can also send an invitation message for instant chatting to anyone who is online (available on all LMSs but the Blackboard);
- 10) "Technical support" for either send a message or call the technical support;
- 11) "Assignments" for students to check the course's assignments, the due dates, and to submit the assigned work;
- 12) "Log off" for students to switch to other courses, and to log off from the system;
- 13) "Grade" for students to check their class attendance, and their grades.

5. Conclusion and Implications

LMS has been widely used and will continue to grow in many higher education institutions. It is not only limited to the online environment, but also integrate in the hybrid and web-enhanced teaching and learning environment. In addition, the uses of LMS to facilitate interaction enhance learning abilities and support higher-order learning, including problem solving, critical thinking, and collaboration skills (Smaldino, et al, 2005; Suwannatthachote and Monsakul, 2007). In supporting such idea, Chickering and Gamson (1987 as cited in Waterhouse, 2005), explained that eLearning functions suited a pedagogical theory, the Seven Principles for good practice in undergraduate education -- instructional guidelines applied to eLearning context. The seven principles include: good practice encourages contact between students and faculty; good practice develop reciprocity and cooperation among students; good practice uses active learning techniques;

good practice gives students prompt feedback; good practice emphasizes time on task; good practice communicates high expectations; and good practice respects diverse talents and ways of learning.

Though LMS has been proven as beneficial to student learning, it has been debated on how LMS can be used further as a means to better engage the learners. The challenge is not only instructors make an effort to integrate LMS into instruction and class activity, but also instructors have to realize how to engage students with the meaningful learning experiences enhanced by the integration of LMS tools, and to support the transition of eLearning and mLearning (anywhere and anytime) to uLearning (ubiquitous learning) environments where learning occurs everywhere and everytime. Consideration toward teaching and learning pedagogy, access and flexibility, and cost effectiveness are suggested for higher education institutions in integrating LMS into their teaching and learning.

6. References

- Allen, I. E. & Seaman, J. (2005). *Growing by Degrees: Online Education in the United States, 2005*. Alfred P. Sloan Foundation.
- Allen, I. E., Seaman, J., & Garrett, R. (2007). *Blending in: The Extent and Promise of Blended Education in the United States*. Alfred P. Sloan Foundation.
- Bonk, C. J. & Graham, C. R. (2006). *The handbook of blended learning*. San Francisco, CA: Pfeiffer.
- Landsberger J. (2004). "Thoughts on convergence in instructional settings". *TechTrends*,48(3), 6-8
- Morris J. (2004). "Features and functions are merely trifles in the selection of a Course Management System". *T.H.E. Journal*. Retrieved August 11, 2004 from <http://www.thejournal.com>
- Monsakul, J. (2006). "eLearning Courseware Development: Experiences and Lessons Learned from AU-PLUS System". *Proceedings of the Third International Conference on eLearning for Knowledge-Based Society*, organized by the Ministry of Information and Communication Technology, Bangkok, Thailand, 45.1-45.7, August 3-4, 2006.
- Monsakul, J. (2006). *eLearning Solution: Experiences & Lessons Learned from AuNet System*. Workshop, Assumption University (August 8-11, 2006).
- Smaldino, S.E., Russell, J.D., Heinich. R., Molenda, M. *Instructional Technology and Media for Learning (8th edition)*. New Jersey: Upper Saddle River, 2005.
- Suwannathachote, P. & Monsakul, J. (2007). "Blended Instruction with Blackboard LMS: A case study of Educational Technology Undergraduate Courses at Faculty of Education, Chulalongkorn University". *Proceedings of the Conference on Opportunity and Prospect of Thai Educational Development* organized by Faculty of Education, Chulalongkorn University, Thailand, 311-317, July 10-11, 2007.
- Waterhouse, S. (2005). *The Power of eLearning: The essential guide for teaching in the digital age*. Boston, MA: Pearson Education, Inc.