

# The effect of lecturers' performance on students' LMS adoption

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**Abstract:** The adoption of Learning Management System (LMS) has become a requirement at universities as it is enhancing the teaching and learning environment. Though the success of the adoption of LMS depends on lecturers' and students' use, its adoption is initiated by lecturers' acceptance and use, which in turn stimulates students to use it in classes. The objective of this article is to evaluate the effect of lecturers' performances that influence the students' LMS adoption in blended learning environment. A survey was conducted among undergraduate students who use LMS extensively for their learning purpose. The result of the study indicates that lecturers' performance including self efficiency, attitude towards LMS, responsiveness, and teaching style plays a significant role in determining students' LMS adoption.

**Keywords:** Learning Management System, blended learning, e-learning,

## Introduction

The use of Information Communication Technology (ICT) is a vital prerequisite for the development of a knowledge-based economy. Universities are undergoing paradigmatic shifts as they make greater use of information and communications technologies. This has resulted in the use and adoption of e-learning, which has appeared as an essential tool to impart knowledge in the university as well as corporate sectors.

Among the e-learning tools on the market, LMSs are viewed as the most basic and reliable e-learning tool in blended learning environments, and they are often the starting point of any Web-based learning

program (Kakasevski et al, 2008). Examples of LMS are Blackboard, WebCT, eCollege, Moodle, Desire2Learn, and ANGEL etc. An LMS not only provides academic institutions with efficient means to train and teach individuals, but also enables them to efficiently codify and share their academic knowledge (Al Busaidi 2012).

Lecturers are the major drivers of LMS. When lecturers are committed to e-Learning and exhibit active and positive attitudes, their enthusiasm will be perceived and further motivate students. The social influence model of technology proposed by Fulk, Schmitz, and Steinfield (1990) states that group members' or supervisors' attitudes toward technology affects individuals' perceptions. Individuals are expected to develop their own coordinated patterns of behavior by observing others' actions, behaviors, and emotional reactions (Fulk, 1993). Though the success of the adoption of LMS depends on lecturers' and students' use, its adoption is initiated by lecturers' acceptance and use, which in turn stimulates students to use it in classes. Learners' continuous acceptance and use is significant for the success of LMS deployment. Increasing effectiveness of the e-learning systems has become one of the most practically and theoretically important research areas in both educational engineering and IS fields (Lee and Lee, 2008).

The administrators of Sri Lankan universities are keen on assessing the actual status of faculty and students' usage of the LMS as the acquisition or construction of such a system and its annual cost of operation are significant. Examining the success of e-learning system deployment is essential for its continuous use. This study investigates the impact of lecturers' performance on students' LMS adoption from students' perspectives.

## Review of Literature

Universities have invested large amounts of money on new technology in the recent years. This leads to an expectation that lecturers will use these technologies in teaching and learning in an effective way. Educators are urged to incorporate technology into instruction, but the effectiveness of educational technology is determined by teachers' readiness to use it, not by its mere presence in the classroom. The success of LMS in any institution starts by instructors' acceptance, which in turns initiates and promotes learners' utilization of LMS.(Al- Busaidi et al 2010).

As for all educational activities, the lecturer plays a central role in the success and effectiveness of e-learning based classes. Webster and Hackley (1997) proposed three instructor characteristics that affect e-learning success consist of IT competency, teaching style, and attitude and mindset. Al-Busaidi (2012) found that instructor characteristics that affect students' LMS adoption include attitude, teaching style, control, and responsiveness. Ozkan et al. (2009) identified nine instructor characteristics that affect LMS adoption are responsiveness, enjoyment, availability, self efficiency, promptness, usefulness, fairness, communication ability and encouraging interaction between students. Volery and Lord (2000) suggested that instructors provide various forms of office hours and contact methods with students. Lecturers should adopt interactive teaching style, encourage student-student interaction. It is so important that Lecturers have superior control over IT and is capable of performing basic troubleshooting tasks. Selim (2007) concluded three lecturer characteristics that affect e-learning success are IT competency, teaching style and attitude and mindset.

This study examines lecturers' performances in terms of attitude towards LMS, responsiveness, teaching style, and self efficiency, and these factors influence the students' LMS adoption see Figure 1.

## Research Framework

The framework conceptualized based on the work of Al- Busaidi (2012), Ozkan et al., (2008), Sun et al.,(2008), Selim (2007), Volery and Lord (2000), and Webster and Hackley (1997).

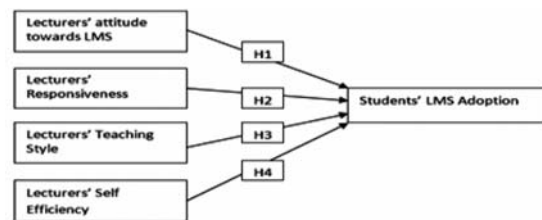


Figure 1: Research Framework

**Lecturers' attitude towards LMS:** Lecturer's Attitude toward e-learning is one of the issues related to the acceptance of LMS. Individuals' attitude should be considered in the investigation of LMS acceptance (Leidner and Jarvenpaa, 1995). Lecturers' attitude is a central motivational factor in developing and applying e-learning competence. Instructors attitude toward e-learning positively affect the outcomes of e-learning (Dillon and Gunawardena, 1995; Piccoli et al, 2001; Webster and Hackley, 1997; Sun et al, 2008). The instructor's attitude is a significant factor for learners' actual use of LMS (Al-Busaidi 2012). According to Ozkan et al (2008) e-learners are very satisfied from instructors' attitudes, and this affects the overall success of the LMS positively. Thus, if the instructor has a good attitude (views it as easy, useful, and satisfactory) toward the LMS, then students will also have the same attitude and they will use it.

**Responsiveness:** Lecturers' online responsiveness is critical to the success of LMS. Instructor responsiveness refers to the learner's perception of a prompt response from the instructor to online problems and requests (Sun et al., 2008). Instructors' timely response significantly influences learners' satisfaction positively (Arbaugh and Duray, 2002) According to Ozkan et al (2008) learners' perceived satisfaction toward e-learning positively related to instructors' rapid responses to student's needs. The lecturers' prompt responsiveness illustrates to learners the usefulness and success of using LMS in blended learning. Thus, instructors' prompt online responsiveness encourages learners to adopt LMS, and be satisfied with it.

**Teaching style:** The lecturer's teaching style may be a crucial factor for the success of LMS from the learner's perspective. Instructors with an interactive teaching style significantly impact the learners' involvement and participation, cognitive engagement

and attitudes toward the technology (Webster and Hackley, 1997). Instructors with an interactive teaching style are critical for a positive learning outcome (Webster and Hackley, 1997; Wan et al., 2007). Interactivity improves e-learning satisfaction (Arbaugh, 2000) and learning effects (Piccoli et al., 2001). Thus, instructors with an interactive teaching style enhance learners' use, acceptance, and satisfaction with the LMS.

**Self efficiency:** User self efficacy is highly recognized as an important issue in the acceptance of any information system including LMS. Self-efficacy is defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1977). Thus, computer self-efficacy means individuals self-assessment of their ability to apply computer skills to accomplish their tasks (Compeau et al., 1995). Several empirical studies found significant effects of the computer self efficacy on the perceived usefulness on an information system (Vankatesh and Davis, 1996; Chau et al., 2001). In the context of e-learning system Ball and Levi (2008) found significant effect of instructors' acceptance.

Based on the preceding discussion, the following hypotheses were generated

*H1: Lecturers' attitude towards LMS is significantly related with students' LMS adoption*

*H2: Lecturers' responsiveness is significantly related with students' LMS adoption*

*H3: Lecturers' teaching style is significantly related with students' LMS adoption*

*H4: Lecturers' self efficiency is significantly related with students' LMS adoption*

## Research Methodology

The conduct of this study was using quantitative approach. Department of Industrial Management, University of Kelaniya was involved in the study. Findings of the study were then used to develop testable hypotheses. In order to test hypotheses, self administered questionnaire was disseminated a population consisted of LMS adopters. A stratified

sampling technique was adopted in order to assure that respondents were well responded. A total of 50 questionnaires were distributed and all of them were returned and usable. Table 1 summarizes the demographic profile and descriptive statistics of the respondents.

A survey instrument for specifying the lecturer performance factors within each category was developed. The lecturers' attitude towards LMS constructs were self developed based on the work of Al-Busaidi (2012) and Selim (2007). To capture Lecturers' responsiveness the measures were adopted from Ozkan et al., (2008). Teaching style constructs were self developed based on the work of Al-Busaidi (2012) and Selim (2007). Lecturers' self efficiency measures were adopted from Ozkan et al., (2008). All items used a five-point Likert-type scale of potential responses: strongly agree, agree, neutral, disagree, and strongly disagree.

Statistical software package SPSS version 16.0 was engaged to analyze the data. Each measure's reliability was tested with Cronbach's Alpha values which are summarized as below.

**Table 1: Demographic profile and descriptive statistics of surveyed students**

Item	Frequency	Percentage
Gender		
Male	19	38
Female	31	62
Age		
20-22	24	48
23-25	26	52
PC ownership		
Yes	42	84
No	08	16
Laptop ownership		
Yes	47	94
No	03	06
Often of LMS use		
Regular	15	30
Just-to download	35	70

**Table 2: Reliability of Instruments measures**

Measures	Cronbach's Alpha	No of Items
Lecturers' attitude towards LMS	0.641	2
Lecturers' responsiveness	0.733	2
Lecturers' teaching style	0.632	2
Lecturers' self efficiency	0.795	3

**Table 3: Variables, Factors, and Total Eigen values and % Cumulative Variances**

Variables	Factor	Eigen value	%Cumulative Variance
Lecturers' Attitude towards LMS	1	1.495	74.761
Responsiveness	1	1.542	77.111
Teaching Style	1	1.463	73.168
Self Efficiency	1	2.130	70.990

Data reduction technique was performed on these four variables executing principle component and factor analysis. The following table summarizes number of factors extracted with respect to each variable to explain more than 70% of the cumulative variance which is enough to explain the respective variables.

Finally the study employed the use of correlation and regression analysis. According to Alreck and Settle (1995), when the objective of the study is to test the degree and significance between two continuous variables from interval or ratio scales, the appropriate techniques is either correlation or regression analysis. According to Bryman and Cramer, (2001) Correlation entails the provision of a yardstick whereby the intensity of strengths of a relationship can be measured. However correlation analysis gauges only the degree to which two variables are related or move together but there is no assumption that one is causing or affecting the other (Alreck and Settle, 1995). Therefore, to measure the degree and direction of influence the independent variable on the dependant variable, the regression analysis was also applied in this study.

## Findings and Discussion

Lecturers' performances that were examined in this study consist of lecturers' attitude towards LMS, responsiveness, teaching style and self efficiency. As shown at Table 4 the correlation analysis between the aforementioned variables against students' LMS adoption produced significant positive correlations. Finally regression analysis (see Table 5) using the enter method was also executed separately between lecturers' performance variables and students' adoption of LMS.

**Table 4: Correlation matrix between Lecturers' Performance and students' adoption of LMS**

Lecturers' Characteristics	Correlation	P Value
Attitude towards LMS	0.625**	0.000
Responsiveness	0.524**	0.000
Teaching Style	0.297 *	0.036
Self Efficiency	0.668**	0.000

Lecturer's Attitude toward LMS has significant positive relationship with students' LMS adoption ( $r=0.625$ ,  $p=0.000 < \alpha = 0.05$ ). This indicates that, lecturers' attitude towards LMS positively affect students' adoption of LMS. Further, based on the regression analysis (See Table 5), it was discovered that lecturers' attitude towards LMS solely explain explained 39.1% variation in LMS adoption i.e.  $R^2 = 0.391$ , with  $F = 30.765$ , and  $p = 0.000$ . Therefore H1 is supported. This finding have clearly consistent with Dillon and Gunawardena (1995), Webster and Hackley (1997), Piccoli et al. (2001), Ozkan et al (2008) Sun et al (2008) and Al-Busaidi (2012).

There is a significant positive correlation exists between lecturers' responsiveness and students' adoption of LMS ( $r=0.524$ ,  $p =0.000 < \alpha = 0.05$ ). Further, based on the regression analysis, it was discovered that lecturer responsiveness solely explained 27.5% variation in LMS adoption i.e.  $R^2 = 0.275$ , with  $F = 18.176$ , and  $p = 0.000$ . It can be safely concluded that the formulated hypothesis H2 supported. Moreover, this finding is consistent with Arbaugh and Duray (2002) and Ozkan et al (2008).

Results of the correlation analysis unveiled that there exist positive low correlation between teaching style and students' adoption of LMS. The value of Pearson's  $r = 0.297$  with  $p = 0.036 < \alpha = 0.05$  suggesting that positive small relationship prevailed. Consequently, based on the regression analysis, it was noted that teaching style solely explained 8.8% variation of LMS adoption i.e.  $R^2 = 0.088$ , with  $F = 4.637$ , and  $p = 0.036$ . It can be concluded that the teaching style has bearing effect in determining LMS adoption. Moreover, this finding is consistent with Webster and Hackley, (1997), Wan et al.(2007), Arbaugh (2000) Piccoli et al. (2001), and Al- Busaidi (2012).

**Table 5: Summary of regression analysis between lecturers' performance variables and students' adoption of LMS**

Independent Variable	B	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	P value
Lecturers' attitude towards LMS	0.498	0.391	0.378	30.765	0.000
Responsiveness	0.418	0.275	0.260	18.176	0.000
Teaching style	0.236	0.088	0.069	4.637	0.036
Self Efficiency	0.532	0.446	0.435	38.655	0.000

It has been proven in many empirical studies that lecturers' self efficiency has contributing effect on the students' adoption of LMS. To this effect, it is also hypothesized that lecturers' self efficiency significantly related with students' adoption of LMS (H4). There is a significant positive correlation exists between lecturers' self efficiency and students' adoption of LMS ( $r=0.668$ ,  $p = 0.000 < \alpha = 0.05$ ). Further, based on the regression analysis, it was discovered that lecturers' self efficiency single-handedly explain 44.6% variation of students' adoption of LMS, i.e.  $R^2 = 0.446$ , with  $F = 38.655$ , and  $p = 0.000$  (see Table 5). This finding supports the formulated hypothesis H4, and also obviously in consistent with that of Ozkan et al (2008).

## Conclusion

Lecturers' performance including self efficiency, lecturers' attitude towards LMS, responsiveness, and teaching style plays a significant role in determining students' LMS adoption. Since being a student, one is

always subject to lecturers' performance, and this performance is one of the drivers to students' behavior. Results and findings of this study have provided empirical evidence regarding the important aspect of lecturers' performance that would significantly contribute towards students' LMS adoption. Lecturers should possess a good attitude towards LMS and make sure that they are trained and experienced well with LMS before adopting it in their teaching process. Further, lecturers must timely response to the students' online problems and requests.

This study confirmed some findings of previous studies of Dillon and Gunawardena (1995), Webster and Hackley (1997), Piccoli et al. (2001), Arbaugh (2000), Arbaugh and Duray (2002), Ozkan et al (2008) Sun et al (2008) and Al-Busaidi (2012). Thus lecturers self efficiency, lectures' attitude towards LMS and lecturers' responsiveness have strong positive correlation with students' LMS adoption. In significantly the current study revealed that there exist positive but low correlation between teaching style and students' adoption of LMS, while Webster and Hackely (1997), Wan et al.(2007), Selim (2007)and Al- Busaidi (2012) concluded lecturers' teaching style plays a positive significant role in determining students' adoption of LMS.

All of the above mentioned studies have done in foreign countries and the knowledge is lacking in Sri Lankan context. This study would help individual lecturers to evaluate their performance in using LMS from students' perspectives and would be useful to lecturers who are interested in further developing their skills and knowledge about adopting LMS in their teaching process, and may also provide a starting point for lecturers who want to follow LMS adopting lecturers.

## Limitations and Future Research

This study has limitations. First, the sample was collected from Department of Industrial Management, university of Kelaniya, more research can be conducted at several department, and in different universities to improve the generalization of the findings. Second future research might also examine the other critical factors (i.e. Students' perspectives, LMS characteristics,



and university support) influencing the success of universities' LMS adoption in detail. Finally, the study assessed LMS adoption from students' perspective and further research may evaluate it from lecturers' perspective.

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