

# Awareness Acceptance level and Attitude of user for effective use of Learning Management System at Mehran University of Engineering & Technology, Jamshoro

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**Abstract:** The objective of this study is to find the level awareness and effectiveness of using LMS in Mehran University and to identify the attitude of faculty members and student towards the LMS and find out the problems that have slowed down the adoption of LMS in Mehran UET Jamshoro .In this study The Technology Acceptance Model (TAM) is used for quantitative research .The random sampling data was collected through Google forms totally 350 responses were received out of 950 participants belonging to MUET. The collected descriptive data was analyzed through SPSS software by calculating Means, standard deviation, Reliability and Correlation analysis and the regression test for measuring significant impact on students' attitude and faculty members towards using of (LMS) . It was developed to gather information regarding the verifying impact of factors 'Perceive Ease of use (PEOU)' and 'Perceived Usefulness (PU)' on attitude towards use of LMS. Unstructured interviews were also conducted in order to achieve the objectives of the study for assessing Awareness, Effective Usage and hurdles in the usage of LMS. The statistical results show high acceptance and positive attitudes of students and faculty members towards using the LMS in teaching and learning, in University. The findings of the survey reveal that the biggest barrier is poor Internet access and networking and second one is the inadequate trainings/awareness on the LMS platforms. Based on the survey results, researchers recommend that university should provide more comprehensive trainings regarding the use of LMS in an optimal way to increase its effectiveness in teaching and learning and should conduct further studies to find out more impeding issues and redressal strategies for proper and successful implementation.

**Keywords:** Learning Management System (LMS), Information Communication Technology (ICT). (TAM)Technology Acceptance Model, (PEOU) Perceive Ease of use, Usefulness

## 1. Introduction

Ongoing improvements of ICT technologies have greatly impacted the educational sectors all over the globe. To enhance the traditional learning systems of educational centers such as; universities, institutes and colleges are adopting some kind of e-learning tools as an alternate models based on virtual learning [1]. The term e-learning defines the use of multimedia technologies as a learning resource and service that remotely exchanged and collaborated to improve the quality of learning[2]. Internet and computer technologies are a way to conveying education to the remotely learners as integral part of their learning system [3]. Many educational institutes have widely adopted e-learning for information based managements. Learning management system is the fundamental and popular tool to keep a record of e-learning information system for special purposes (binyamin2019extend).

According to a recent study [4], throughout the world the COVID-19 has affected the entire education system. As a result, the higher education sector is providing alternative solutions for interrupted education during this pandemic. To achieve this, it is necessity to explore various digital learning platform. It is also important to associate teaching and learning processes with Information and Communication Technology (ICT), which plays a vital role in the implementation of various e-learning system like (LMS), Virtual learning Environment (VLE) or Course Management System (CMS) [5]. A large number of open source and software modules are available to deliver and manage online courses. At present, various education institutes all over the world support LMS. A number of LMS software are available to provide best suitable environment for imparting online education to its faculty members and learners all the time along with traditional

face to face learning and teaching. ICTs play a vital role in the implementation of various LMS for providing education to all students irrespective of their geographical, social or economic status and institutions are also offering online virtual classrooms as well mobile learning [6]. LMS is web-based technology used to plan, implement and assess a particular learning process. It is software based application for administration, tracking reports, documentation, and training and development programs for delivery of educational course. In last few years, LMS has become an active domain among researchers. Online education in higher education has exponentially grown and has a favorable effect on the teaching by e-learning process. It is important to note that the acceptance of LMS and effective utilization of available resources like presence of wireless network in dedicated coverage area is very essential and having a standard browser to maximize use of LMS. The necessary requirements must be operational and accessible to student and teacher to meet in virtual classrooms .According to Baleghi, LMS is one of popular information systems (IS) around world. Many university recently have become equipped with LMS to enhance the quality of learning, teaching and support to manage their knowledge and communication [7-8]. In the previous study, students could use the well designed LMS system to enhance performance (perceive usefulness) and could also improve student skills such as effective online learning and self-direction with little effort (perceive ease of use) [8] [1]. According to this study, LMS could be used to manage trainings depending upon the need to organize educational records or distribute learning materials for effective automated administration and quality standards[9]. A web based platform can be used to deliver training programs [10] A number of Open source LMS are available. open source software is based on the concept of sharing and collaboration i.e. anyone can use the

software free of cost and one also gets the access to the code of the software so that one can make changes to the code according to the usage. So open source LMS are freely available for usage. Moodle, Open edX, Canvas, Sakai are some of the open source LMSs.

## 2. Related Work

The research determines the use of LMS, factors affecting distance learning students' acceptance and assesses the applicability of TAM. The findings of study reflected that there was high level of acceptance on LMS among distance learners. The analysis also assured positive effect of perceived usefulness and perceived ease of use on behavioral intention to use [12]

The study aimed to assess the faculty members attitude at Saudi universities over e-learning JUSUR. The result of the study indicated that there is a positive attitude of faculty members of Saudi universities towards using e-learning, there was needs of training for using the system[13].

The study was focused to determine the students' acceptance level and knowledge of using this new LMS at WSU. The findings of study indicated that non-availability of resources affected the acceptance level of LMS negatively. The study concluded that the campus faced the shortage of learning and teaching technology centers. The study therefore suggests to have learning and teaching technology centers with computers that have proper internet connection all the time[14].

The study also focused to examine university student's attitude using LMS at international Islamic university Malaysia. The study used perceived ease of use and perceived usefulness to assess the attitudes of students over LMS[15].the research was focused on assessing the attitudes of university students and faculty members using LMS in learning and teaching. The study revealed a positive attitude in university faculty members and students towards usage of LMS. The research further recommended rigorous trainings of LMS to university faculty members and students in an efficient way to enhance its effectiveness in learning and teaching. It emphasized on doing more research on impediments facing the parties in using LMS and their remedial measures [11].The study examines the influence of basic two factors of model TAM: perceived Ease of Use and Perceived Usefulness together with other factors of faculty support, self-efficacy, facilitation conditions and system quality specified in literature on students attitude over LMS use. The findings indicated a substantial influence of all these factors on students' attitude to LMS use. It is now responsibility of educational institutes to work on these factors to get maximum advantages from LMS[8].

The focus of this study was to assess the access of numerous activities on Moodle by students using mobile phones. The findings showed substantial usage different of numerous Moodle activities by students using cell phones. The response from students showed that they rarely used Moodle as it is not as an effective tool of learning because of restrictions of usability and reliability on mobile access [5].

## 3. Problem Statement

This study will carry out to examine the level of awareness, extent of use and attitude of Students and Faculty members in using LMS and the intention is to adopt modern educational system in Mehran UET. Most of the people believe that poor infrastructure, lack of computer facilities, low internet access and bandwidth are the major hindrances in the use of Learning Management System in Universities. The researchers found organizations may have all these requirements in place yet the usage of LMS was low

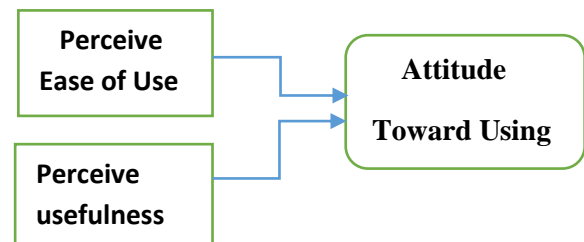
## 4. Methodology

The quantitative research design is adopted to achieve the objectives of the study i.e., to identify the level of awareness and effective use of LMS among students and faculty members in Mehran UET Jamshoro. The population include faculty member and student of (BE, ME, MBA, MS) of academic year (2016 to 2019) of university who are effectively interacting with each other. The random sampling data was collected through Google forms totally (350) responded from MUET.

### 4.1 Research Model

All the researchers supported the Technology Acceptance Model in predicting and explaining the use or intension to use of particular technology [12].The TAM has key factors as internal variables Perceived Ease of Use (PEOU) and Perceived Usefulness (PU). These are grouped under this dimension as indicative factors to evaluate how system's easiness affect user's perception and intension to system use. [8] This study analyzed, two independent variables (PU) and (PEOU) were believed to have some influence towards the dependent variable attitude of use LMS among students .[15].

Figure.1. The Research Model (conceptual framework)



### Research Question

- i. What is the level of awareness and use of LMS ?
- ii. The various open source and propriety learning management system available?
- iii. What impact of PEOU and PU on students' attitude toward use of LMS?
- iv. To what measure the attitudes of students and faculty members at MUET towards the use of the LMS in learning and teaching?
- v. Which barriers towards adoption of Learning Management System by faculty and students

## 5. Research output

### 5.1 Demographic Information

Table 1 shows sample of the 60.63% male and 39.37% female of respondent. –Most of the respondent's age lies between 20 to 40 years. Majority of the students is graduate 34% and undergraduate 45%. In faculty, the lecturers are 31(9.8%), Associate Professors 10 (3.4%), Assistant Professors 28 (8.9%) and Teaching Assistants 15(4.8%), Table also lists the experience of use: majority >1 year 135(respondents (42.9%); 1-2 year 65(20%) and 3-5 years 24(7.6%) respondents.

### VARIOUS LMS TOOL USE

As seen in Table 2, mostly used MOODLE (31%), OneNote Class Notebook Q-OBE (17.5%), Google Classroom (34%), Edmodo (10.5%), one of popular LMS tool used now a days that is MS

TEAMS (16.4%), 360 learning (10.5%), ZOOM(8.8%)

Table.1.demographic information

Gender	Frequency	Percent
Male	191	60.6
Female	124	39.4
Age		
21 - 30	220	69.8
31 - 40	59	18.7
41 -50	27	8.6
51-60	8	2.5
Academic Rank		
Faculty Member	104	32.9
Graduate student	107	34.6
Undergraduate student	105	45.3
LMS USAGE		
<1 year	135	42.9
1 -2 years	65	20.6
3 -5 years	24	7.6
Undergraduate student		
1 year	16	9.6
2 year	34	20.4
3 year	49	29.6
final year	67	40.7

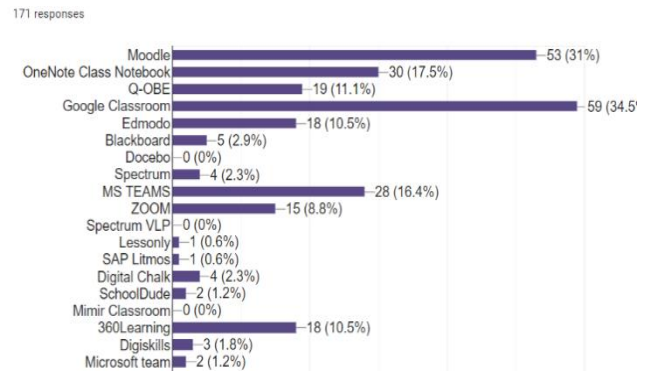


Table 2 : various LMS software used

**Object.1 The level of awareness of users about Learning Management System**

To achieve the first objective of the study as result of survey **60%** participants in our university are aware of LMS and **39.5 %** was unaware of LMS before pandemic period .but during pandemic used of LMS increase about **86.8%** are using as shown in table and 13.1 don't use the LMS as show in table

**Table3: Technology readiness of the study participants**

6. Are you aware of Learning Management system (LMS)?			MEAN	SD
N	%		1.27	.44
Yes	203	60.8		
No	133	39.5		
7. Have you ever used LMS?			1.05	.228
Yes	175	86.9		
No	28	13.1		
10. Do you find the use of LMS effective towards teaching or learning?			1.44	.780
Yes	122	69.7		
No	11	6.6		
May be	42	24		
11. Do you face problem(s) while using the LMS?			1.74	.442
Yes	75	42.8		
No	100	57.1		

## 5.2 Reliability Assessment

The researchers conducted reliability tests for each factor to assess the goodness and the consistency of measure (Almrashdah et al., 2010) the reliability considering the inter-item consistency assessed by Cronbach's alpha value. (Aman et al., 2020). The final result of the analysis exceeded the threshold value 0.7 in which value PEOU (.867) and PU (0.936) that is considered high reliability [12] for acceptance of research. The complete result leads to a conclusion report value as shown in table 4 below.

## 5.3 Descriptive Statistic

The means for three factors are calculated as perceive Ease of use (2.513), perceive Usefulness (2.558) and behavior intension to use (2.595) respectively. This means that all members of faculty and students of the university accept the use of LMS in their teaching and learning activities.

**Table 5: MEAN AND STANDARD DEVIATION**

Variables	M	SD
<b>Perceived Ease of Use</b>		
14. Do you think your interaction with the LMS is clear and understandable?	2.40	1.102
15. Do you think the use of LMS increases the interaction between teacher(s) and student(s)?	2.48	1.142
16. Do you think the use of LMS makes it easy for teachers to focus on individual student's learning progress?	2.69	1.134
17. Do you think the use of LMS Software helps you develop self-learning and long-life learning?	2.54	1.081
18. Do you think LMS software is easy to learn and use?	2.41	1.087
19. Do you think LMS software allows you to accomplish learning tasks more quickly?	2.55	1.133
<b>Perceived Usefulness</b>		
20. Do you think LMS software increases your productivity in teaching/learning?	2.62	1.146
21. Do you think the use of LMS enhances your effectiveness in educational work?	2.57	1.130
22. Do you think LMS software increases student's achievement and facilitates teacher's role?	2.49	1.092
<b>ATTITUDE TO USE</b>		
23. Do you think you need more training on how to use LMS software?	2.62	1.156
24. Do you think LMS will become necessity for all teachers and students in future?	2.58	1.239
25. Do you think LMS software will gradually replace traditional learning?	2.65	1.164
26. Do you think the cost of learning using LMS software is cheaper than normal learning due to the use of Internet?	2.57	1.148
27. Do you think LMS contributes to better utilization of the educational resources?	2.55	1.105

## 5.4 Interference statics

Analysis of correlation done between two independent variables perceive Ease of Use and Perceive Usefulness and dependent variable behavior intension shows that there is a significant correlation between PEOU and PU (0.8520) and BI (0.725) as show in Table: 7, correlation significant 0.001. Therefore the hypothesis

H1: Perceive Ease of Use has significant effect on perceive Usefulness (PEOU)

**Table: 6**

### ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	124.045	2	62.023	166.842	.000 <sup>b</sup>
	Residual	80.297	216	.372		
	Total	204.342	218			

a. Dependent Variable: Behaviour intension

b. Predictors: (Constant), Perceive Usefulness, Perceive Ease of Use

As shown in ANOVA Table 6, total variance explained and F-statistic (166.84) for each dependent a variable. Significant 0.000

**TABLE 7 Correlations**

		Perceive Ease of Use	Perceive Usefulness	Behaviour intension
Perceive Ease of Use	Pearson Correlation	1	.852**	.725**
	Sig. (2-tailed)		.000	.000
Perceive Usefulness	Pearson Correlation	.852**	1	.767**
	Sig. (2-tailed)	.000		.000
Behaviour intension	Pearson Correlation	.725**	.767**	1
	Sig. (2-tailed)	.000	.000	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 8 coefficient Table The results of the analysis, including the standardized coefficients PEOU  $\beta = 0.261$  and PU  $\beta = 0.545$  and t-statistic for each independent variable

**Table 8** Coefficient table

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.544	.127		4.285	.000
Perceive Ease of Use	.290	.090	.261	3.208	.002
Perceive Usefulness	.494	.074	.545	6.710	.000

By using value the outcome equation

$$B.I = B_0 + B_1(PEOU) + B_2(PU)$$

$$B.I = .544 + 0.29(PEOU) + 0.494(PU)$$

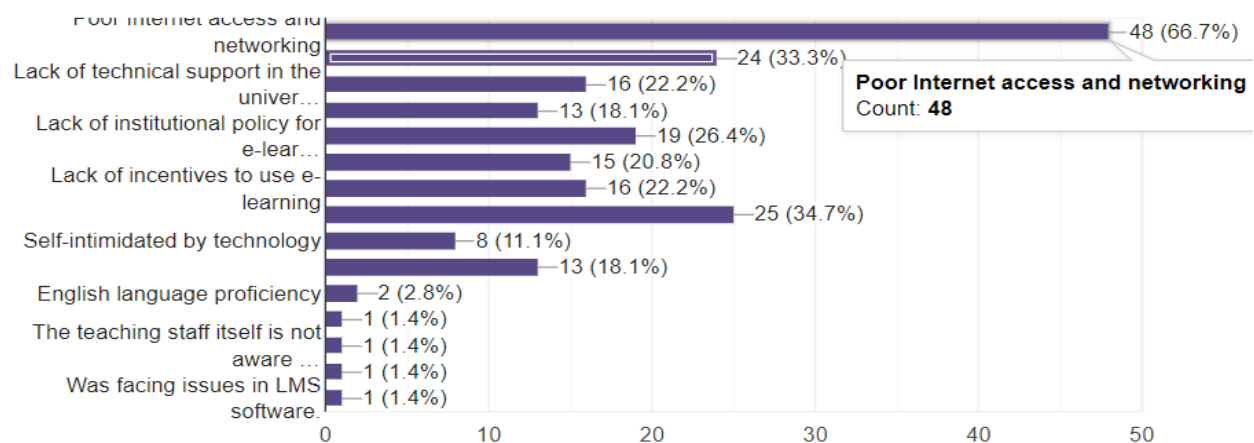
**OBJECT 3:** The results show that poor internet access (66.7%) is the major hindrance in the use of Learning Management System in Universities.

**Table 9: The problems faced by the users using LMS.**

13. Select which of the following problems do you face while using LMS software?



72 responses





## 6. Conclusion

The main purpose of the study was to assess the level of awareness and effective use of LMS by using TAM .The research examined the students' perception towards the use of LMS in Mehran UET and explored the relationship between PEOU and PU and Attitude towards use. The present study showed that that there is high acceptance level of LMS as descriptive statistics, have positive results and factors perceived Ease of use and perceived usefulness have the significant impact on attitude towards use of learning management system at Mehran university. The study results reveal that perceived ease is more important and has significant impact on perceived usefulness and attitude towards use of LMS. The students are encourage to use it frequently and they are capable of doing their work and they gain more benefits as system can be used effortlessly, easy to access information and clear interaction of the LMS, then through perceived useful can improve their performance, enhance their task to increase learning productivity making users enable to fully utilize and instructors easy to teach and system administrators are encouraged self-development features that support their needs in Mehran university. The study underlines the requirements of modern education system.

**Recommendations:** The findings of the study provide the use for the technology acceptance model use for predicting the acceptance of LMS among students. In the light of results, the study offers many recommendations. While adopting LMS in the present times, further studies on the expected and hidden impediments and challenges to be faced by university needed to be carried out to ensure effectiveness of LMS. To increase the efficiency, it is imperative to conduct more trainings and technical support on implementation and use of the LMS software in the university teaching and learning for students and faculty members.

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