Exploring the Utilization and Acceptance of Learning Management System for In-Service Training of Primary School Teachers

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Abstract

Learning Management Systems (LMS) is emerging internet technology that facilitating the instructions in blended, distance and face to face learning. The primary goal of current study was to explore the utilization and acceptance of LMS for in-service training of Primary School Teachers (PSTs) and contribution of ease to use and usefulness of LMS in enhancing attitude towards use of LMS at Quaid-e-Azam Academy for Educational Development (QAED) Punjab. The present study was quantitative research and cross sectional survey design was used. The data were collected using adapted questionnaire of Trayek and Hassan (2013), which covered three variables ease of use, usefulness and attitude toward use of LMS. The respondents of this study were 417 Primary School Teachers (PSTs) of district Okara and stratified random sampling technique was used for sampling. The data were collected through online Google survey form. After that, the data were analyzed using SPSS and different statistics techniques to meet the study objectives. The results indicated that teachers were somewhat agree and slightly satisfied with the usefulness and ease to use of LMS in their training. Further, it was investigated that usefulness and ease to use of LMS had significant and positive contribution in developing and enhancing attitude toward use of LMS in training. It was recommended that the management of QAED Punjab increase the purposefulness, usefulness, easy use and access of LMS among teachers in training.

Keywords: Acceptance, Ease of use, LMS, PSTs, QAED Punjab, Usefulness

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Introduction

Information and Communication Technology (ICT) has been used by various educational institutions for training of teachers in these days. The use of ICT in learning and training process has various benefits and advantages. The utilization ICT in training program increases the quality of training and performance of trainees and teachers. Further, it enhance the level of interest and motivation among teachers, and decrease the limitations of time and space in training and learning process (Al-Zaidiyeen, Mei, & Fook, 2008; Chang, 2008).

The acceptance and utilization of ICT in educational training introduced new concept in teaching likewise e-learning, virtual classroom, digital material, web based leaning and learning management system. This acceptance of ICT in training of teachers in twenty first century has change the role of learner and teacher. Before that the role of teacher was only verbal and oral transmission of knowledge at only one place at a time. But now through ICT it has changed as guider and facilitator beyond the limitations of time and space (Al-Khalifa, 2010).

Learning Management Systems (LMS) is latest technology for teaching and learning that facilitating the teaching and learning in distance, online, virtual, blended and face to face training and learning processes. This latest technology of LMS is providing very inclusive, comprehensive, faster and low cast training and teaching. Further, LMS provides virtual and online way of teaching and training which increase the usefulness, easiness and speedup the communication and connection among trainers and trainees for effective training. Furthermore, LMS provide variety of features and services for effective teaching and training. Therefore, training institutions are making a massive interest and investment in adopting their trainings through LMS (Dahlstrom, Brooks, & Bichsel, 2014; Jaschik & Lederman, 2014).

Training programs and activities of teachers were conducted face to face at QAED Punjab. But now and in future the training programs and activities of teachers at QAED Punjab are converting toward face to face training to LMS based training. This study would help to increase the awareness about the perceived usefulness and acceptance of LMS for training of PSTs at QAED Punjab and explore the role of utilization and easiness of LMS in nurturing attitude toward use of LMS. Furthermore, it would enhance the purposefulness, effectiveness and easy usability of LMS among teachers.

Research Objectives

This study was based on the following research objectives to:
1. Investigate the perceptions of PSTs regarding usefulness and ease of use of LMS for teacher training.
2. Investigate the acceptance and attitude of PSTs towards use of LMS for teacher training.
3. Investigate the contribution of ease of use and usefulness of LMS in enhancing attitude towards use of LMS in training of teachers.

Research Questions

Following research questions were constructed based on above research objectives:
1. What are the perceptions of PSTs regarding ease of use of LMS for teacher training?
2. What are the perceptions of PSTs regarding usefulness of LMS for teacher training?
3. What is the level of attitude of PSTs towards use of LMS for teacher training?
4. What are the perceptions of PSTs towards acceptance of LMS for teacher training?
5. To what extent do ease of use and usefulness of LMS contribute to the attitude towards using LMS in teacher training?

Literature Review

Ayub, Tarmizi, Jaafar, Ali and Luan (2010) described LMS as a web based instructional technology which facilitates teaching and learning process through effective planning, organizing and implementing of instructional process. LMS is software which designed to deal with teaching and learning activities through internet technology and deliver instructional material and resources to learners. LMS is also described as an application that utilized for communicating, interacting, sharing and managing learning and instructional system. Further LMS is especially utilized in instructional environment for speedy and large-scale instructional process.

Aslam, Sarwar and Kamran (2022) described that in general LMS offers to an instructor, resource person and moderator to organize and deliver instructional material, supervise learners' participation in online class and evaluate students' online academic achievement and

performance. Further, LMS is offering interactive and variety of features for the participants. Which included discussions, questioning, effective and speedy feedback, video and audio conferencing and forums for sharing variety of instructional material for learners.

Abdelraheem (2012) illustrated that the e-learning technology platform such as LMS is the most well-known and most used online learning platform in these days due to his effectiveness, acceptance and utility in education and training. LMS platforms provide helpful and valuable tools in planning and execution of teaching and learning material in distance and e-learning platforms.

Shroff, Deneen and Eugenia (2011) investigated that ease of use of latest educational technologies had positive and significant influence on usefulness and attitudes towards use of latest educational technologies which lead to contribute on the acceptance of educational technologies for education and training. Davis (1989) found that latest educational technologies with high level of ease of use are significantly contributed to developing positive attitudes towards acceptance of educational technologies for education.

Likewise, Liu, Liao, and Pratt (2009) and Teo (2009) found that ease of use had significant influence on attitude towards use of technology in training that have led to increase the acceptance of internet technology for instruction. Therefore, easy use of instructional technology was factor that had directly effect on attitude towards use of educational technology in training and instructional process. Although, in some situation when learners seeming that instructional technologies are very easy to use, unless they have necessary skills and knowledge for successful and useful use of instructional technologies.

Kiraz and Ozdemir (2006) identified that only ease of use cannot determine the use of instructional technology in education and training. Further, they were investigated usefulness of instructional technology as thought of learners regarding usefulness and helpfulness of instructional technology in their academic success and performance. Therefore, the usefulness had directly influence on attitude concerning to use of latest technology in training process. Moreover, Teo and Schalk (2009) also explored that ease of use and usefulness of LMS had positive and significant impact on developing attitude toward use of LMS among teachers.

Furthermore, Kiraz and Ozdemir (2006) found that the attitude toward use of virtual learning technologies explain as the positive or negative thoughts and views of individuals in acceptance and utilization of these technologies. Further, how these thoughts and views contribute in

developing particular behaviour towards use of online instructional technologies. The attitude toward use of LMS is the factor that can impact on the behavioural intention and further it is directly effect on the frequency of utilization of LMS for educational training process.

Lee, Cheung, and Chen (2005) and Pituch and Lee (2006) investigated that usefulness and ease to use of online instructional technologies were significant factors in attitude towards the utilization and adaptation of online instructional technologies in training and learning.

Theoretical Framework

Legris, Ingham and Collerette (2003) indicated that technology utilization theories have been applied in many studies to explore the variables that effecting on the acceptance of online instructional technologies. There are many theories that have been established to describe the participants' intent and attitudes in acceptance of instructional technologies in training and education. Technology Acceptance Model (TAM) developed by Davis in 1989 is a very prominent model that was used in various studies. In this study TAM used to explore the usefulness and acceptance of LMS among teachers in their training at QAED Punjab. Davis (1989) and Davis, Bagozzi, and Warshaw (1989) recommended the use of TAM more efficient than others technology acceptance models.

Venkatesh and Davis (2000) suggested the TAM covers forty to fifty percent explanation power more than others technology acceptance models, therefore they recommended it important and significant then other available technology acceptance models. TAM indicated that "perceived usefulness (PU)" and "perceived ease of use (PEU)" were significantly affect and contribute to developing attitude toward use of technology. These variables were explored in current study because these variables were very necessary in usefulness and acceptance of LMS for training of teachers.

Research Methodology

Research Design and Participants
The primary objective of current study was to explore the utilization and acceptance of LMS for in-service training of PSTs and contribution of ease to use and usefulness of LMS in enhancing attitude towards use of LMS for training of PSTs at QAED Punjab. This study was quantitative research and cross sectional survey design was used. The respondents of this study were 417 PSTs of district Okara and stratified random sampling technique

was used for sampling. There were total 4155 PSTs working in 92 Marakaz which are participating in QAED training of English as Subject for Teachers and Educators (EaSTE) Project through LMS. For sample of this study 10% teachers were selected from each Markaz. These teachers were participating in LMS/TMS based online in-service training program in Punjab.

Instrumentation and Procedure

Data were collected using a questionnaire consisted demographic factors of participants and statements measuring ease to use and usefulness of LMS and attitude towards utilization of LMS in teacher training. The questionnaire was adapted from Trayek and Hassan (2013) and covered three variables perceived usefulness (six statements) with .86 reliability and perceived ease to use of LMS (seven statements) with .82 reliability and attitude toward use of LMS (seven statements) with .83 reliability. All statements were presented on six-point Likert scale. The data were collected through online Google survey form from random selected PSTs from every Markaz.

Data Analysis and Results

The data were analyzed using SPSS 22 version and statistics techniques like mean, SD and regression analysis were applied to meet the study objectives.

Table 1

Demographic characteristics of participants

Variables	Category	Frequency	Percent
Gender	Male	219	52.5
	Female	198	47.5
Age (years)	21-30	68	16.3
	30-40	239	57.3
	40-50	68	16.3
	50-60	42	10.1
Experience (years)	0-5	9	2.2
	5-10	239	57.3
	10-20	92	22.1
	Above 20	77	18.5
Qualification	Matric/Inter	25	6.0
	BA/BSc	17	4.1
	MA/MSc/BS	341	81.8
	MPhil/PhD	34	8.2
Designation	PST	417	100.0

This table represents the demographic characteristics of participants. There were 417 teachers were included in the sample for this study.

Table 2

Mean analysis of usefulness of LMS

Statements	Mean	SD
U1	4.18	1.352
U2	4.31	1.267
U3	3.96	1.337
U4	3.87	1.226
U5	4.33	1.360
U6	4.43	1.250

U=Usefulness, Note: N=417

This table represents the perceived usefulness of LMS for teacher education at QAED Punjab. It indicates that the value of mean ($M = 4.43$) for U6 is recorded highest and ($M = 3.87$) for U4 recorded lowest. Further it revealed that the mean value of four statements U1, U2, U5 and U6 perceived usefulness of LMS was above the scale mark *Somewhat Agree* (4.0) and below *Agree* (5.0). It revealed that most teachers were somewhat agree and slightly satisfied with the usefulness of LMS for their training through LMS.

Table 3

Mean analysis of ease to use of LMS

Statements	Mean	SD
EoU1	4.54	1.269
EoU2	4.38	1.258
EoU3	4.28	1.324
EoU4	3.97	1.382
EoU5	4.43	1.256
EoU6	4.70	1.473
EoU7	3.78	1.492

EoU= Ease of Use

This table represents the perceived ease of use of LMS for teacher education at QAED Punjab. It indicates that the value of mean ($M = 4.70$) for EoU6 is recorded highest and ($M = 3.78$) for EoU7 recorded lowest.

Further it revealed that the mean value of five statements EoU1, EoU2, EoU3, EoU5 and EoU6 perceived ease of use of LMS was above the scale mark *Somewhat Agree* (4.0). It revealed that most teachers were satisfied and agree with the ease of use of LMS for their training through LMS.

Table 4

Mean analysis of attitude towards use of LMS

Statements	Mean	SD
ATU1	3.98	1.419
ATU2	4.28	1.312
ATU3	3.71	1.336
ATU4	3.40	1.382
ATU5	3.87	1.299
ATU6	3.58	1.536
ATU7	4.41	1.345

ATU= Attitude toward use

This table represents the attitude towards use of LMS for training at QAED Punjab. It indicates that the value of mean ($M = 4.41$) for ATU7 is recorded highest and ($M = 3.58$) for ATU6 recorded lowest. Further it revealed that the mean value of five statements ATU1, ATU3, ATU4, ATU5, and ATU6 perceived attitude towards use of LMS was below the scale mark *Somewhat Agree* (4.0). It revealed that most of the teachers were somewhat agree and having slightly satisfactory attitude towards use of LMS for their training through LMS.

Table 5

Mean analysis of usefulness, ease of use, attitude towards use and acceptance of LMS

Variables	Minimum	Maximum	Mean	SD
Usefulness	6	36	25.14	6.040
Ease of use	7	42	30.13	5.759
Attitude toward use	7	42	27.22	6.326
Acceptance of Technology (overall)	20	120	82.50	15.416

This table represents the mean analysis of *usefulness, ease of use, attitude towards use and acceptance of LMS*. It indicates that the value of mean score ($M = 30.13/7 = 4.30$) for the ease of use of LMS is recorded

highest. *Usefulness of LMS* has the medal mean score ($M = 25.14/6 = 4.19$) value. *Attitude towards use of LMS* has the lowest mean score ($M = 27.22/7 = 3.88$) value. The overall *acceptance of LMS has the mean score* ($M = 82.50/20 = 4.12$) value.

Further it revealed that the mean value of utilization, ease to use and acceptance of LMS was above the scale mark *Somewhat Agree* (4.0) and below *Agree* (5.0). It revealed that most teachers were somewhat agree and slightly satisfied with the usefulness and ease of use of LMS and having slightly satisfaction and agreement towards acceptance of LMS for their training through LMS.

Table 6

Model summary of regression analysis applied on usefulness, ease to use and attitude towards use of LMS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826(a)	.682	.680	4.96146

a Predictors: (Constant), Ease to use, Usefulness

This table represents the application of regression analysis on usefulness, ease to use and attitude towards utilization of LMS. The dependent variable was attitude towards use of LMS and the independent variables were utilization and ease to use of LMS. The result indicated that 68.2% variance in attitude towards use of LMS is explained by usefulness and ease of use of LMS.

Table 7

ANOVA summary table of regression analysis

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21856.381	2	10928.191	443.945	.000(a)
	Residual	10191.072	414	24.616		
	Total	32047.453	416			

a. Predictors: (Constant), Ease to use, Usefulness
b. Dependent Variable: Attitude towards use of LMS

The ANOVA table showed that there existed a significant difference in independent variables (usefulness and ease of use of LMS) and dependent variable (attitude towards use of LMS). It can be concluded that both

independent variables (usefulness and ease of use of LMS) contribute significantly and differently in developing and enhancing attitude towards use of LMS among teacher at QAED Punjab training.

Table 8

Standardized and unstandardized coefficients obtained from regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.634	1.307		2.015	.045
	Usefulness	.223	.036	.221	6.281	.000
	Ease to use	.678	.036	.671	19.078	.000

a. Dependent Variable: Attitude towards use of LMS

This table presents the unstandardized and standardized coefficients obtained through regression analysis. The results indicated that both independent variables (utilization and ease to use of LMS) contribute significantly in nurturing attitude towards use of LMS among teachers in training at QAED Punjab. The result showed that 22.1% variance in the dependent variable attitude towards use of LMS is explained by the independent variable usefulness of LMS and 67.1% variance in the dependent variable attitude towards use of LMS is explained by the independent variable ease to use of LMS. It can be concluded that maximum variance in the dependent variable attitude towards use of LMS is explained by ease to use and considerably less variance in the dependent variable attitude towards use of LMS is explained by usefulness of LMS. Although, both factors ease to use and usefulness of LMS had positive and significant effect and contribution in enhancing attitude towards use of LMS among teachers in training at QAED Punjab.

Discussion

The main objective of current study was to explore the utilization and acceptance of LMS for in-service training of PSTs and contribution of ease to use and usefulness of LMS in enhancing attitude towards use of LMS for training of PSTs at QAED Punjab.

The results indicated that most teachers were somewhat agree and slightly satisfied with the utilization and ease to use of LMS in their training through LMS. Further indicated that the half of the teachers were

somewhat agree and having slightly satisfactory attitude towards use of LMS for their training through LMS. These results of this study were supported by findings of Trayek and Hassan (2013) who found slightly low level of usefulness, ease of use and attitude towards use of LMS among respondents. But contrary to these results, Liu, Liao and Pratt (2009) investigated that the high level of usefulness and acceptance of e-learning technology among learners. Furthermore, Shroff, Deneen and Eugenia (2011) also investigated that the high level of usefulness and acceptance of e-learning technology among learners.

Moreover, this study indicated that usefulness and ease to use of LMS had significant and positive contribution in developing and enhancing attitude toward use of LMS in training. These results of this study were supported by numerous studies such as Trayek and Hassan (2013); Teo (2009); Kiraz and Ozdemir (2006) who investigated that usefulness and ease of use of LMS had significant and positive role in enhancing attitude toward use of LMS in training. Furthermore, Aslam, Sarwar and Kamran (2022); Chen and Huang (2010) and Liu et al, (2009) also investigated that usefulness and ease to use of LMS had significant and positive role in enhancing attitude toward use of LMS among learners. Likewise, Teo and Schalk (2009) and Teo (2009) also investigated that utilization and ease to use of LMS had important and positive influence on enhancing attitude toward use of LMS among learners.

As the results of this study indicated that the primary school teachers at Punjab School Education Department were somewhat agree and slightly satisfied with the usefulness and ease to use of LMS in their training through LMS at QAED Punjab. May be these somewhat agree and slightly satisfied perceptions regarding usefulness and ease to use of LMS because of the QAED Punjab introduced LMS first time at large scale for all PSTs. Further, mostly teachers may not be the perfect and proper user of LMS for their training and maybe they have faced some networking and technology related issues as well. Moreover, the LMS related QAED team may not fully aware about some field, systematic, technical and geographical issues.

Conclusion

It was concluded that the primary school teachers at Punjab School Education Department were somewhat agree and slightly satisfied with the usefulness and ease to use of LMS in their training through LMS at QAED Punjab. Further, it was concluded based on findings that usefulness and

ease to use of LMS had significant and positive contribution in developing and enhancing attitude toward use of LMS in training.

This slightly low and inefficiency in utilization of LMS during training among teachers may be due to not be the perfect and proper user of LMS for their training and maybe they have faced some networking and technology related issues as well. Furthermore, the LMS related QAED team may not be fully aware about some field, systematic, technical and geographical issues of teachers during their training through LMS. Lastly, I think there may be some issues related to capacity of working, operational and performance in QAED Application of LMS. Therefore, LMS designers and QAED administration need to think very seriously to improve the performance and capacity of working of QAED Application of LMS/TMS. Accordingly, LMS designers and QAED administration must take required steps to enhance the utilization and acceptance of LMS based training among PSTs.

Recommendations

Therefore, it has been recommended based on results of this study that the management of QAED Punjab increase the purposefulness, usefulness, easy use and access of LMS among teachers in training. Because usefulness and ease to use had significant effect on enhancing attitude towards utilization and acceptance of LMS among teachers. Further, the teachers also enhance their knowledge and skills by own self for use of LMS for readiness and effective training. Further, it has been recommended that a course of latest instructional technology knowledge and skill based should be included in teacher education programs at all levels. Moreover, QAED ensure digital literacy training sessions before training through LMS. For in-service teachers their some training sessions should be arranged with the involvement of Assistant Education Officers (AEOs) in Punjab. Furthermore, recommended that LMS designers and QAED administration need to improve the performance and capacity of working of QAED Application of LMS/TMS. Accordingly, LMS designers and QAED administration must take required and necessary steps to enhance the utilization and acceptance of LMS based training among PSTs.

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