

Attitudes of faculty members towards using learning management system "desire2learn" in learning

Hassan A. El-Sabagh^{1,2*} and Hanaa A. Yamani¹

¹E-learning Deanship, Umm Al-Qura University, Saudi Arabia.

²Faculty of Specific Education, Mansoura University, Egypt.

*Corresponding author. E-mail: dr.haelsabagh@gmail.com; haelsabagh@uqu.edu.sa.

Accepted 12th November, 2020

Abstract. This research aims to investigate faculty members' attitudes towards using learning management system "Desire2Learn" (D2L) at Umm Al-Qura University (UQU) in the kingdom of Saudi Arabia. In addition, it examines the impact of some personal and organizational variables on the faculty members' attitudes. The paper aims as well to identify the principal obstacles that limit their use of eLearning platform (Desire2Learn). To achieve these aims, a descriptive analysis methodology was used in this research, and the research sample consists of 160 participants that were selected randomly from various faculties at the university. The sample participants are asked to complete a 5-point Likert scale questionnaire to gather the required data. Validity and reliability of the questionnaire were guaranteed. The research results revealed positive attitudes of the faculty members at UQU towards eLearning platform (D2L), although it has not activated enough yet. Results also indicated there are differences of statistical significance level (0.05) in the attitudes of faculty members towards using LMS "D2L" due to the colleges classification, whether they are humanities, scientific or medical colleges. However, there are significant statistically differences in faculty members' attitudes with respect to using D2L which are found in favor of males than females and the scientific colleges whose faculty members are more desire to use the learning management system than those in the humanities colleges. The results revealed that the most important obstacles are the administrative and academic obstacles which is ranked first, followed by the physical obstacles and the personal obstacles exist at the final. The research findings help stakeholders and decision makers at higher education to take into account the implication of designing more e-courses to fulfill the needs of faculty member and activate the LMS usage to increase the efficiency of eLearning. The contribution of this research is clarified to direct faculty members' practice in various learning activities environment that lead to a successful implementation of eLearning platform and afford the stakeholders better understanding to promote positive attitudes and effective use toward LMS.

Keywords: E-learning, learning management system (LMS), desire2learn (D2L), faculty members, attitudes, Umm Al-Qura University.

INTRODUCTION

The rapid development in knowledge and technology has increased in recent years. The technology has played a significant role in education to overcome the obstacles of space, time and risk for both faculty members and students. Furthermore, support in augmenting the learning situations and enriching the educational process,

and its quality is needed. (El-Sabagh, 2011; Trayek, 2013; Tatli *et al.*, 2019; El-Sabagh and Hamed, 2020).

eLearning has emerged as one of the rapidest trends in today's education, it becomes the foundation of online learning environment. (Scott, 2015; Khlifi and El-Sabagh, 2017; El-Sabagh and Hamed, 2020). eLearning is now an

important approach for universities and educational institutions to increase the practical impact that support teaching and learning environment. eLearning allows students to be more flexibility to learn and interact with others and e-content. Moreover, e-Learning environments aid the educational systems resist any temporal barriers, and augment toward high meaningful learning, and supporting ease of use (Mtebe, 2015). The increasing number of students and the growth in information transfer have made it difficult to deliver instruction to individuals (Yamani, 2013). However, the success of this process is depended on instructors, student's acceptance and their usage. (Sumk *et al.*, 2011).

Consequently, numerous higher education institutions across the Saudi Arabia have been progressed at the lead regarding the use of e-Learning platforms and have testified that such systems have a positive effective on the learning and development of their students. Concerning faculty members usage, they should make use of the modern technology, to stay up to date and transfer what they have learned to all students. Although the previous benefits of eLearning platforms, there are many obstacles that face such usage at higher education institutions (Aldiab *et al.*, 2019).

According the literature review, it has been indicated that there are some reasons and obstacles that limit the spread of eLearning or activating it systematically or using it in effective way. According to the authors knowledge, there is no paper dealt with the attitudes issue of faculty members towards eLearning system (Desire2Learn) at Umm Al-Qura University or at Saudi universities, especially the whole other Saudi universities uses another LMS (Black Board). According to many articles and studies (Hussien, 2011; Mazroua *et al.*, 2013; Mtebe, 2015; Alomari, 2015; Alghamdi and Bayaga, 2016; Bervell and Umar, 2017; Alenezi, 2018; Alshorman and Bawaneh, 2018), the attitudes of faculty members to learning management systems usage were investigated and discussed via various perspectives. This paper differs from other studies as it represents a case study at Umm Al-Qura University, and the closed learning management system (D2L), to identify the perspectives of faculty members and provide necessary data to decision makers to work at the future to find solutions for these obstacles and overcome it.

Therefore, this research aims to investigate faculty members' attitudes towards using learning management system "Desire2Learn" (D2L) at Umm Al-Qura University (UQU) in the kingdom of Saudi Arabia. In addition to, it investigates the impact of some personal and organizational variables on their attitudes.

In order to achieve these research aims; the articulated research questions are:

Q1: What are faculty members' attitudes toward utilizing (D2L) LMS?

Q2: What are the factors that influence faculty members'

attitudes towards LMS "D2L" according to personal and organizational factors such as gender, college, academic rank, experience, training sessions?

Q3: What are the usage obstacles from view points of faculty members at UQU to use D2L in learning environment?

Subsequently, this research paper is structured as follows: The next section presents review of literature, followed by methods, and discussion of results are provided in subsequent sections, respectively; and the last section provides conclusion.

LITERATURE REVIEW

This section briefly presents the literature review related two subsections, first Desire2Learn "D2L" as a pedagogical tool, the other related to Attitudes towards online learning and Learning Management Systems (LMSs).

Desire2Learn "D2L" as a pedagogical tool

Technology use should be taken into consideration as a tool to afford a platform for accomplishing learning objectives (Reigeluth, 2012). According to e-learning systems development, the Learning management systems (LMSs) have become reliable resources in the learning environments (Jones *et al.*, 2005; Zakaria and Daud, 2013). The learning management system (LMS) refers to integrated system which is responsible in administrating the electronic educational process via web. It includes registration, assignments, learners tracking, e-exams, synchronous and Asynchronous tools (Al-mousa, 2005).

Learning management systems are used to plan, implement, and evaluate a specific learning process, and the learning management system usually provides the instructor with a way to create and present content, monitor student participation and evaluate their performance, and also they can provide students with the ability of using interactive features such as discussion of topics, video meetings and discussion forums (Al-Jarf, 2008). LMS provides "functionalities separated from e-content such as management tracking, personalized learning and the system interaction (Watson and Watson, 2007). LMS can efficiently enhance and facilitate learning process using "learning structure" to deliver the appropriate support for learning (Hussein, 2011; Song, 2014; Shin and Kang, 2015; Alenezi, 2018; Alshorman and Bawaneh, 2018). In addition, LMS continuous well beyond the classroom through emails, discussion groups, student-faculty questions and answers, the transfer one (Ozdamli, 2007). LMS helps faculty members to achieve learning outcomes through several instructional materials



Figure 1. Features of learning management system Desire2learn "D2L".

and activities that occur usually in the classroom. Accordingly, ICT integration aims to create a learning community among stakeholders and peers (Ziphorah, 2014). It is also a significant tool for developing course design and students' learning management to motivate them to learn (Ozdamli, 2007). Besides, learning through the LMS attains efficiency in teaching practices and student learning development (Boticario and Santos, 2007). LMS can support instruction and facilitate learning using an organized "learning structure" to deliver learning environment support effectively (Sang *et al.*, 2010; Cavus *et al.*, 2010; Zakaria and Daud, 2013) Subsequently, after a complete review and assessment of available learning management systems such as (Blackboard, Desire2Learn, and other various LMSs), LMS (Desire2Learn (D2L)) was further chosen by Umm Al-Qura University at Saudi Arabia at end of 2011.

As presented in Figure 1, D2L provides further tools and capabilities in addition to a satisfying user interface for both faculty members and students. "The fundamental functions among all these programs are essentially the same characteristics, delivering, testing Desire2Learn turned out to be the outstanding choice. It includes more tools, capabilities and contained a nicer user interface for both faculty members and students. One of the deciding factors was that it took about social-constructivist nature, and allows instructors to plan, design, and follow up learners (Chawdhry, 2011; Cavus *et al.*, 2006) explored the use of using learning management systems in web-based learning of programming languages, and the study results showed that using the LMS was effective, as it was dependent on collaborative learning tools. The study revealed also the accomplishment of the programming languages courses towards realizing learning outcomes through the LMS.

Attitudes towards online learning and Learning Management Systems (LMSs)

Faculty perceptions is a significant factor in the successful adoption of D2L. Attitude refers to perception of the person toward definite behavior (Munasinghe and Wijewardana, 2016). To promote the learning value of D2L, the learners have to track educational behaviors such as collaboration. Several studies of online learning have been conducted. Schultz (2001) found that learners enjoyed in online learning, however they complained due to interaction shortage. Similarly, Palmer and Holt (2009), revealed that students were responded with higher desire and satisfaction that reflected toward online learning environment positively. Angulo and Bruce (1999) stated that additional web-based instruction presented the assistance to their learning. Similarly, Koohang and Durante (2003) and Tatli *et al.* (2019) stated the more experience of learner in using technology, the more acquire concerning accepting it. Naqvi (2006) determined that students who were exposed to online learning environment had positive attitudes toward such environment than others. Regarding LMS "MOODLE", Ayse (2008) discovered that 66.7% of faculty members liked to use LMS environment and 53.3% found out their control of their own learning was more valuable. Additional study by Gower and Barr (2005) reported that the learners responses were positive in relation to the usefulness and user friendliness of LMS. Asiri (2012) revealed that faculty members attitudes were positive towards utilization of "JUSUR" LMS. The results also showed that the faculty members use toward LMS was adequate, and the faculty members showed also positive attitudes toward LMS. A study by Santamaria and Antolin (2012) proved that student-teachers LMS usage was very

positive toward LMS, however, one of the obstacles identified by the faculty members regarding the use of LMS is the lack of training to use it, still there have been limited discussions about how students' views and their reaction to e-learning. In the same frame, Browne (2014) assured that the learning management system "Moodle" proceeded a positive attitude if used to satisfy learners duties in the classroom. Faculty members and students are agreed of the LMS view as an useful tool that provided additional knowledge and shared easily within classroom situations.

Several studies dealt with the obstacles facing the faculty in other universities, such as studies of Tshabalala *et al.* (2014) and Oliveira *et al.* (2016), that explained the use of e-learning system, through the knowledge of their views, and to provide information and data for decision-makers to work in the future to find solutions for overcome the obstacles of using of LMS. From other perspective, study results of Alshorman and Bawaneh (2018) indicated that there are significant differences in terms of faculty members' attitudes due to gender variable in favour of males. However, in terms of faculty members experience and academic track, there is no significant difference. Further researches are recommended to focus on how to activate e-courses within learning management systems to engage students for effective use (Aldiab *et al.*, 2019).

In conclusion, the paper aims to identify and measure faculty members' attitudes towards learning Management System "Desire2Learn" (D2L) at Umm Al-Qura University (UQU) in the kingdom of Saudi Arabia. In addition to, investigate the impact of some personal and organizational variables on their attitudes; finally, the paper purposes to identify the principal obstacles that limit their use of Desire2Learn. To achieve these goals, a qualitative methodology used in this study, the random sample included 160 participants in this research were selected from eight faculties (colleges) asked to complete a 5-point likert scale questionnaire to collect the required data. The importance of current paper is derived from significant of eLearning, which is considered that its usage is not completely enough at Umm Al-Qura University.

Purpose and objectives

This research was conducted at Saudi Arabia, at Umm Al-Qura University. The second term of the academic year 2017/2018. The specific objectives of the present study include: (1) Investigate faculty members' attitudes towards using learning management system "Desire2Learn" (D2L) at Umm Al-Qura University (UQU), (2) investigates the impact of some personal and organizational variables on their attitudes, (3) identify the usage obstacles from viewpoints of faculty members at UQU to use D2L in learning process.

METHODOLOGY

The purpose of this study was to examine faculty members' attitude towards LMS D2L, to identify factors that influence Faculty members' attitudes to e-learning and to examine their experience in using D2L. The Study was conducted at Umm Al-Qura University, Saudi Arabia.

Research design

The researcher used the descriptive analytical method to identify the faculty members' attitudes towards LMS at Umm Al-Qura University; the method also was used in describing and analyzing the literature related to the research problem and creating the research instrument.

Research sample

The sample size of the study consisted of 160 Faculty members that have been requested to participate in the questionnaire -in Arabic Language- through D2L link and Faculty members' email. The Faculty members list was taken from one of the university core data bases so that all colleges and academic discipline involved in this survey. The study had a suitability sample surveying faculty member from the colleges of Arts and Humanities, Business, Science and Match, Engineering, Computer Science, Information Technology. The population in the study consisted of university faculty members at Umm Al-Qura University's in Makkah Campus; specifically, the concern with all faculties using the most learning management system provided by the university. The target sample for this study counts 215 faculty members. After pre-treatment by eliminating missed and uncompleted responses, the complete responses were 160. The sample obtained composed by 160 composed by 59% male and 41% female faculty members respecting the real university faculty members' distribution. All sample participants were chosen in the academic year 2017–2018 at the second term. The distribution of faculty members' sample "Demographics Characters" was shown in Table 1 and Figure 2.

As shown in Table 1 and Figure 2, the results showed that the sample consisted of 59% males and 41% females of the faculty members, and on the other hand, the Saudi faculty members were 43%, however the non-Saudi faculty members were 57% from the total sample.

Research instruments

D2L attitudes questionnaire

Questionnaires are a common method for collecting data in education research (McMillan and Schumacher, 2006).

Table 1. Demographic information "Nationality and Gender".

Age	Gender		Total	Percent (%)
	M	F		
Saudi	25	44	69	43
Non-Saudi	70	21	91	57
Total	95	65	160	100

**Figure 2.** Demographic information "gender distribution".

The scale had been organized electronically and distributed to faculty members through a link via e-mail registered on the UQU system. The questionnaire was conducted using Google forms. The questionnaire instrument used in this study was presented (Appendix 1). The completed responses were (160) faculty members.

A preface for the questionnaire to explain the objective was presented, the assurance of confidentiality and privacy of respondents, and the voluntary nature of respondent participation. The scale of 'attitude towards LMS' was developed based on the literature review research and other past scales directed to measure faculty members' attitudes towards LMSs (Mishra and Panda, 2007; Gasaymeh, 2009). It consisted of nine positive statements to determine participants' experiences towards LMS. Participants were requested to use a rating scale (from "1" 'strongly disagree' to "5" 'strongly agree') to specify the degree to which they perceived their attitude towards LMS, the following scale dimensions have been identified.

The scale instrument consisted of 29 closed-ended questions, classified in four main dimension and (9) items as multiple-choice statements related to experiment of faculty member in teaching via using LMS "D2L".

Validity and reliability were guaranteed. The author used statistical treatments such as percentages, means, frequencies, and analysis of variance ANOVA. Structure of attitudes questionnaire of faculty members at Umm Al-Qura University towards using D2L "Learning Management System" was established. The first five questions focused on faculty member demographics; they included gender, age, education, academic ranking, nationality and college.

Based on the faculty member experience in using of Desire2Learn, the first dimension "9 items" focused on

their preferences of online management systems. The second dimension "6 items" focused on faculty members expectations toward LMS platforms in education, the third dimension focused on personal vision and ease of use, the fourth category focused on the need of training and technical support, the fifth dimension focused on faculty members experiences in teaching via e-courses, the sixth dimension focused on the potential benefits and awareness, however the last dimension focused on the challenges and concerns that face faculty members for not using LMS platform. The questionnaire outcomes were analysed using SPSS.

Reliability and validity of the questionnaire:

Reliability

The reliability analysis of a questionnaire aims to identify its capabilities to produce the similar results based on conducting it several times, however, the validity states that the measurement of what the questionnaire is supposed to measure (Cooper and Schindler, 2008). Cooper and Schindler (2008) pointed that "reliability is a necessary contributor to validity but is not a sufficient condition for validity". Thus, it is well accepted that it is essential to assess the reliability and validity of the research instrument to increase the credibility and integrity of the study conclusion. For reliability analysis, Cronbach's alpha, which is one of the most frequently operated methods for evaluating and assessing research internal consistency, is calculated by SPSS. Internal consistency was calculated through the calculation of correlation of each item with each dimension to fit correlation among other dimensions and the calculated value was normally recognized as high reliability value (Usoro and Omekara, 2015).

The results of Table 2 showed that the reliability for whole attitudes questionnaire has enough internal consistency, as the Cronbach's Alpha correlation coefficient was 0.83, thus, it indicated that the questionnaire was reliable and appropriate for preceding such research.

As shown in Table 3, internal consistency was calculated through the calculation of correlation of each dimension within the whole scale to which it belongs and correlation among other dimensions, the results were explained. A strong and good relationship applied to all

Table 2. Alpha Cronbach coefficient.

N of Items	Alpha Cronbach
28	0.826

Table 3. The internal consistency of the scale dimensions

Spearman's rho		1st Dimension (Expectations and beneficiary)	2nd Dimension (Training and technical support)	3rd Dimension (Faculty experiences in e- courses design)	4th Dimension (Obstacles and challenges)	Total
1st Dimension	Correlation coefficient	1	.264**	.244**	-.002	.325**
	Sig. (2-tailed)	.001	.001	.002	.981	.000
2nd Dimension	Correlation coefficient	.264**	1	.475**	-.217**	.299**
	Sig. (2-tailed)	.001	.001	.000	.006	.000
3rd Dimension	Correlation coefficient	.244**	.475**	1	.128	.616**
	Sig. (2-tailed)	.002	.000	.001	.109	.000
4th Dimension	Correlation coefficient	-.002	-.217**	.128	1	.781**
	Sig. (2-tailed)	.981	.006	.109		.000
Total	Correlation coefficient	.325**	.299**	.616**	.781**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000

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

dimensions between each item and the overall sum of the four dimensions.

Validity

Validity was calculated to the scale through a group of experts in measurement, evaluation, teaching methods, curricula, and educational psychology that consisted from nine faculty members. The questionnaire was presented in its initial form to explain their opinion about: suitability of the questionnaire phrases for its purpose, and the linguistic accuracy of the questionnaire items, the suitability of the questionnaire design method to achieve its goal. Experts and specialists added some items and agreed on the items of the questionnaire, with the amendment of the linguistic wording of some of the items of the questionnaire.

Their requested modifications have been changed. The final form of the questionnaire was consisted of 29 items divided into 4 Dimensions and in addition 9 items as MCQ questions. In this research, content validity and

predictive validity were analysed to confirm the validity of the research instrument (Nunnally and Bernstein, 1994). Construct validity of instrument was analysed through factor analysis.

RESULTS

Attitudes of faculty members

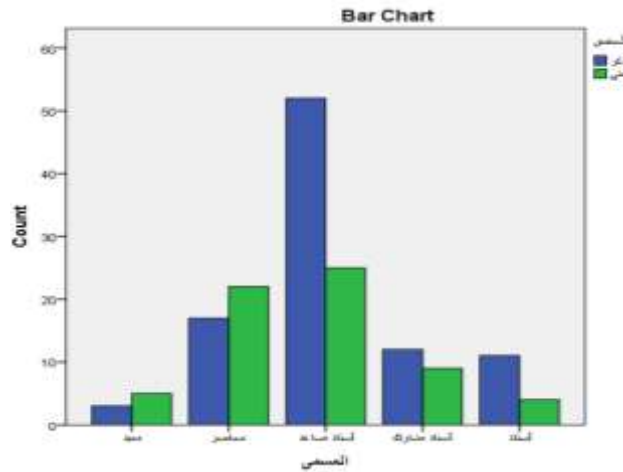
To answer the current research question: What are the factors that influence faculty members' attitudes towards D2L LMS according to personal and organismal factors such as gender, college, academic rank, experience, training sessions?. The following tables revealed the statically data related to research question. The demographic and background information were further detailed in relation to gender.

The total academic population in the current study was N=160, 95 female and 65 male faculty members.

Table 4 and Figure 3 depict the academic rank of the participant into academics based on their gender and

Table 4. Distribution of faculty research group according to "Academic Rank and Gender".

Academic rank	Gender		Total	Percent (%)
	M	F		
Demonstrator	3	5	8	5
Lecturer	17	22	39	24
Assistant Prof.	52	25	77	48
Associate Prof.	12	9	21	13
Professor	11	4	15	9
Total	95	65	160	100

**Figure 3.** The academic rank classification according to gender of research sample.**Table 5.** Distribution of faculty research group according to "Colleges classifications and Gender".

Academic disciplines	Gender		Total	Percent (%)
	M	F		
Medical Colleges	13	14	27	17
Scientific Colleges	19	10	29	18
Humanities Colleges	48	37	85	53
University Colleges	8	3	11	7
Institutes and Deanships	7	1	8	5
Total	95	65	160	100

academic rank. As shown, around half of sample are assistant professors, the percentage is 48%, from percent of assistant professors, 68% were males while 32% were females; on the other hand, the quarter of faculty members were lecturers, the percentage was 24%, from percent of lecturers, 44% were males while 56% were females.

As shown from Table 5 and Figure 4, the results related to the college classifications showed that around half of the sample were from Humanities and educational

colleges ($n = 85$, 53%). 56 out of 160 academic participants from Scientific and Medical Colleges with combination between 18 and 17% respectively. The rest of the sample were from University Colleges and Institutes and Deanships with a percentage of 7 and 5, respectively.

The demographic and background information were further investigated in relation to gender variable. As revealed in Table 6, the results related the sample age, showed that the most of sample (79%) were between 30-

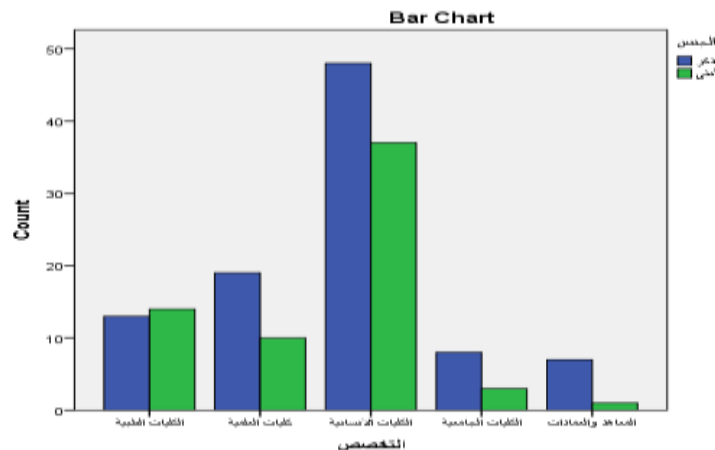


Figure 4. The college classification according to gender of research sample.

Table 6. Distribution of faculty research group according to "Age and gender".

Age	Gender		Total	Percent (%)
	M	F		
20-29	3	8	11	7
30-39	33	32	65	41
40-49	42	19	61	38
50-59	16	3	19	12
above 59	1	3	4	2
Total	95	65	160	100

Table 7. Differences in attitudes according to the college classification.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3954.796	4	988.699	4.643	.001
Within Groups	33004.697	155	212.934		
Total	36959.494	159			

49 years.

From the Table 7, it looked that there were differences of statistical significance level (0.05) in the attitudes of faculty members towards using LMS "D2L" due to the college classification, whether they are humanities, scientific or medical colleges in favour of scientific colleges.

The authors used ANOVA test, since the p-value is less than a significant level 0.05 (p-value=0.009), the study determined that there is a statistically significant difference in the mean of (3rd Dimension) between the males and females (Table 8).

As shown in Table 9, there are significant statistically differences in faculty members' attitudes with respect to using D2L were found in favour of males than females.

From Table 10, it looked that there were differences of statistical significance level (0.05) in the attitudes of

faculty members towards using LMS "D2L" due to the faculty's academic ranking classification, whether they are professors, associate professors, assistant professors, and lecturer in favour of assistant professors.

As shown in Table 11, there are not significant differences in faculty members' attitudes with respect to using D2L were found regarding nationality either Saudi or not Saudi.

Since the p-value is less than a significant level 0.05 (p-value = 0.006), The authors can conclude that there is a statistically significant difference in the mean length of (fourth Dimension) related to obstacles and challenges that face faculty members and lead to not activating LMS "D2L" between the specialty (Table 12).

From Table 13, since the p-value is less than a significant level 0.05 (p-value = 0.009), the authors stated that there is a statistically significant difference in the

Table 8. Differences between attitudes of faculty members toward LMS "D2L" according to "Gender".

		Sum of Squares	df	Mean Square	F	Sig.
2nd Dimension (Expectations & Beneficiary)	Between Groups	.057	1	.057	.004	.950
	Within Groups	2307.918	157	14.700		
	Total	2307.975	158			
1st Dimension (Training & Technical Support)	Between Groups	13.374	1	13.374	.949	.332
	Within Groups	2226.970	158	14.095		
	Total	2240.344	159			
3rd Dimension (Faculty Experiences in e- courses Design)	Between Groups	163.045	1	163.045	6.920	.009
	Within Groups	3675.493	156	23.561		
	Total	3838.538	157			
4th Dimension (Obstacles & Challenges)	Between Groups	475.948	1	475.948	3.531	.062
	Within Groups	21164.479	157	134.806		
	Total	21640.428	158			

Table 9. Descriptive differences between male and females of the sample.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1240.942	1	1240.942	5.489	.020
Within Groups	35718.552	160	226.067		
Total	36959.494	160			

Table 10. Descriptive differences with Respect to Academic Rankings.

	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	4080.159	4	1020.040	4.809	.001
Within groups	32879.335	160	212.125		
Total	36959.494	160			

Table 11. Descriptive differences between Saudi respondents and non-Saudi respondents.

	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	57.781	1	57.781	.247	.620
Within groups	36901.713	158	233.555		
Total	36959.494	159			

mean length of (third dimension) between the different colleges and departments. As well, the p-value of (first dimension) was closed to significant level (p-value=0.06). It indicated if there are more data, maybe have a significant result. The faculty members' responses indicated that scientific faculties whose faculty members were more desire to use the eLearning platform than those in the faculties.

To answer the third research question: What are the usage obstacles from viewpoints of faculty members at UQU to use D2L in learning process? the following tables revealed the statically data related to research question.

Usage obstacles from viewpoints of faculty members

To answer the current research question: What are the usage obstacles from viewpoints of faculty members at UQU to use D2L in learning environment? Table 14 revealed the statically data related to research question

Regardless of the positive attitudes of faculty members, it is observed that there is a shortage of the LMS "D2L" activation satisfactorily; as results showed in Table 14 the arithmetic means and standards deviations and the relative weight for each obstacle item. The results showed the academic and administrative items came at

Table 12. Differences between attitudes of faculty members toward LMS "D2L" according to "Academic Ranking of faculty members".

		Sum of Squares	df	Mean Square	F	Sig.
2nd Dimension (Expectations and Beneficiary)	Between Groups	16.016	4	4.004	.269	.898
	Within Groups	2291.959	154	14.883		
	Total	2307.975	158			
1st Dimension (Training and Technical Support)	Between Groups	51.353	4	12.838	.909	.460
	Within Groups	2188.991	155	14.123		
	Total	2240.344	159			
3rdDimension (Faculty Experiences in e-courses Design)	Between Groups	134.323	4	33.581	1.387	.241
	Within Groups	3704.215	153	24.211		
	Total	3838.538	157			
4thDimension (Obstacles & Challenges)	Between Groups	1906.615	4	476.654	3.720	.006
	Within Groups	19733.812	154	128.142		
	Total	21640.428	158			

Table 13. Differences between attitudes of faculty members toward LMS "D2L" according to "colleges classifications" (humanities-medical-scientific-religious).

		Sum of Squares	df	Mean Square	F	Sig.
2nd Dimension (Expectations & Beneficiary)	Between Groups	23.835	4	5.959	.402	.807
	Within Groups	2284.140	154	14.832		
	Total	2307.975	158			
1st Dimension	Between Groups	124.911	4	31.228	2.288	.062
	Within Groups	2115.432	155	13.648		
	Total	2240.344	159			
3rdDimension (Faculty Experiences in e-courses Design)	Between Groups	236.125	4	59.031	2.507	.044
	Within Groups	3602.413	153	23.545		
	Total	3838.538	157			
4th Dimension (Obstacles & Challenges)	Between Groups	919.882	4	229.970	1.709	.151
	Within Groups	20720.546	154	134.549		
	Total	21640.428	158			

the first concerning usage such as "Lack of e-learning coordinators at colleges", "The absence of obligatory from colleges or scientific departments", "Lack of training programs and introductory workshops available to activate the e-Learning platform", and followed by physical obstacles, such as "The few numbers of computers available in the e-learning laboratories", however the personal obstacles were existed at the third order, the final order was "Lack of persuading and encouragement of the faculty members regarding the e-learning platform to activate it".

DISCUSSION

This paper investigated the faculty members' attitudes and perceptions from different colleges and different department towards Learning Management System LMS "D2L". The researchers have analysed the answers to the qualitative questions in the questionnaire to increase an understanding of how current faculty members view the use of LMS in learning environments.

Based upon the research results and the analysed data discussed in the prior section, these results can be

Table 14. Arith Means and Standard deviations of the faculty members views in terms of the obstacles towards using D2L at Umm Al-Qura University.

Obstacle/constraint item	Arith Mean	St. Dev.	Relative weight
Academic "administrative" obstacles: Lack of e-learning coordinators at colleges.	3.78	1.3	58.13
Academic "administrative" obstacles: The absence of obligatory from colleges or scientific departments.	3.69	1.2	55.26
Physical Obstacle: The few numbers of computers available in the e-learning laboratories.	3.43	1.1	53.72
Academic "administrative" obstacle: There is no encouragement from the scientific department to activate the e-learning platform "D2L".	3.31	1.1	52.34
Academic "administrative" obstacle: Lack of training programs and introductory workshops available to activate the e-Learning platform.	3.25	1.0	49.64
Personal obstacle Persuasion of the faculty members' deficiency regarding the E-learning platform to activate it.	3.14	0.98	48.49
Academic "administrative" obstacles Lack of training programs in the field of designing and developing courses electronically.	2.98	0.91	45.83
Personal Obstacle: There is no motivation for a faculty member to activate eLearning platform.	2.86	0.89	44.32

discussed in two approaches: (1) Determining the LMS attitudes by gender, nationality, academic ranking level, and colleges classifications; (2) investigate the main obstacles that face faculty members towards using D2L at Umm Al-Qura University. In conclusion, faculty members at Umm Al-Qura University have positive attitudes towards using D2L the E-learning Management System generally and in the questionnaire Dimensions, respectively.

However, the findings vary between college classification types, whether humanities, scientific and health college, where faculty members work. The results indicated also that there are significant differences at the level (0.05) in the attitudes towards using D2L due to gender variable of faculty members between males and females of the research sample, in favour of male participants. Thus, gender variable reflects a significant correlation towards using LMS.

The results indicated that there are statistically significant differences at the level (0.05) in the attitudes towards using LMS "D2L" due to the college classification in their attitudes in general and in the third dimension related to faculty experiences in e-courses design in

particular. The results indicated also that there are significant differences at the level (0.05) in the attitudes towards using D2L due to the academic ranking of faculty members in their attitudes in general and in the fourth dimension related to obstacles and challenges that face faculty members particularly.

Despite the positive attitudes of faculty members, it is observed deficiency of LMS activation acceptably; that is due to the next reasons: first, the academic and administrative items such as "Lack of e-learning coordinators at colleges". Second, "the absence of obligatory from colleges or scientific departments". Third, "lack of training programs and introductory workshops available to activate the e-Learning platform". Fourth: the physical obstacles, such as: "the few numbers of computers available in the e-learning laboratories", however the personal obstacles came at the third order and the final such as "awareness deficient in terms of significance of the learning management system "D2L" from some scientific departments (Aldiab *et al.*, 2019) and their conviction to activate it".

These results are consistent with other research including: (Hussien, 2011; Mazroua *et al.*, 2013; Pollock

and Wayne, 2009; Alghamdi and Bayaga, 2016; Alenezi, 2018; Alshorman and Bawaneh, 2018); that have assured the effectiveness of LMS usage in developing competences and skills of the faculty members as well as inspiring the e-learning environment.

The finding stated that there was a significant correlation between gender and academic rank is inconsistent with Alharbi and Drew's (2014) as they stated that academic rank did not correlate with other variables. This could be interpreted considering the different variables in the two studies, as Alharbi and Drew's study conducted in Shaqra University, which unlike Umm Al-Qura University is considered a new university. This could greatly affect the academic attitude towards new technologies.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based upon the data and the results from the previous statistical analyses. A set of recommendations can be proposed as follow:

- Necessity of adopting strategic planning for eLearning platforms in higher education institutions;
- Providing the necessary training programs that fulfil both faculty members and students;
- Distribution the culture of eLearning platforms among faculty members and students' communities to be aware of its importance;
- Conducting more research to scope the most effective solutions to overcome the obstacles that prevent the introduction of eLearning system within higher education institutions.

This research, nevertheless, has useful implications for stakeholders at the higher education institutes, in the meantime LMS usage and attitudes among faculties was high to exploit from eLearning platforms. In addition, increasing LMS usage and faculty satisfaction within LMS, faculty members are recommended to get training regarding not only LMS procedures but also concerning designing the e-courses within LMS and its content.

The contribution of this research is clarified as well to investigate LMS usage in many learning activities that lead to successful LMS implementation by faculty members and afford the stakeholders better understanding to promote positive attitudes and effective use toward LMS.

REFERENCES

- Aldiab A, Chowdhury H, Kootsookos A, Alam F, Allhibi H (2019).** Utilization of Learning Management Systems (LMSs) in higher education system: A case review for Saudi Arabia. *Energy Procedia*. 160:731-737. 10.1016/j.egypro.2019.02.186.
- Alenezi (2018).** Barriers to Participation in Learning Management Systems in Saudi Arabian Universities, *Hindawi Education Research*.
- Alghamdi S, Bayaga A (2016).** Use and attitude towards Learning Management Systems (LMS) in Saudi Arabian universities, *Eurasia J. Math. Sci. Technol. Educ.* 12(9):2309-2330. doi: 10.12973/eurasia.2016.1281a.
- Alharbi S, Drew S (2014).** Using the Technology Acceptance Model in Understanding Academics' Behavioural Intention to Use Learning Management System. *Int. J. Adv. Comp. Sci. App. (IJACSA)*, 5(1):143-155.
- Al-Jarf R (2008).** E-Learning and Distance Education in Arab Universities. *Proceeding of The Fifth Conference of the Horizons of Scientific Research and Technological Development in the Arab World*, 25-30 October. Faas, Morocco.
- Alomari M (2015).** Reasons for the Reluctance of Faculty Members at Yarmouk University in the Use of E-learning System on the University's Web Site from Their Point of View, *Jordan. J. Educ. Sci.* 11(4):417-426.
- Alshorman B, Bawaneh A (2018).** Attitudes of Faculty Members and Students towards the Use of the Learning Management System in Teaching and Learning. *The Turkish Online J. Educ. Tech. (TOJET)*, 17(3):1-15
- Asiri M (2012).** Factors Influencing Utilisation of Learning Management System among University Faculty members in Saudi Arabia, *PhD Thesis*, University Putra, Malaysia.
- Bervell B, Umar I (2017).** A Decade of LMS Acceptance and Adoption Research in Sub-Sahara African Higher Education: A Systematic Review of Models, Methodologies, Milestones and Main Challenges, *EURASIA J. Math. Sci. Technol. Educ.* ISSN: 1305-8223.
- Boticario JG, Santos OC (2007).** An open IMS-based User Modelling Approach for Developing Adaptive Learning Management Systems.
- Browne J (2014).** An Analysis of the Attitudes of the Lockerbie College Community towards Moodle, *Master of Science Applied Psychology Student*, The University of the West Indies, Cave Hill campus, pp. 2-25.
- Cavus N, Uzunboylu H, Ibrahim D (2006).** The Effectiveness of Using Learning Management Systems and Collaborative Tools in Web-Based Teaching of Programming Languages, paper presented at the 3rd international symposium and education on electrical, electronic, and computer engineering (*ISEECE 2006*), 23-25 November, Lefkoşa, Cyprus.
- Cavus N, Uzunboylu H, Ibrahim D (2010).** Assessing the Success Rate of Students Using a Learning Management System Together with a Collaborative Tool in Web-Based Teaching of Programming Languages. *J. Educ. Comput. Res.* 36(3): 301-321. doi: 10.2190/T728-G676-4N18-6871.
- Chawdhry A (2011).** Comparatively Assessing the Use of Blackboard versus Desire2learn: Student Perceptions of the Online Tools.
- Cooper DR, Schindler P (2008).** *Business Research Methods*. 12th ed., Retrieved from The University of Phoenix eBook Collection database, p. 292.
- El-Sabagh HA (2011).** Enhance Science Learning with Virtual Labs.: The impact of a web-based virtual lab on the development of students' conceptual understanding and science process skills, *Technische Universität Dresden*. <https://nbn-resolving.org/urn:nbn:de:bsz:14-qucosa-64897>.
- El-Sabagh HA, Hamed E (2020).** The Relationship between Learning-Styles and Learning Motivation of Students at Umm Al-Qura University, *Egypt. Assoc. Educ. I Comput. J.* 8(1):1-30. June 2020, ISSN-Online: 2682-2601. doi:10.21608/EAEC.2020.25868.1015. Available online: https://eaec.journals.ekb.eg/article_86057_46ba151438ec49464b66e6fd1aa123ed.pdf.
- Hussein H (2011).** Attitudes of Saudi Universities Faculty Members towards Using Learning Management System (JUSUR), *TOJET: The Turk. Online J. Educ. Technol.* April 10(2):1-11.
- Jones J, Morales C, Knezek G (2005).** 3-Dimensional Online Learning Environments: Examining Attitudes toward Information Technology between Students in Internet-based 3-Dimensional and Face-to-Face Classroom Instruction. *Educational Media International*. 42. 219-236. 10.1080/09523980500161254.
- Khlifi Y, El-Sabagh HA (2017).** A Novel Authentication Scheme for E-assessments Based on Student Behaviour over E-learning Platform. *Int. J. Emerg. Technol. Learn. (IJET)*, 12(4):62-89. <https://online-journals.org/index.php/i-jet/article/view/6478/4372>.

- Koohang, D (2003).** Learners' Perceptions toward the Web-based Distance Learning Activities/Assignments Portion of an Undergraduate Hybrid Instructional Model. *J. Inform. Technol. Educ.* 2(10):105-113. Available at: <https://doi.org/10.28945/316>.
- Mazroua Y, Makhoulouf A, Abdul RT (2013).** Attitudes of faculty members at King Khalid University towards the Use of e-Learning Management System Blackboard, *J. Educ. Assoc. Soc. Stud. Egypt*, 52:84-114.
- McMillan J, Schumacher S (2006).** *Research in Education: Evidence-Based Inquiry*, (6th ed.). Boston, MA: Pearson.
- Mtebe J (2015).** Learning Management System success: Increasing Learning Management System usage in higher education in sub-Saharan Africa, *Int. J. Educ. Dev. using Inform. Commun. Technol. (IJEDICT)*, 11(2):51-64.
- Munasinghe PG, Wijewardana WP (2016).** Attitudes of Students When Using Learning Management Systems, 13th Annual World Congress, *The first Sebelas Maret Conference on Entrepreneurship, Innovation and Community Development (SMARTCEIC)*, Ins. Available at SSRN: <https://ssrn.com/abstract=2915283>.
- Nunnally J, Bernstein I (1994).** *The Assessment of Reliability*. Psychomet. Theor. 3:248-292.
- Oliveira P, Cunha C, Nakayama M (2016).** Learning Management Systems (LMS) and E-Learning Management: An Integrative Review and Research Agenda, *J. Inform. Syst. Technol. Manage.* 13(2):157-180, Available at: DOI: 10.4301/S1807-17752016000200001.
- Ozdamli F (2007).** An Evaluation of Open Source Learning Management Systems According to Administration Tools and Curriculum Design. *International Educational Technology (IETC) Conference*, (7th Nicosia, Turkish Republic of Northern Cyprus, May 3-5, 2007).
- Palmer S, Holt D (2009).** Examining Student Satisfaction with Wholly Online Learning. *J. Comput. Assist. Learn.* DOI: 10.1111/j.1365-2729.2008.00294.x.
- Reigeluth C (2012).** Instructional Theory and Technology for the New Paradigm of Education. *RED, Revista de Educación a Distancia*. 32(30). Sep. 2019, <http://www.um.es/ead/red/32>
- Sang G, Valcke M, Braak J, Tondeur J (2010).** Student teachers' thinking processes and ICT integration: Predictors of prospective teaching behaviours with educational technology, *Computer and Education*, 54: 103-112.
- Scott C (2015).** The Futures of learning 1: why must learning content and methods change in the 21st century?, *Education, research and foresight: working papers*, Sep., Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000234807>.
- Shin W, Kang M (2015).** The Use of a Mobile Learning Management System at an Online University and Its Effect on Learning Satisfaction and Achievement, *Int. Rev. Res. Open Distribut. Learn.* 16(3):110-130.
- Sumk B, Hericko M, Pusnik M, Polancic G (2011).** Factors Affecting Acceptance and Use of MOODLE: An Empirical Study Based on TAM, *Informatica*, 35:91-100.
- Tatli Z, Akbulut H, Altınışık D (2019).** Changing Attitudes towards Educational Technology Usage in Classroom: Web 2.0 Tools. *Malay. Online J. Educ. Technol.* 7:1-19. Available at: DOI: 10.17220/mojet.2019.02.001.
- Trayek F (2013).** Attitude towards the Use of Learning Management System among University Students: A Case Study, *Turk. Online J. Distance Educ. TOJDE*, July 2013, 14(3): ISSN 1302-6488.
- Tshabalala M, Ndeya-Ndereya C, Van der Merwe T (2014).** Implementing Blended Learning at a Developing University: Obstacles in the Way. *Electron. J. e-Learn.* 12(1):101-110.
- Usoro A, Omekara C (2015).** Reliability in the estimates and compliance to invertibility condition of stationary and nonstationary time series models, *Journal of Statistical and Econometric Methods*, Scienpress Ltd, 4(3):1-5.
- Watson WR, Watson SL (2007).** An argument for clarity: what Are Learning Management Systems, What are They Not, and What Should They Become? *TechTrends*, Springer Verlag, 51(2):28-34.
- Yamani H (2013).** E-learning and Digital Games: The Potential Contribution to Mathematics Education in Saudi Arabia. *PhD Thesis*. La Trobe University.
- Zakaria E, Daud MY (2013).** The Role of Technology: MOODLE as A Teaching Tool IN. *Asian J. Manage. Sci. Educ.* 2:46-52.
- Ziphorah R (2014).** Information and Communication Technology Integration: Where to Start, Infrastructure or capacity building? *Procedia – Soc. Behav. Sci.* 116(2014):3649-3658.