# Use of learning management systems by the undergraduates in Rajarata University of Sri Lanka

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*Abstract*

*Learning management system is a widely used technique by educational institutes to provide online learning and teaching support for students and teachers. Although students tend to use many e-resources, use of learning management system is evidently low. This study aims to identify the factors that effect on use of leaning management system by undergraduates in Rajarata University of Sri Lanka. A sample of 150 students was selected for the study using purposive sampling technique and a structured questionnaire was used in data collection. Descriptive statistics, correlation and regression analysis were used in the data analysis. The result reveals that the lecturer support, students commitment and perceived usefulness have a significant effect on use of learning management system by the undergraduates in the university. The university should take initiatives to encourage academic staff for delivering lectures and conducting assessments through the university learning management system. Future studies could validate the findings of the present study using a larger sample representing other universities in the system.*

*Keywords: ICT infrastructure, learning management system, lecturer support, perceived usefulness, student commitment.*

## 1. Introduction

Learning Management System (LMS) is one of the knowledge management tools that supports e-learning. LMS can be used to organize and provide access to online learning services for students, teachers and administrators (Ardito et al., 2006). Through LMS, users can plan, implement and assess specific learning activities in an e-learning environment (Hayashi, Chen, Ryan, & Wu, 2004). The e-learning is a process where learning can be done at anytime and anywhere using computers or similar devices. However, e-learning is commonly referred to the intentional use of networked ICT in

teaching and learning (Ambika & Kavitha, 2014). A number of terms has been used to describe this mode of teaching such as web-based learning, virtual learning, distributed learning etc., and all these terms are referred to as educational processes in an online environment that utilize a learning portal to mediate in teaching and learning activities (Ayub, Khalid, Tariq, Elahi, & Nadeem, 2012).

Mosahab, Mahamad, and Ramayah (2010) found that many colleges are using LMS for e-learning courses, but many instructors restrict themselves to uploading course materials to the course website or made late to upload and never use the interactive features such as chat, discussion forum, email, messages on LMS environment. Some instructors may use the discussion board to generate class discussion among students and themselves nevertheless the lack of immediate feedback with the discussion board in LMS has discouraged users to utilize them (Adzharuddin & Ling, 2013).

It is seemed to be a gap exists between the reality and the many advanced teaching tools that are provided in LMS, such as multimedia materials, which were considered as possible means for enhancing teaching, but are not utilized. LMS system is used more adaptive and customizable manner. This is also to support teachers or instructors with different computer level skills (Almarashdeh, Sahari, Zin, & Alsmadi, 2010). Therefore, some students who lack the computer skills are automatically reluctant to the use of university LMS portal. Although many interactive features are available in the LMS, its capacity for using may still be limited because of its demand on the commitments from both instructor and students during a specific time frame (Adzharuddin & Ling, 2013). Therefore, this study investigates why many of the students of Rajarata University of Sri Lanka (RUSL) are not using the university LMS for their educational activities.

The rest of this paper is organized as follows. The next section reviews literature deals with factors associating the use of LMS. Third section of the paper describes the materials and methods used in the study. Fourth section presents the results and discussion. Final section concludes the study with recommendations, limitations and avenues for the future works.

## 2. Literature review

LMS is a software application or web-based technology used to plan, implement and assess a specific learning process. Typically, LMS provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance online. The LMS may also provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums. LMS is also called Course Management System (CMS) (Alias & Zainuddin, 2005).

According to Shonola and Mike (2014) one of barrier to implement LMS is perception of inadequate lecturer support. Similarly, teachers' resistance to change has also been cited as a personal factor that impinges e-learning adoption (Suraweera, 2011). Mahoney (2008) refers it as a culture of resistance, where teachers accustomed to traditional modes of instruction and refuse to change. Teachers are reluctant to put their courses into an electronic format and in some occasions, they prefer the traditional methods despite having access to newer technologies (Nasser, Cherif & Romanowski, 2011).

According to investigation of Kisanga and Ireson (2015), another major constraint to LMS based learning in Nigeria is lack of infrastructure. Similarly, developing and sustaining a reliable and productive LMS depends on the provision of proper LMS infrastructure that includes hardware, software and good connectivity, all of which constitute a barrier to LMS in higher educational bodies. This result is in line with the studies of Ozkan, Koseler, and Baykal, (2008) and Shonola and Mike, (2014) in which the authors believe that lack of infrastructure is one of the barriers that influence the use of technology in education.

The reason for preparation of LMS based learning without motivation is attitude because it gives additional workload in classroom teaching (Bowen et al., 2012). Similarly, some mature students are also not willing to embrace technology when learning as they are mainly studying for promotion at work rather than skill acquisition. This result is consistent with that obtained on a previous study on e-learning in which the author stated that a lukewarm attitude on the side of the students in the e-learning processes is a challenge to successful implementation of LMS. Shonola and Mike, (2014) found that interactive digital technologies in Southwest Nigerian universities being impeded by lack of motivation for the faculty members.

According to Munasinghe and Wijewardana (2016), perceived usefulness and perceived ease of use have significant effects on the attitude towards use of LMS. Also, the study confirms that the students have positive attitudes towards use of the LMS. Therefore, university should create an e-learning culture through use of LMS by providing useful content with ease of access to the students. Chen (2009) discussed an assessment model that includes primary criteria and sub-criteria in order to evaluate the usefulness of an e-learning system. The e-learning material focuses on quality and contents such as easiness, structure, contents and interaction. The quality of web learning platform focuses on quality of web connection and learning platform.

Based on the above literature review the study is focused to identify the reasons for lack of the use of LMS among undergraduates in Rajarata University of Sri Lanka. Lecturer support, ICT infrastructure, students' commitment, and perceived usefulness are considered as independent variables and the students' usage of LMS is considered as dependent variable. Further, the study focuses the following research model (Figure 1) with the four hypotheses.
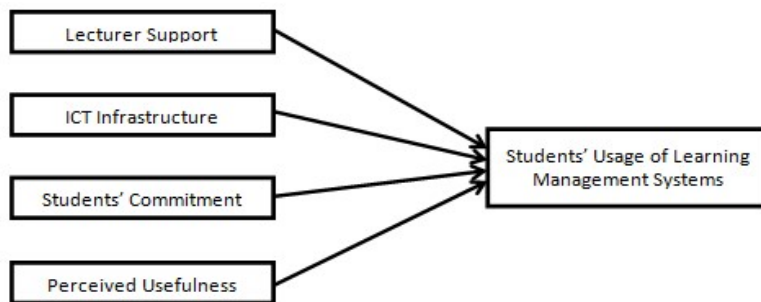


**Figure 1** Research model

Hypotheses

H$_1$: There is a positive effect of lecturer support to students' use of LMS in Rajarata University of Sri Lanka.

H$_2$: There is a positive effect of ICT infrastructure to students' use of LMS in Rajarata University of Sri Lanka.

H3: There is a positive effect of students' commitment to students' use of LMS in Rajarata University of Sri Lanka.

H4: There is a positive effect of perceived usefulness to students' use of LMS in Rajarata University of Sri Lanka.

## 3. Methodology

A structured questionnaire was developed and primary data were collected from 150 undergraduates from four faculties of the Rajarata University of Sri Lanka namely Faculty of Applied Sciences, Faculty of Agriculture, Faculty of Management Studies and the Faculty of Social Science and Humanities. The sample was selected using purposive sampling technique. The questionnaire was divided into two parts. First part of the questionnaire was devoted for the demographic information and second part of the questionnaire was reserved for measuring the key variables of the study. In fact, items on Likert type five scale ranging from 1 (Strongly disagree) to 5 (Strongly agree) were used. Cronbach's Alpha test was used to measure the internal consistency of these constructs. Values reported well over the general cutoff (0.7) ensure the reliability of the constructs. Pearson correlation analysis and multiple regression analysis were used to identify the relationships among the variables and to test the hypotheses. Demographic factors were analyzed using descriptive statistics.

## 4. Results and discussion

Table 1 shows the descriptive statistics of independent and dependent variables. Almost all the mean values of the variables are above 3 and moderately high. These values indicate that lecturer support, ICT infrastructure, students' commitment and perceived usefulness are modest. Moreover, average of LMS usage indicates lack of LMS usage by the students. Statistics for standard deviation and skewness signify that there is no more deviation among the respondents on these variables.

Table 1
Descriptive statistics for research variables

| Variable | Mean | Std. Deviation | Skewness | |
| --- | --- | --- | --- | --- |
| | | | Statistic | Std. Error |
| Lecturer Support | 3.475 | 0.668 | 0.214 | 0.123 |
| ICT Infrastructure | 3.393 | 0.745 | -0.023 | 0.142 |
| Student Commitment | 3.145 | 0.692 | -0.231 | 0.123 |
| Perceived Usefulness | 3.562 | 0.760 | 0.147 | 0.154 |
| LMS Usage | 3.438 | 0.980 | -0.446 | 0.111 |

Table 2 presents the result of correlation analysis. The result indicates that lecturer support, ICT infrastructure, student commitment, perceived usefulness are positively correlated with use of LMS. This result signifies that these factors are very important in encouraging students for use of LMS.

Table 2
Result of correlation analysis

| Variable | A | B | C | D |
|---|---|---|---|---|
| A. Lecturer support | - | | | |
| B. ICT infrastructure | 0.657** | - | | |
| C. Student commitment | 0.163* | .175* | - | |
| D. Perceived usefulness | 0.187* | 0.220** | 0.543** | - |
| E. Usage of LMS | 0.462** | .424** | .506** | .664** |

*\*\* Correlation is significant at the 0.01 level*
*\* Correlation is significant at the 0.05 level*

Table 3 reproduces the result of regression analysis. Adj. R Square and F –test reveal the fact that regression model is well fitted to the data and suited to predict the behavior of use of LMS through predictors of lecturer support, IT infrastructure, student commitment and perceived usefulness. The VIF values are also indicating that there is no any suspect for multicolinearity among the predictor variables. Regression coefficients also imply that lecturer support, student commitment and perceived usefulness have positive and significant influence over student use of LMS. However, IT infrastructure does not show any significant influence over student use of LMS.

Table 3
Result of regression analysis

| Variable | β | Standard error | t-value | Sig | VIF |
|---|---|---|---|---|---|
| (Constant) | -1.470 | 0.360 | 4.081 | 0.000 | -- |
| Lecturer support | 0.396 | 0.104 | 3.810 | 0.000 | 1.726 |
| IT infrastructure | 0.141 | 0.094 | 1.504 | 0.135 | 1.751 |
| Student commitment | 0.284 | 0.094 | 2.746 | 0.002 | 1.020 |
| Perceived usefulness | 0.638 | 0.083 | 7.704 | 0.000 | 1.012 |
| Adj. R Square = 0.576 | | F = 51.668 | | Sig F = 0.000 | |

Results of correction and regression analysis support only for $H_1$, $H_3$ and $H_4$ indicating that lecturer support is necessarily important to encourage students to use of LMS for their learning activities. This result is consistent to the findings of a study conducted by Shonola and Mike (2014). Student commitment is also found as a significant factor which determines the student use of LMS. Adzharuddin and Ling (2013) also stated that although many interactive features are available in the LMS, its capacity for use may still be limited because of its demand on the commitments from both instructors and students during a specific time frame. Similar to Munasinghe and Wijewardana (2016), this study also found perceived usefulness as a key determinant of the use of LMS by the students. On the contrary, this study does not support the view that ICT infrastructure including

availability of ICT, organizational support, organizational readiness, and top management support are closely related to behavioral intentions to use LMS in teaching and learning.

## 5. Conclusion

This study found that lecturer support, student's commitment, perceived usefulness are key factors that determine the use of University LMS by the undergraduates of Rajarata University of Sri Lanka. Moreover, the result reveals that the students commitment toward to use of University LMS is being at a low level. Even though literature supports the lack ICT infrastructure facilities may affect to reduce the use of LMS, the present study shows that ICT infrastructure does not make any significant influence on use of LMS by the undergraduates of Rajarata University Sri Lanka. Administrators of the University should take initiatives to encourage the lecturers and students for effective use of University LMS in their teaching, learning and assessments process. This study was solely based on the data collected from the undergraduates of the Rajarata University of Sri Lanka. Thus, future studies should validate the findings of the present study using a larger sample representing other universities in the system.

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