UTILIZATION OF LEARNING MANAGEMENT SYSTEM IN HIGHER EDUCATION INSTITUTION IN ENHANCING TEACHING AND LEARNING PROCESS

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ABSTRACT

Learning Management System (LMS) usage help learning process to be more active and productive. However, instructors are not stimulated to use the LMS optimally in their teaching environment. This study was conducted to identify the utilization of LMS in a public higher education institution in Malaysia among instructors. This quantitative approach study, adopts mail questionnaire to 93 instructors at higher education institution. The tools in LMS examined were Groups, Chat, Forum, Announcement, Document, Wiki, Learning Path, Users, Exercises, Course description and Agenda. The result shows low percentages of utilization of LMS from instructors even though they have positive perception towards the potential of LMS in enhancing teaching and learning process. Besides, the study also found that instructors were not exposed much on usage of the tools in LMS. Hence, a suggested LMS framework will be constructed to provide guidance to instructors.

Keywords: Learning Management System (LMS), tools, utilization, learning process

1.0   INTRODUCTION

Learning Management System (LMS) is an electronic learning platform to deliver, monitor and manage learning (Dawley, 2007; Aziz, Yunus, Lan, & Bakar, 2009). LMS provides a space for rich online learning environment (Weaver, Spratt, & Nair (2008). In fact, Christie & Garrote Jurado (2009) in their study found that LMS usage help learning process to be more active and productive. Daniels, Jacobsen,

Varnhagen, & Sharon Friesen (2013) also added that implementation of LMS support student-centred learning and engage students' interest. Moreover, Manochehr (2008) identified that LMS usage in teaching and learning is significant to students' learning style. With the technology evolvement in education field, LMS usage in teaching and learning is highly recommended. Students not only can access to learning materials without time and space as barriers, instructors can also tracks their students and learning resources in more manageable way.

However, education institutions should consider evaluates the official LMS uses for teaching and learning purposes to ensure that the system meets the requirements and demands of users (Chung, 2013). Currently, LMSs used widely in educational institutions but very little attention is paid to how well these system actually support learners pedagogically (El-Bishouty, Chang, & Graf, 2011). Ayub, Tarmizi, Jaafar, Ali, & Luan (2010) also discussed in their paper that LMS utilization still minimal and factors that influence the usage of the system need to be identify. This statement proved by A.Rahman, Ghazali, & Ismail (2010) that found LMS is not fully utilized by students in their learning environment.

LMS has an important role in education as long as it is used correctly and supported by the pedagogical elements. Pedagogical elements such as collaborative learning activities should be implemented in every LMS in higher education institution. Emelyanova & Voronina (2014) also added that LMS have been proven to encourage collaborative learning activities in an active learning. Although LMS has been proven as beneficial in learning environment, it has been debated on how LMS can be used further as a means to better engage the learners (Monsakul, 2007).

Collaborative learning activities not only optimize the usage of communication tools in LMS, in fact online learning can be more meaningful. In the efforts towards the construction of LMS's advantage, the role of instructors is essential. By emphasizing the collaborative learning activities, the usage of LMS by student and instructor appears to show improvement. Instructors need to be given guidance to encourage the students to actively participate in the LMS.

LMS in this higher education institution have been carried out since 2003 for effective and efficient communication system. The LMS also aims to provide students with self-paced modules. Furthermore, with LMS usage, students and instructors have flexibility on discussion through provided LMS tools. This LMS is powered by open source system that able for future addition and improvement.

1.1 Literature Review

Learning management system is an online learning platform that can provide tools needed by instructors to support teaching and learning. LMS assist instructors to publish documents and announcements; giving students tools to develop activities and allowing interactions between students and with instructors (cloroline.net, 2006). LMS provide variety of communication tools that can be used to support teaching and learning such as wiki, announcement, forum, chat, groups, and others. These communication tools not only facilitate in teaching and learning process, but also assist students to participate in learning activities that can be carried out. These communication tools can be use either synchronous or asynchronous. Available options allow communication among students or with instructor to be more efficient. This is supported by Venter, Rensberg, & Davis (2012) that found communication tools provided in LMS promote collaboration and interaction in teaching and learning process. Moreover, Bacow, Bowen, Guthrie, Lack, & Long, (2012) also share the same opinion. They agreed that the usage of LMS able to enhance productivity and quality of education. This proves the LMS satisfy the needs of today's education (Nishtar & Rahman, 2006).

Makrakis & Kostoulas-Makrakis (2012) added that today education should shift from instructors-centered learning to students-centered learning. Instructors' role can be expanded to be knowledge transmitters towards taking an active role as facilitator, curriculum developers, knowledge constructors and transformative learning agents. Hence, the LMS has failed to cater to the changing demands for students-centered learning (Schneble, 2011). However, if LMS is injected with pedagogy elements, it can lead to innovation and quality in higher education (Christie & Jurado, 2007).

Christie & Garrote Jurado (2009) pointed out that the tools in LMS that promote active learning are used far less than course management tools. In addition, there are some instructors that remain fearful or even skeptical to create learning activities in LMS which they perceive might have a negative impact on students' examination results (Whitefield, 2012). Ganzdez, Rodviguez, & Nistal (2009) in their research found that LMS only focus on organizing and structuring the learning materials whereas instructors need more learning tools or media to develop learning activities based on pedagogy elements.

Although the use of LMS had been widespread in schools, higher education as well as companies, but there is still debates about its

effectiveness in education around the world (Mohamed Azmi, Zeehan, Fahad, Maryam, & Hisham, 2012). LMS offer lots of advantages, however it demands lots of responsibilities from instructors and students (Kanninen, 2008). Instructors must able to fulfill the virtual space that has been left by physical space. This is important to ensure students are guided to the planned learning objectives with the virtual communication facilities. Due to its varied communication facilities, LMS must not just become a platform to only deliver learning materials but it LMS must be properly utilized so that it become a proper learning techniques (Glynn, 2012). On this note the present study seeks to investigate the:

1.   respondents teaching experiences and expertise using LMS
2.   degree of LMS utilization among instructors at higher education institution
3.   perception of instructors on LMS
4.   barriers faced by instructors in utilizing LMS.

2.0   METHODOLOGY

The instruments used in this study adapted from Azlim (2010) and reviewed by expert from the higher education institution team. The survey on the use of LMS has been distributed through email to instructors in a public higher education institution. 20 instructors were selected as respondents from each faculty in a public higher education institution through simple random sampling. A total of 93 respondents had participated out of 160 instructors. The survey has been divided to three sections which are Section A: Demographic respondent, Section C: Instructors perceptions towards LMS: Section D: Instructors use of LMS and Section C: Barriers in using LMS.

Section A seeks respondents' demographics including their teaching experiences and expertise using LMS. Section B engaged instructor's perception towards LMS in teaching and learning process; and Section C consists of questions about usage for all the tools in LMS provided in the public higher education institution. Lastly, Section D was constructed to identify barriers that faced by instructors in using LMS.

3.0   FINDINGS

Findings from the questionnaires are discussed in this section. Before continuing the analysis, reliability test was conducted using SPSS. The

results show that the questionnaire is reliable (see Table 1: Reliability Test Result).

Table 1: Reliability test result

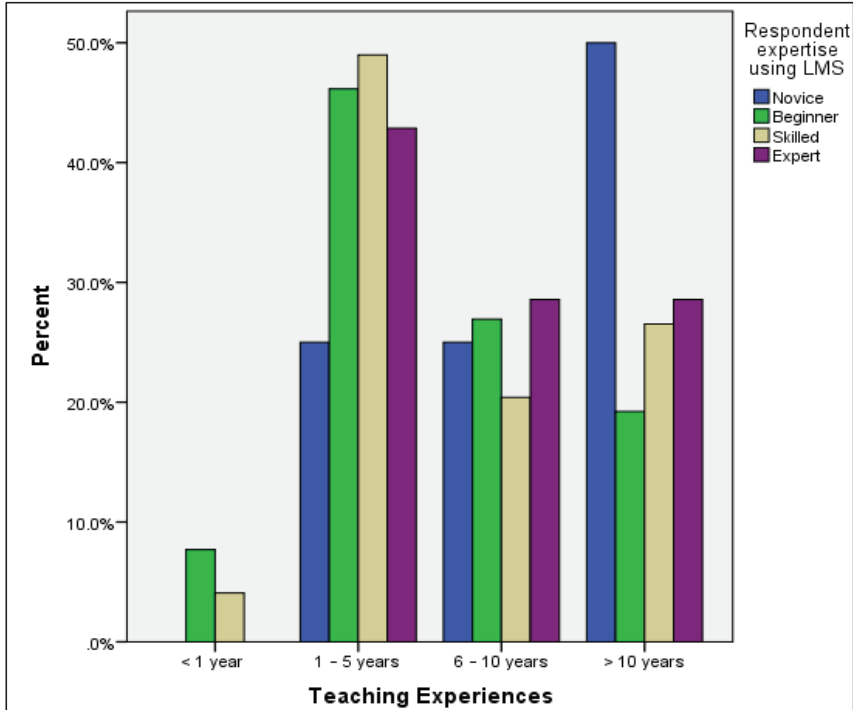| Section	Cronbach's Alpha
Overall questionnaire	.851
Section B	.819
Section C	.829
Section D	.954

Figure1: Respondents teaching experiences and expertise using LMS

Figure 1 shows percentages of instructors that participated in the survey according to their teaching experiences and expertise using LMS. The categories having more than 10 years of teaching experience recorded with highest percentages of novice LMS users. In contrast, categories between 1-5 years recorded highest percentages of expert LMS users. However, they also recorded high percentages of novice LMS users.

Table 2: Instructors perception towards LMS

Items	Mean	Std. Deviation	Point scale
LMS helps me to approaches my students better	3.38	0.765	neither agree nor disagree
LMS helps me to manage learning materials better	4.18	0.570	agree
LMS helps students to communicate better	3.62	0.721	agree
The use of LMS helps me to prepare learning activities effectively	3.90	0.660	agree
LMS provide space for students to construct knowledge	3.80	0.600	agree
LMS support theory of constructivism	3.75	0.637	agree

From the questionnaire in this section, Likert scale has been used with five point scale as (1): strongly disagree; (2): disagree; (3): neither agree nor disagree; (4): agree; and (5): strongly agree. The mean score that derive from finding are classified according to closer point of scale. Table 2 depicted that, instructors have positive perceptions towards the importance of LMS in teaching and learning. Instructors agreed that LMS helps them to manage their learning materials better. Besides, they also agreed that LMS helps them to prepare learning activities effectively. Instructors also believe LMS able to provide space for students to construct knowledge conjunction to constructivism learning theory. However, they are neither agree nor disagree about perception on LMS may help them to approaches my students better.

Table 3: The use of tools in LMS

Tools	Mean	Std. Deviation	Point scale
Document	4.13	.912	often
Exercises	1.85	1.179	hardly used
Assignment	2.45	1.486	hardly used
Groups	1.62	1.093	hardly used
Forum	1.80	1.069	hardly used
Wiki	1.31	.722	never
Learning Path	2.02	1.277	hardly used
Users	2.39	1.407	hardly used
Chat	1.55	.927	hardly used
Announcement	3.42	1.305	often
Course Description	2.84	1.447	seldom
Agenda	2.00	1.216	hardly used

Likert scale has been used with five point of scale as (1): never; (2): hardly used; (3): seldom; (4): often; and (5): frequently was adopted to engage the tools that is/are frequently used used . Mean score that derive from finding are classified according to closer point of scale. Based on Table 2, survey found that the use of tools in LMS is low. Only two tools that have been used often which are document tools

and announcement tools. Eight from the tools are being hardly used by the instructors in their teaching and learning environment which are Exercises, Assignment, Groups, Forum, Learning Path, Users, Chat and Agenda tools. One of the tools is identified as never used which is Wiki tools.

Table 4: Barriers to use LMS

Items	Mean	Std. Deviation	Point scale
I do not know how to use the LMS.	2.24	1.057	disagree
I was not exposed to the use of Chat tools in LMS.	3.29	1.059	neither agree nor disagree
I was not exposed to the use of Wiki tools in LMS.	3.33	1.077	neither agree nor disagree
I was not exposed to the use of Learning Path tools in LMS.	3.06	1.131	neither agree nor disagree
I was not exposed to the use of Users tools in LMS.	2.97	1.137	neither agree nor disagree
I was not exposed to the use of Course Description tools in LMS.	2.87	1.163	neither agree nor disagree
I was not exposed to the use of Agenda tools in LMS.	3.10	1.074	neither agree nor disagree
I was not exposed to the use of Forum tools in LMS.	3.16	1.116	neither agree nor disagree
I was not exposed to the use of Assignment tools in LMS.	2.89	1.193	neither agree nor disagree
I was not exposed to the use of Groups tools in LMS.	3.32	1.065	neither agree nor disagree
I was not exposed to the use of Exercises tools in LMS.	3.27	1.105	neither agree nor disagree
I was not exposed to the use of Announcement tools in LMS.	2.80	1.185	neither agree nor disagree
I was not exposed to the use of Document tools in LMS.	2.48	1.274	disagree
LMS not help the process of learning to be better.	2.38	.955	disagree
I do not know how to construct learning activities in LMS	2.71	1.079	neither agree nor disagree
Use of LMS complicates me to monitor student performance.	2.69	.978	neither agree nor disagree
I cannot control the activities of my students in LMS.	2.98	.955	neither agree nor disagree
The University / Faculty do not encourage me to use LMS.	2.13	.935	disagree
Interfaces of LMS confuse me	3.03	1.098	neither agree nor disagree
Limited Internet access restraint me from use LMS.	2.80	1.109	neither agree nor disagree
Limited computer facilities restraint me from use LMS.	2.76	1.183	neither agree nor disagree

From the questionnaire in this section, Likert scale has been used with five point scale as (1): strongly disagree; (2): disagree; (3): neither agree

nor disagree; (4): agree; and (5): strongly agree. Mean score that derive from finding are classified according to closer point of scale. Instructors disagree they do not receive encouragement from university or faculty to use LMS in their teaching and learning environment. Instructors also disagree with the statement they do not know how to use LMS. Besides, the instructors also disagree that LMS not help the process of learning to be better. However, instructors are neither agree nor disagree about being exposed to the tools in LMS except for tools Document.

4.0 DISCUSSION

Even though instructors have a positive perception towards the advantage of LMS, the use of LMS among instructors is rather low. Christie & Garrote (2011) in their research also found that instructors may had a difficult time to use tools in LMS to design learning activities because of lack of motivation. Instructors' that lack of motivation or training in utilizing LMS consequently effect the utilization of LMS among students. Thus, advantages of LMS could not be disseminate among users either instructors or students in their learning environment.

Tools that are often used by instructors are Document and Announcement tools. This finding in line with Glynn (2012) that found most of today's LMS is only use to focus on the delivery of learning material rather than learning the proper techniques. This finding proved tools in LMS that promote active learning are used far less than course management tools. Instructors focus more on management rather than utilizing LMS tools in constructing learning activities for students. If the situation continues, other tools in LMS that uses as online discussion tools and active learning would not be utilize. Hence, active learning does not happen and not engaging students in their learning environment optimally.

However, there are some barriers that have been identified. Instructors claimed that they do not receive the sufficient exposure to the usage of tools in LMS. Supported finding from Kalinga (2008) who found that inadequacy in qualified instructors due to lack of training in using LMS have become a barrier in implementation of LMS in education institutions. Even so, the barriers that identified in this study are manageable. The barriers can be managed if a support centred of LMS provides training for instructors. But to propose a LMS support centred may be time consuming. Thus, this study proposes a collaborative learning activity framework as guidance for instructors in utilizing the LMS. The proposed framework helps instructors to design collaborative learning activity therefore active learning would take place.

4.1 Suggested Framework

The results obtain from research conducted shows that instructors significantly do not have inadequate knowledge to use LMS optimally in their learning and teaching process. Even though they have knowledge about pedagogy, they struggled to deliver lesson using LMS.

Additionally, instructors also having time constrained to explore tools in LMS and design learning activities for students. Thus, this collaborative learning activity framework is proposed for utilizing LMS in learning and teaching process (see Figure 1: Collaborative learning activity framework)

This framework was designed without neglecting pedagogy elements. Along with the passage of time and the development of technology in education, the pedagogy concept also evolves rapidly from primary school up to higher education level. The statement also supported by (Sharples, *et.al.*, 2013) that claimed with the evolvement of technology, instructors should ready to explore a new form of teaching technologies.
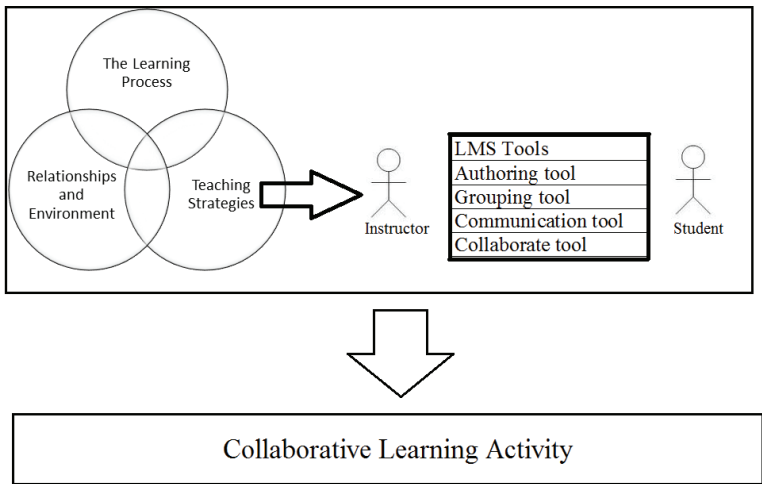

Figure 2: Collaborative learning activity framework

There are three pedagogy elements that have been identified (Pupil Voice Wales, 2009). However, to construct this framework only teaching strategies was taking into account. Teaching strategies that are selected is collaborative learning. Collaborative learning encourages students to work effectively as a team hence their social interaction and communication can be improved (Cooperstein & Kocevar-Weidinger, 2004). When students participate actively in learning activities, they are more focus in class (Weaver, Spratt, & Nair, 2008).

Instructors and students as users in this framework are interact with LMS tools which can be classified to four categories which are authoring tools, grouping tools, communication tools and collaborating tools (Kintakaningrum, 2012). Users are communicated and collaborated among them as team members and facilitator in order to achieve specific learning objective or outcome. The interactions in learning process are delivering and constructing knowledge as collaborative learning activity.

5.0   CONCLUSION

LMS usage focus more on management thus learning does not happen effectively. Ganzdez, Rodviguez, & Nistal (2009) in their research found that LMS only focus on organizing and structuring the learning materials whereas instructors need more learning tools or media to develop learning activities based on pedagogy elements. Daniels, Jacobsen, Varnhagen, & Sharon Friesen (2013) agreed that LMS itself not the total solution to the engagement of students in teaching and learning, but the encouragement from the instructors to students on how they leverage the benefits from LMS tools also play an important role. Thus a framework will be constructed as guidance for instructors using tools in LMS to create active learning activities.

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