Design, Purpose of Usage and the Impact of LMS on Student Learning: A Preliminary Findings

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ABSTRACT

Knowledge management era give impact the world in many domains, including education sectors. Education sector moves to the online learning instead of traditional approach; face to face. Learning Management System (LMS) is one of the knowledge management tools that support knowledge sharing and communication among its participants. To date LMS has been found to be very popular among institution of higher learning in Malaysia. This study empirically investigate the effect of user based design and usability on LMS. Fifty respondents involved in this short survey. The findings are expecting useful for designers of LMS.

Keywords: Learning Management System, E-Learning, Online Learning, User Satisfaction

I   INTRODUCTION

The advancement of computer technology and communication system such as internet encourages institution of higher learning to move towards electronic learning (e-learning) paradigm. E-learning is referred to the used of networked information and communication technology (ICT) in teaching and learning (Naidu, 2006). Through this technology teaching and learning can be done through the Internet. Thus, teaching and learning are not longer being constraint by space and time.

ICT enable the participants particularly teachers and students to interact and play an active role in digital environment. Teachers will prepare and provide content and learning materials. These materials can be made specialized to the learners need (Tavangarian et al., 2004). The students or the learners will then interact with the course content. The interaction forms a knowledge sharing environment that extend the traditional teaching and learning environment.

Learning Management System (LMS) is one of the Knowledge Management tools that support e-learning. LMS a broad term used for a wide range of systems that organize and provide access to online learning services for students, teachers and administrators (Ozkan, Koseler & Baykal, 2008). LMS can be used to plan, implement and assess a specific learning process in e-learning (Aziah & Marzuki, 2005).

To date, many institutions of higher learning in Malaysia has implement LMS to support their e-learning program. Open University Malaysia (OUM) for example has developed MyLMS since 2003 to support the various activities of e-learning at the university. MyLMS is a comprehensive and flexible e-learning facilitators and learners to interact in a virtual classroom environment. University Tenaga Nasional implement LMS called Learning Cube that allows learners to provide members of their community with tools to implement, develop and share effectively the available technology to improve their intra and inter-organizations learning process. Universiti Utara Malaysia (UUM) has implement LMS since the year 2000. To date, the LMS is known as LearningZone implements various functionalities that support lecturers, students and administrators. Through LearningZone lecturers can setup an interactive course content, notes, create blog, forum, online quiz, assignment and etc.

This paper discusses the descriptive analysis of the survey conducted among a group of UUM's students. The survey was aim to identify the level of satisfaction on the LearningZone design, the purpose of usage and the impact of LearningZone towards the students' learning.

II   LITERATURE REVIEW

LMS is a software application or web-based technology used to plan, implement and assess a specific learning process (Aziah & Marzuki, 2005). LMS is an infrastructure that delivers and manages instructional content, tracks the progress towards meeting those goals, identifies and assesses individual and organizational learning or learning goal and collects and presents data for supervising the learning process of organization as a whole. So, there is an important need to measure the success and effectiveness of the learning system systematically for e-learning application to be efficiently for educational purposes (Ozkan, et al, 2008).

The rapid penetration of LMS as key tools for learning occurs in a vacuum of solid research as to their effectiveness in increasing learning or even indication of best practices for technology implementation. Learning occurs within physical boundaries in traditional classrooms - for example, classroom, a school and field trips and various locations. In contrast, through online learning, learning can happen anywhere and anytime without the limit of physical location (Vincent, Lee, Tan & Shukery, 2005). LMS is also a web based applications that support online teaching or supplement face to face instruction (Passerini, 2006). Adding e-learning to the event-driven world of the classroom opens up a multitude of learning possibilities. E- learning is a powerful tool to support the out of classroom experience. It can be integrated into current classroom curriculum and related learning strategies to help carry the learner beyond the confines of the classroom.

In addition, many higher education institutions have implemented a LMS to manage online learning and teaching with varying level of support provide to staff and students. Institutions are increasingly exploring the potential use of e-learning technologies to cater for the ever growing demands of flexible teaching needs in distance education (Weaver, Christine & Chenicheri, 2008). Universities in Malaysia have responded actively to this challenge guided by the Ministry of Education's strategies to enhance the use ICT in the e-learning (Chai & Poh, 2009). Thus, LMS also has become a major component in University Utara Malaysia Community Portal called LearningZone in supporting the university community's need based on academic, administrative requirements and research. LearningZone was integrated with the undergraduate and graduate Students Information Systems to improve provision of information on teaching and learning in portfolios.

III   METHODOLOGY

The respondent of this study was a group of 150 final year students who enroll in project paper course. They were asked to answer questionnaire to indicate their perceptions towards LearningZone' design, usage and its impact. A total of 80 questionnaires were returned but only 50 questionnaires were usable. The rest were discarded because of the invalid answers. The usable response rate was at 62.5%. A descriptive analysis was performed using SPSS software.

IV   FINDINGS

Overall 50 usable questionnaires have been received from the survey. The number of female responding to the questionnaire is slightly outnumbered male, with 64% (32 students) of the participants are female while male is only 36% (18 students). The participants are between 18 to 25 years old.

LearningZone Design

The design of LearningZone is important to attract students to use it. It is because students will not access to a portal if it does not interest them. In this study, the design refers to the layout, graphics, link, language and navigation buttons. Five items were used to measure the system design of LearningZone (Table 1).

Table 1: Descriptive Analysis of LearningZone Design

Item	Mean (M)	SD
The language used in LearningZone is easy to understand	4.42	.54
The link between the pages are clear	3.68	.81
Navigation buttons consistent with general web usage	3.70	.71
The layout of the LearningZone is good	3.72	.76
I was satisfied with the content available on the LearningZone	3.70	.58

Purpose of Using LearningZone

Students were asked the frequency of using LearningZone based on 10 activities. It appear that students involve in all activities, but the frequencies are varies (Table 2).

Table 2: Frequency of LearningZone Usage

Activities	Frequency*						
	D	S/ TPW	W	M	OPQ/ SM	OPY	N
View lecture notes	28%	40%	24%	6%	2%	0%	0%
View announcements	32%	32%	22%	10%	4%	0%	0%
Read message	24%	26%	24%	10%	4%	4%	8%
Send message	6%	16%	14%	16%	8%	12%	28%
Discussion with lecturer using Chat module	4%	8%	8%	10%	4%	10%	56%
Discussion with classmate using Chat module	2%	12%	12%	8%	2%	12%	52%
Download course documents	28%	40%	22%	4%	2%	2%	2%
View general resource	18%	26%	30%	14%	4%	2%	6%
View upcoming event or activities	18%	20%	26%	14%	4%	12%	6%
View profile of other participants	6	16%	34%	10%	18%	14%	2%

* D=Daily, S/TPW=Several/Time per Week, W=Weekly,
M=Monthly, OPQ/SM= Once per quarter/Semester, OPY=Once per
year, N=Never

Impact of LearningZone

The respondents indicate that LearningZone has an impact on the process of teaching and learning. Typically, it encourages information exchange and communication, promote active learning, and increase students' understanding.

Table 3: The Impact of LearningZone towards Teaching and Learning

Item	M	SD
The LearningZone can enhance exchange & communication between lecturer and students	3.820	0.8003
Compare to traditional learning, Learningzone makes me productive to my study	3.440	0.8122
It is easy for me to understand every activities provide in LearningZone	3.52	0.6465
Using LearningZone has enhance the knowledge & understanding I gain from lecturer	3.52	0.6465
The LearningZone allow me to provide feedback from lecturer	3.360	0.8271
LearningZone is important elements of my course	3.840	0.7384

V   DISCUSSION

The results show that there is a positive effect of the students' satisfaction on the design and use for the LearningZone. Students feel confident and satisfied with LearningZone design such as easy to access, navigation, and interface design. Navigation can help students to find their materials, assessment and task easily. Students also feel satisfied with the language used in LearningZone. The language used is easy to understand. Therefore, LMS with good design will help users to use it without having any problems and encourage students to continue using it. These findings are in line with Wang et al (2007) that indicate learners' most important requirement is being able to control their learning progress.

Results also show that 44% of the respondents agree, while 14% strongly agree that they are confident to log in to their course in LearningZone. Students recognize that LearningZone is helpful resource and help them to understand course information. They were positive about using LearningZone as a mean of sharing knowledge or information and interacting with lecturer and other students. Therefore, they are satisfied with online lecture note posted on LearningZone. These aspects are inline with Steel (2006) that students prefer flexibility of access to their lecture note, using ICT to communicate and enhance their learning. Apart of obtaining lecture notes, LearningZone also equipped with the assessment modules such as assignment submission and quiz. The finding shows that students are less satisfied with these modules. Therefore, these modules need to be studied and improved.

Researcher found that students were predominantly using LearningZone for viewing lecture note, announcements, general resources, upcoming events or activities, viewing profile of participants and downloading course documents. Students were frequently download course documents and view lecture note because they want to have updated class material. These materials are important for their learning and increases efficiency by saving time and convenience to retrieved (Petrovic et al, 2005).

Students were also found subscribed a number of self regulated discussion group related to their coursework, the problem-based learning (PBL) and social activities. However, Chat modules are not well developed with more than 50% of students

having problems with online chat features. Thus, discussion with lecturer and classmate is lacking by not possessing many features of standard Chat Module. These results indicate that most students prefer to read rather than sending messaging and participate in discussion. Students like to think and reflect about the material and expected to visit and spend more time on reading material as well as stay longer at outlines.

This study also showed that there was a strong relationship between the lecturers and students to access LearningZone. Findings from descriptive statistical show that 48% agree and 20% strongly agree that LearningZone can enhance the communication and information exchange between lecturer and students. LearningZone also allow lecturer to provide feedback so that easy for the student to comprehend every activities. Besides that, students were more satisfied with LearningZone compare to traditional learning. Students enrolled in online course were significantly more satisfied with the course rather than those who were thought traditionally. Students have sufficient awareness on the importance of the learning and having positive attitudes towards using learning. It also can influence students to initiate and motivate them to continue using the LearningZone.

VI   CONCLUSION

This research is essential to understand the collaborative learning that can be achieve through rigorous interaction among students, provide anywhere, anytime interaction among the students community and remove the wall of classroom for students as well as trainers through LMS. LMS provide modular and extensible system with adaptive and knowledge management abilities for students and lecturers.

LearningZone one of the LMS offers great opportunity to improve the teaching and learning process. Through the system lecturer can get a better understanding of their students by knowing what problems they may be facing, who can help them and how, when they are behind or ahead of their peers, and what roles can be assigned in discussion forums. So it can turn to a positive effect on students who can receive feedback tailored to their needs and problems. LMS also serve as one stop center for students to obtain a large number of resources online whenever they want and increases efficiency by saving time and convenience. This learning environment can get benefits from the integration of classroom and online delivery, students to pursue further knowledge thereby increase their learning outcomes.

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