



Journal homepage:

<https://jdlol.journals.ekb.eg/>

Online ISSN: 2314-8837 Print ISSN: 2314-8829



Gender Differences and Learner Satisfaction: An evaluation of E-Learning systems at Umm A-Qura University

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ABSTRACT

ARTICLE INFO

Received

Accepted

This research aims to define the students' satisfaction level at Umm Al-Qura University with the e-learning systems (Blackboard & D2L), in addition, it investigates whether there are differences in the evaluation of Umm Al-Qura University students for e-learning systems (Blackboard & D2L) due to the gender variable (Male/ Female).

To achieve these goals, a descriptive analysis methodology used in this research, the sample consisted of (513) students, (174) male, and (339) female at Umm Al-Qura University in the the academic year 2019/2020. The sample were asked to complete a 5-point likert scale questionnaire to collect the required data. Validity and reliability of the questionnaire were guaranteed.

The results revealed that students are highly satisfied with the both of e-learning systems (Blackboard & D2L). There is no statistically significant difference between the average scores of males and females in the evaluation of the e-learning system (Blackboard). There is a statistically significant difference between the

Keywords

Suggested Date	mean scores of males and females in the D2L system evaluation in favor of females
Owners	E-Learning, Learning Management System (LMS), Satisfaction, Gender differences, Evaluation, Higher education, Umm Al-Qura University
Material Dimensions Condition	

1.Introduction:

In light of the increasing interest of educational institutions, especially higher education institutions, in the quality of the educational and administrative process, as well as in light of the tremendous and accelerating development in computers and Internet services, many concepts such as distance education, e-learning and virtual universities have emerged, and have made a qualitative leap in the work of educational institutions, so that the focus is on providing students with the skills that will prepare them for the current changes.

Within the framework of the universities' endeavors to achieve the orderly and effective application of technologies as an important aspect of their activities, the experts came up with a system based on the idea of distributing subject matter through a platform from instructors to students to support and enhance the teaching and learning process at universities to become more competitive. This system is known as a Learning Management System (LMS). (Ghoniem, Aljahdali, & Fahmy, 2010).

A learning management system (LMS) is a software application or Web-based technology used to design, implement, and evaluate a certain learning process, where it provides the instructors with a tools to create and distribute content, monitor student participation, and evaluate student performance, and also provide students with the ability to use effective features such as threaded discussions, discussion

forums , and video conferencing, with comprehensive distribution from instructors to students, and this contributes to the creation of what is called a web-based virtual learning environment (Zahir, 2009; Ghoniem, Aljahdali, & Fahmy, 2010; Sofianti, Prawira, & Indrayadi, 2015).

There are many advantages for e-learning systems such as: Learners can obtain the best available instruction from any place at any time, learners define the speed and schedule, training adapts due to learning styles, teachers can teach from any place, course content can be more attractive, e-learning provides training around the world without travel, including valuable educational resources, on the other side, the disadvantage of e-learning is represented in more teacher efforts, and online training courses require 20-40% more time and effort than traditional courses, converting current classrooms into online courses has proven more difficult than many designers have anticipated. E-learning is often used as a form of distance learning and distance learning is "impersonal" due to the lack of a face to-face communication fear of technology(Chang,2016; Basak, Wotto, & Paul, 2018; Tahrishi, 2018).

Therefore, there is a need to prepare and implement periodic evaluation for e-learning systems and analyze their effectiveness, where evaluation of e-learning -systems is a vital necessary to ensure successful delivery, effective use, and positive effect on learners. (Maillon & Nyawo,2008; Al-Fraihat, Joy, Masa'deh, & Sinclair, 2020).

Bhuasiri, Xaymoungkhoun, Zo, JeungRho, and Andrew(2012) mentioned that there is a need to subject e-learning systems and programs to specific evaluation procedures in light of cultural and social developments in order to diagnose the strengths and weaknesses of these systems, in a comprehensive and objective manner that is balanced with the cultural and social variables facing societies.

Knowing the opinions and level of students' satisfaction is one of the most important indicators that are referred to in the process of evaluating e- learning and distance education systems (Palloff & Pratt,2007; Kishabale, 2019).

The previous studies identified the importance of individual aspects in influencing the acceptance of e-learning, where the user requests more personalized and adaptive system interaction (Aroyo & Dicheva, 2004; Singh & Hardaker, 2014). And gender is one of the individual variables that influences on the e- learning acceptance(Ramírez-Correa, Arenas-Gaitán, &Rondán-Cataluña, 2015)

Males and females differ in their levels of trust, and information processing, but also in their attitudes and motives of using and accepting e learning environments (Sanchez-Franco, Villarejo-Ramos, & Rondan-Cataluña, 2006)

In addition, some studies indicated that females communicated more, have a greater social presence, and are more satisfied with online courses than males (Johnson, 2011; Gonzalez-Gomez, Guardiola, Rodríguez, & Alonso, 2012). And some studies indicate that males students used the LMS in e-learning environment more than females (Lim, Nam, Eom, Jang, Kim, and Kim, 2020)

Ramírez-Correa, Arenas-Gaitán, &Rondán-Cataluña(2015) mentioned that we live in the information and communication era, and we need to know if there are still differences between males and females with regard to the acceptance and use of e-learning.

Consequently, the main objective of this research is to define the Students' satisfaction level with the e-learning systems at Umm Al-Qura University, as well as defining the gender differences on students' evaluation for e-learning systems at Umm Al-Qura University.

The answers to the following questions were searched:

1. What is the satisfaction level of Umm Al-Qura University students with the e-learning system (Blackboard)?
2. What is the satisfaction level of Umm Al-Qura University students with the e-learning system(D2L)?
3. Does the evaluation of Umm Al-Qura University students for e-learning system (Blackboard) differ by gender (male / female)?
4. Does the evaluation of Umm Al-Qura University students for e-learning system(D2L) differ by gender (male / female)?

2. Literature Reviews and Conceptual Framework

E-learning is responsible for developing the skills required for the era of a knowledge-based economy, and in order to give this type of education its place as one of the successful educational systems in Arab societies, e-learning must be characterized by basic requirements. One of the most important requirements is a periodical evaluation system in order to diagnose the strengths and weaknesses indicators in light of the diversity of needs and interests of the student community(males and females), as well as in light of the challenges and societal changes.

Considering the above, the current research will discuss the following topics:

2.1. Gender and E-Learning:

The gender factor is considered the main element for understanding inequalities and identities in modern society (Johnson, 2011)

Studies and the literature indicate that gender is a key component to understanding differences in perceptions of benefits and usability of technology (Venkatesh & Bala, 2008)

Consequently, many literatures and studies aimed to discover the relationship between gender differences and e-learning in many areas, especially in the field of e-learning usage and its evaluation. Cuadrado-García, Ruiz-Molina, and Montoro-Pons(2010)indicated that there were statistically significant differences in the evaluation and use of e-learning activities according to the gender variable (male / female) at two European universities, and also found that there are few differences between male and female students in their satisfaction with e-learning activities.

The study of Hung, Chou, Chen, and Own (2010) aimed to identify the differences between the readiness of Taiwan university students to learn within a web-based learning environment in the light of the variable of gender. The results revealed that the gender had no statistically significant differences along the dimensions of online learning readiness. The study of Lu, and Chiou(2010) concluded that gender significantly influenced the university students' satisfaction with the e-learning system in Taiwan.

The study of Awad and Halas (2015) aimed to identify the trend towards distance education technology and its relationship to some variables among graduate students in Palestinian universities. Among the results of the study, there are no statistically significant differences in the responses of graduate students in Palestinian universities towards distance learning, depending on the gender variable.

Al-Sharif's study (2016) aimed to identify the attitudes of Shaqra University students towards e-learning, and concluded that there are statistically significant differences at the level of 5% in students' responses to e-learning depending on the gender variable (male, female) in favor of females.

The study of Alharthi, Spichkova, Hamilton, and Alsanoosy(2018)investigated the gender and cultural differences in needs and usage of system features. the focus is on eLearning systems used in Australia and Saudi Arabia. The results revealed that the cultural and gender diversity may have a significant impact on user needs and preferences.

Djalev, and Bogdanov's study (2019) aimed to examine the pedagogical usability of interactive e-learning materials for foreign language practice at New Bulgarian University, Results indicated that all independent variables(age/ gender) and their interactions have a significant effects on the evaluations of the pedagogical usability. In addition, female tend to assign higher values than male.

The study of Lim, Nam, Eom, Jang, Kim, and Kim(2020) aimed to evaluate the structural differences between college students in their LMS use patterns according gender variable(male and female) through a multifactor model at a university in Korea. The results indicated that male students used the LMS more than females and that neither gender preferred communicating and cooperate with each other.

Jun and Freeman(2010) mentioned that the evidence about the effect of gender on the acceptance of information technology is not conclusive, where Kim, and Forsythe (2008) confirmed that there are not statistically significant differences between male and female in the process of adopting of e-learning. And in contrast, there is previous evidence of gender-related effects in the context of the adoption of e-learning (Ong& Lai,2006)

Finally, the issue of the digital gender divide still exists and needs to be addressed with comprehensive recommendations for development, including the search for more participatory usage strategies towards learning management systems. (Lim, Nam, Eom, Jang, Kim, & Kim, 2020).

2.2. Satisfaction and E-Learning:

Satisfaction or attitude is the state of pleasure or disappointment formed by the comparison of the perceived effect of a product or service with an expected value (Peng, Yin, Rong, Yang, and Cong, 2020).

The educational literatures agreed that attitude has three basic components, as mentioned by Al-Helo (2006), Saraya (2007), Abuallam (2007), Puspitasari(2014) as follows:

1) The cognitive component: It is the cognitive aspects, which include the individual's point of view related to the approval of the subject, and this component includes the objective information and facts available to the individual about the subject, and it consists of a group of experiences that form the cognitive framework for these stimuli.

2) The emotional component: This component refers to the emotional and affective aspects related to the topic of the trend. After the individual has a set of experiences and knowledge about a specific topic, he appears to have some feelings and feelings that reflect his positive or negative direction towards the topic.

3) The (behavioral) component: It is a set of expressions and clear responses provided by the individual in a situation after his awareness, knowledge and emotion in this situation, the individual provides the response that is commensurate with this emotion, this experience and this perception.

The role of e-learning is evident in raising students' satisfaction about the teaching and learning process, due to the use of many instructional aids which may not be available to many learners,

providing the learner with a suitable place in which he feels comfortable without interference from anyone, enabling learners to express their ideas and search for facts and information in more and more meaningful ways than what is used in traditional classrooms, making the learner in a state of excitement and constant activity during learning, and it increases the social relationship between learners and teachers. (Ke & Kwak, 2013; Kuo, Walker, Belland, & Schroder, 2013; Dziuban, et al.,2015; Bahati, & Mukama, 2019)

In e-learning, learner satisfaction is an aggregate of feelings or emotional responses to distinct factors while interacting with an e-learning system (Goh & Chen, 2008)

The factors that affecting the learner's satisfaction in e-learning can be illustrated as: Learner(Computing attitude, Computer anxiety, Internet self-efficacy, Age, Gender, initial knowledge of e-Learning); Instructor(Response timeliness, Attitude toward e-Learning, instructor's experience); E-Learning Course(Course flexibility, assessment methods and interaction, Course quality); Technology(Technology quality, Internet quality); Design(Perceived usefulness, Perceived ease of use); and Environment(Diversity in assessment, Perceived interaction). (Hong, 2002; Sun, Tsai, Finger, Chen, &Yeh, 2008; Tarigan, 2011; Al-Qahtani, Al-Qahtani, and Al-Misehal, 2014; Peng, Yin, Rong, Yang, and Cong, 2020)

There are many advantages to explore learner satisfaction with e learning systems. Rashid(2010) mentioned that The attitude or satisfaction is a fundamental concept in the educational and psychological sciences and it has gained great importance in it, and the educational research area around it is increasing day by day, as many studies see that improving the satisfaction now must be seen as a goal and a value. Li, Marsh, & Rienties(2016) also mentioned that A key concern for most institutions and instructors is whether students are satisfied with their learning experience.

Analyzing learner satisfaction questionnaires allows teachers and administrators to identify unseen problems as well as identify key information about learning processes. (Zerihun, Beishuizen, & Os, 2012; Rienties, 2014)

2.3. E-Learning Evaluation

Evaluation is one of the most important factors for the continued success and effectiveness of the e-learning system (Abdulhamid, 2005)

The reasons for adopting the evaluation approach for the e-learning system including: E-learning systems evaluation can be used as evidence of whether the technology is profitable for the organization or not, and this helps convince senior executives of the organization about the importance of e-learning, the evaluation process encourages learners to work harder, where students do their best under monitoring and tracking their results, the evaluation process helps to reveal whether the individuals, departments and facilitators responsible for implementing and using the e learning systems are properly fulfilling their roles and whether the systems are delivering the promised results, the evaluation process may reflect the quality and effectiveness of educational materials and identify areas in need of improvement, and an evaluation of current e-learning systems will help senior decision makers to make well-informed strategic decisions (Reeves & Hedberg, 2003; Voigt & Swatman, 2004; Horton, 2006; Mallinson & Nyawo, 2008)

In this regard, there are many studies aimed at developing frameworks and models for evaluating e-learning systems, where Lanzilotti, Ardito and Costabile (2006) mentioned that the Quality of e-learning systems is one of the important topics that the researchers were investigating in the last years, and proposed a new framework, called TICS (Technology, Interaction, Content, Services), which

focuses on the most important aspects to be considered when designing or evaluating an e-learning system.

Ozkan and Koseler(2009). proposed a conceptual e-learning assessment model, HELAM (Hexagonal e-Learning Assessment Model), suggesting a multi-dimensional approach for LMS evaluation via six dimensions: (1) system quality, (2) service quality, (3) content quality, (4) learner perspective, (5) instructor attitudes, and (6) supportive issues.

Al-Shagran, Sahraoui(2017).proposed multi detentions approach to evaluate e learning systems which contain the following dimensions(Stakeholders- Organization- Technology- Environment- Pedagogic and curricular- Quality of eLearning Systems- Effective Blended E-Learning). Hadullo, Oboko, and Omwenga(2017). presented a model for evaluating LMS through reviewing the existing e-learning frameworks and models that aimed to evaluate the quality of e- learning systems, the model consist of 3 branches (key factors ~ Constructs ~ Measurements), and as example: Key factors: Course development ~ Constructs: Course information, course structure, course layout ~ Measurements: Course objectives, list of textbooks, list of lecturers, current and accurate, content, easy to use interface. The main key factors that exist in the model were: Course development, Learner Support, Assessment, User characteristics, Institutional factors, and Overall performance.

Pour, Hosseinzadeh, Azar, and Taheri (2017).mentioned that e-learning systems' evaluation has become critical. Although many researchers have studied e-learning's performance evaluation, there is little research on e-learning assessment, which uses pedagogical principles and organizational issues along with information systems (ISs) assessment measures. The framework of evaluation contains the following items: Financial perspective, E-learner perspective, Internal process perspective, Learning and growth perspective

Al-Fraihat, Joy, Masa'deh, & Sinclair (2020) study proposed a model which mainly adopts the structures and indicators from other models and theories to fit the context of e-learning. The proposed model is one which includes seven independent dimensions: technical system quality, information quality, service quality, educational system quality, support system quality, learner quality, and instructor quality. In addition, there are four dependent dimensions: perceived satisfaction, perceived usefulness, system use, and benefits. Each dimension contains several items which indicate the level of quality.

The research has benefited from previous frameworks and models for evaluating e-learning systems in preparing a questionnaire for evaluation of the two e-learning systems (Blackboard - D2L) from the students' point of view in light of the gender variable at Umm Al-Qura University.

3. Research Methodology

3.1. The Research Design

The descriptive and analytical approach, which aims to study scientific phenomena and problems by describing them in a realistic manner and analyzing them in a scientific way, was used to answer research questions related to the evaluation of the two e-learning systems (Blackboard - D2L) from the students' point of view in light of the gender variable.

3.2. The Research Community

The research community consisted of all students at Umm Al-Qura University in the Kingdom of Saudi Arabia in the academic year 2019/2020.

3.3. The Research Sample

The research sample consisted of (513) students at Umm Al-Qura University, and Table 1 shows the distribution of the sample members according to the research variables:

Table 1. Research Sample Description

Variable	Variable Categories	Frequency	Percent	Total	Percent
E-learning system (Blackboard)	Males	123	37.3 %	330	64.3 %
	Females	207	62.7 %		
E-learning system (D2L)	Males	51	27.9 %	183	35.7 %
	Females	132	72.1 %		

3.4. The Research Tool

The research tool is represented in a questionnaire to identify two parts, the first: students' satisfaction with the e-learning system, and the second: students' evaluation of the e-learning system. The questionnaire consisted, in its initial form, of (9 items) to identify the level of students' satisfaction with the e-learning system, in addition to (8 items) to identify the students' evaluation of the e-learning system. The five-point gradient of Likert relied on answering the questionnaire's axes, so that the grades are assigned to them upon correction (1/2/3/4/5).

To verify the validity and reliability of the questionnaire, the following steps were followed:

A. The Questionnaire Validity:

The questionnaire validity was verified in two ways:

A.1). The validity of the Arbitrators:

The items of the questionnaire were presented, in its initial form, to specialized arbitrators. This is to judge the appropriateness of the questionnaire axes, the items clarity, its linguistic formulation appropriateness, and the items relevance to the axis that it measures. In

light of the arbitrators’ directives, the wording of some of the questionnaire items was modified, and the arbitrators’ agreement on the questionnaire’s items was 100%. Therefore, no item was deleted from the questionnaire items.

A.2). Internal consistency:

The correlation coefficient between the degree of each item of the questionnaire and the total score of the axis to which it belongs, was calculated on a sample of (95) male and female students at Umm Al-Qura University, and the results were as shown in the following Table 2:

Table 2. The values of the correlation coefficients of the degree of each item with the total degree of the axis to which it belongs in the questionnaire

Blackboard System (n=50)				D2L System (n=43)			
Satisfaction with the system		System Evaluation		Satisfaction with the system		System Evaluation	
Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient
1	0.77**	1	0.78**	1	0.62**	1	0.68**
2	0.74**	2	0.79**	2	0.63**	2	0.76**
3	0.61**	3	0.63**	3	0.66**	3	0.75**
4	0.84**	4	0.86**	4	0.57**	4	0.53**
5	0.76**	5	0.75**	5	0.71**	5	0.72**
6	0.83**	6	0.84**	6	0.73**	6	0.75**
7	0.75**	7	0.79**	7	0.75**	7	0.80**
8	0.83**	8	0.78**	8	0.73**	8	0.68**
9	0.56**			9	0.47**		

It is evident from Table (2) that the correlation coefficients are statistically significant at the level of (0.01), and the values of the

correlation coefficients ranged from 0.47 to 0.86, and the internal consistency did not result in deleting any items.

B. Questionnaire Reliability:

The reliability was calculated by Cronbach's Alpha method, whereby the Cronbach alpha coefficient was calculated for each axis of the questionnaire separately before deleting the item score and after deleting it, on a sample of (95) male and female students at Umm Al-Qura University, and the results were as shown in the Table 3.

Table 3. The Questionnaire Axis Reliability Coefficients Values

E-learning System	Axis	N of items	Cronbach's Alpha	Cronbach's Alpha if Item Deleted
Blackboard (n=50)	Satisfaction with the system	9	0.90	Ranged from 0.87 to 0.90
	System Evaluation	8	0.91	Ranged from 0.88 to 0.91
D2L (n=43)	Satisfaction with the system	9	0.83	Ranged from 0.79 to 0.83
	System Evaluation	8	0.86	Ranged from 0.82 to 0.86

It is evident from the Table 3 that the values of the reliability coefficients by the Cronbach Alpha method ranged from 0.83 to 0.91, which are acceptable reliability values, and that the Cronbach Alpha values obtained when deleting the items reduce the axes reliability coefficient.

It is evident from the foregoing that the research tool has validity and reliability. It consists in its final form of (9) items to identify satisfaction with the system, and (8) items to identify the evaluation of the system.

3.5. The Research Procedures

The research procedures included the following:

1. Reviewing studies and literature related to the research topic.
2. Preparing the search tool and calculating its validity and reliability
3. Questionnaire Application after calculating its validity and reliability on the research sample
4. Statistical processing of data obtained from the application of questionnaire
5. Discussing the research results.
6. Providing recommendations and suggestions

4. Results and Discussion

4.1. Results of the first question:

The first question states: What is the satisfaction level of Umm Al-Qura University students with the e-learning system (Blackboard)?

To answer this question, the frequency, percentage, average, and standard deviation of the responses of the sample members were calculated on each item of the axis of satisfaction with the Blackboard e-learning system. Depending on that each item has a score that extends between (1 to 5), the range of grades will be (4) and the length of the category (0.8). So, if the average value is (1 to less than 1.8) the level is very low, (1.8 to less than 2.6) the level is low, (2.6 to less than 3.4) the level is medium, (3.4 to less than 4.2) the level is high, (4.2 to 5) the level is very high, and the results are as shown in Table 4.

Table 4. Frequencies, percentages, averages, and standard deviations of the items of Student Satisfaction with the Blackboard System

Item No.	Items of student satisfaction with the Blackboard system	Responses					Mean	Std. Deviation	Satisfaction Level	
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
1	Blackboard's system interface is easy to use	F	36	43	71	138	42	3.32	1.18	Medium
		%	10.9	13.0	21.5	41.8	12.7			
2	Blackboard's system interface is easy to understand and learn	F	29	54	54	141	52	3.40	1.19	High
		%	8.8	16.4	16.4	42.7	15.8			

3	Blackboard's system facilitates discussion with other students	F	39	71	91	88	41	3.06	1.21	Medium
		%	11.8	21.5	27.6	26.7	12.4			
4	Blackboard's system facilitates discussion with the teacher	F	31	61	92	100	46	3.21	1.17	Medium
		%	9.4	18.5	27.9	30.3	13.9			
5	Blackboard's system makes it easy to access shared data and files	F	24	36	66	142	62	3.55	1.13	High
		%	7.3	10.9	20.0	43.0	18.8			
6	Blackboard's system facilitates the exchange of scientific experiences and concepts with others	F	31	50	98	109	42	3.25	1.14	Medium
		%	9.4	15.2	29.7	33.0	12.7			
7	Blackboard system content is constantly updated	F	22	36	76	145	51	3.51	1.08	High
		%	6.7	10.9	23.0	43.9	15.5			
8	Sufficient educational content is provided in the Blackboard system	F	15	54	86	125	50	3.43	1.07	High
		%	4.5	16.4	26.1	37.9	15.2			
9	The educational content included in the Blackboard system is useful	F	20	33	91	140	46	3.48	1.05	High
		%	6.1	10.0	27.6	42.4	13.9			
The total satisfaction with the Blackboard system								3.68	1.14	High

It is evident from Table 4: The existence of a high level of satisfaction among university students towards the Blackboard system for items (2, 5, 7, 8, 9), and a medium level of satisfaction for items (1, 3, 4, 6). The total satisfaction mean with the Blackboard system is (3.68), indicating a high level of satisfaction with the system.

It is evident from the previous presentation that a high percentage of students are generally satisfied with the Blackboard system. Aspects of the system that make students feel satisfied can be arranged according to average values as follows: The system facilitates access to shared data and files. The system content is constantly updated. The educational content in the system is useful. Sufficient educational content is provided in the system. The system interface is characterized by being easy to understand and learn. The interface of the system is easy to use. The system facilitates the exchange of experiences and scientific concepts with others. The system facilitates discussion with the teacher. The system facilitates discussion with other students.

4.2. Results of the second question:

The second question states: What is the satisfaction level of Umm Al-Qura University students with the e-learning system(D2L)?

In order to answer this question, the frequency, percentage, average and standard deviation of the sample members responses were calculated on each item of the axis of satisfaction with the D2L system. Depending on that each item has a score that extends between (1 to 5), the range of grades is (4) and the length of the category is (0.8). So, if the average value is (1 to less than 1.8) the level is very low, (1.8 to less than 2.6) the level is low, (2.6 to less than 3.4) the level is medium, (3.4 to less than 4.2) the level is high, (4.2 to 5) the level is very high, and the results are as shown in table 5.

Table5.Frequencies, percentages, averages and standard deviations of the student satisfaction axis items of the D2L system

Item No	Items of student satisfaction with the D2L e-learning system	Responses					Mean	Std. Deviation	Satisfaction level	
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
1	The D2L system interface is easy to use	F	9	8	23	74	69	4.02	1.06	High
		%	4.9	4.4	12.6	40.4	37.7			
2	The D2L system interface is easy to understand and learn	F	8	15	19	68	73	4.00	1.11	High
		%	4.4	8.2	10.4	37.2	39.9			
3	The D2L system facilitates discussion with other students	F	15	42	52	51	23	3.14	1.15	Medium
		%	8.2	23.0	28.4	27.9	12.6			

4	The D2L system facilitates discussion with the teacher	F	15	41	49	54	24	3.17	1.16	Medium
		%	8.2	22.4	26.8	29.5	13.1			
5	The D2L system makes it easy to access shared data and files	F	8	9	28	72	66	3.98	1.05	High
		%	4.4	4.9	15.3	39.3	36.1			
6	The D2L system facilitates the exchange of scientific experiences and concepts with others	F	18	37	61	41	26	3.11	1.17	Medium
		%	9.8	20.2	33.3	22.4	14.2			
7	The D2L content is constantly updated	F	7	21	38	67	50	3.72	1.10	High
		%	3.8	11.5	20.8	36.6	27.3			
8	Sufficient educational content is provided in the D2L system	F	8	14	44	63	54	3.77	1.09	High
		%	4.4	7.7	24.0	34.4	29.5			
9	The educational content in the D2L system is useful	F	10	22	38	77	36	3.58	1.10	High
		%	5.5	12.0	20.8	42.1	19.7			
The total satisfaction with the D2L system								3.98	1.11	High

Table 5 shows: the existence of a high level of satisfaction among university students towards the D2L system for items (1, 2, 5, 7, 8, 9), and medium level of satisfaction for items (3, 4, 6). The total satisfaction mean with the D2L system is (3.98), indicating a high level of satisfaction with the system as a whole.

It is evident from the previous presentation that a high percentage of students are generally satisfied with the D2L system. The aspects of the system that make students feel satisfied can be arranged according to the average values as follows: the system interface is characterized by being easy to use; the system interface is characterized by being easy to understand and learn; the system facilitates access to the shared data and files; sufficient educational content is provided in the system; the content of the system is constantly updated; the educational content in the system is useful; the system facilitates discussion with the teacher; the system facilitates discussion with other students; and the system facilitates the exchange of scientific experiences and concepts with others.

4.3. The results of the third question:

The third question states: Does the evaluation of Umm Al-Qura University students for e-learning system (Blackboard) differ by gender (male / female)?

To answer this question, the Chi-Square Test was used to identify the significance of the differences between the frequency of the responses of the sample members according to the gender variable (male / female) with regard to the evaluation items of the e-learning system (Blackboard), and the results were as shown in table 6.

Table 6. The Chi-Square Test results for student evaluation items for the Blackboard system according to the variable of gender (male / female)

Item No.	Items of students' evaluation for Blackboard	Gender	Responses					Total	Chi-Square	Sig.	
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
1	The Blackboard system interface is easy to use	Males	Count	12	19	27	47	18	123	2.31	0.68
			Gender within %	9.8%	15.4%	22.0%	38.2%	14.6%	100.0%		
			Item within %	33.3%	44.2%	38.0%	34.1%	42.9%	37.3%		
			of Total %	3.6%	5.8%	8.2%	14.2%	5.5%	37.3%		
		Females	Count	24	24	44	91	24	207		
			Gender within %	11.6%	11.6%	21.3%	44.0%	11.6%	100.0%		
			Item within %	66.7%	55.8%	62.0%	65.9%	57.1%	62.7%		
			of %Total	7.3%	7.3%	13.3%	27.6%	7.3%	62.7%		
2	The Blackboard system interface is stable in controlling and navigating other components and interfaces	Males	Count	19	23	26	39	16	123	7.55	0.11
			Gender within %	15.4%	18.7%	21.1%	31.7%	13.0%	100.0%		
			Item within %	48.7%	41.1%	41.9%	28.9%	42.1%	37.3%		
			of Total %	5.8%	7.0%	7.9%	11.8%	4.8%	37.3%		
		Females	Count	20	33	36	96	22	207		
			Gender within %	9.7%	15.9%	17.4%	46.4%	10.6%	100.0%		
			Item within %	51.3%	58.9%	58.1%	71.1%	57.9%	62.7%		
			of Total %	7.3%	7.3%	13.3%	27.6%	7.3%	62.7%		

Item No.	Items of students' evaluation for Blackboard	Gender	Responses					Total	Chi-Square	Sig.	
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
			of %Total	6.1%	10.0%	10.9%	29.1%	6.7%	62.7%		
3	The Blackboard system facilitates discussion with other students	Males	Count	16	26	38	30	13	123	1.96	0.74
			Gender within %	13.0%	21.1%	30.9%	24.4%	10.6%	100.0%		
			Item within %	41.0%	36.6%	41.8%	34.1%	31.7%	37.3%		
			of Total %	4.8%	7.9%	11.5%	9.1%	3.9%	37.3%		
		Females	Count	23	45	53	58	28	207		
			Gender within %	11.1%	21.7%	25.6%	28.0%	13.5%	100.0%		
			Item within %	59.0%	63.4%	58.2%	65.9%	68.3%	62.7%		
			of Total %	7.0%	13.6%	16.1%	17.6%	8.5%	62.7%		
4	The Blackboard system facilitates discussion with the teacher	Males	Count	12	23	33	38	17	123	1.34	0.99
			Gender within %	9.8%	18.7%	26.8%	30.9%	13.8%	100.0%		
			Item within %	38.7%	37.7%	35.9%	38.0%	37.0%	37.3%		
			of Total %	3.6%	7.0%	10.0%	11.5%	5.2%	37.3%		
		Female	Count	19	38	59	62	29	207		
			Gender within %	9.2%	18.4%	28.5%	30.0%	14.0%	100.0%		
			Item within %	61.3%	62.3%	64.1%	62.0%	63.0%	62.7%		
			of Total %	5.8%	11.5%	17.9%	18.8%	8.8%	62.7%		

Item No.	Items of students' evaluation for Blackboard	Gender	Responses					Total	Chi-Square	Sig.	
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
5	The Blackboard system makes it easy to access shared data and files	Males	Count	11	14	22	53	23	1.23	0.87	
			Gender within %	8.9%	11.4%	17.9%	43.1%	18.7%			100.0%
			Item within %	45.8%	38.9%	33.3%	37.3%	37.1%			37.3%
			of Total %	3.3%	4.2%	6.7%	16.1%	7.0%			37.3%
		Females	Count	13	22	44	89	39			207
			Gender within %	6.3%	10.6%	21.3%	43.0%	18.8%			100.0%
			Item within %	54.2%	61.1%	66.7%	62.7%	62.9%			62.7%
			of Total %	3.9%	6.7%	13.3%	27.0%	11.8%			62.7%
6	The Blackboard system facilitates the exchange of scientific experiences and concepts with others	Males	Count	16	20	31	42	14	4.57	0.33	
			Gender within %	13.0%	16.3%	25.2%	34.1%	11.4%			100.0%
			Item within %	51.6%	40.0%	31.6%	38.5%	33.3%			37.3%
			of Total %	4.8%	6.1%	9.4%	12.7%	4.2%			37.3%
		Females	Count	15	30	67	67	28			207
			Gender within %	7.2%	14.5%	32.4%	32.4%	13.5%			100.0%
			Item within %	48.4%	60.0%	68.4%	61.5%	66.7%			62.7%
			of Total %	4.5%	9.1%	20.3%	20.3%	8.5%			62.7%

Item No.	Items of students' evaluation for Blackboard	Gender		Responses					Total	Chi-Square	Sig.
				Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree			
7	The Blackboard system helps to control and customize the learning process	Males	Count	6	9	51	45	12	123	1.99	0.74
			Gender within %	4.9%	7.3%	41.5%	36.6%	9.8%	100.0%		
			Item within %	30.0%	30.0%	41.1%	36.9%	35.3%	37.3%		
			of %Total	1.8%	2.7%	15.5%	13.6%	3.6%	37.3%		
		Females	Count	14	21	73	77	22	207		
			Gender within %	6.8%	10.1%	35.3%	37.2%	10.6%	100.0%		
			Item within %	70.0%	70.0%	58.9%	63.1%	64.7%	62.7%		
			of Total %	4.2%	6.4%	22.1%	23.3%	6.7%	62.7%		
8	The Blackboard system helps to record and monitor learner performance	Males	Count	7	12	34	54	16	123	1.01	0.91
			Gender within %	5.7%	9.8%	27.6%	43.9%	13.0%	100.0%		
			Item within %	38.9%	41.4%	40.5%	34.8%	36.4%	37.3%		
			of Total %	2.1%	3.6%	10.3%	16.4%	4.8%	37.3%		
		Females	Count	11	17	50	101	28	207		
			Gender within %	5.3%	8.2%	24.2%	48.8%	13.5%	100.0%		
			Item within %	61.1%	58.6%	59.5%	65.2%	63.6%	62.7%		
			of Total %	3.3%	5.2%	15.2%	30.6%	8.5%	62.7%		

It is clear from Table 6.: There are no statistically significant differences between the frequencies of male group responses and the frequency of female group responses on all the items of the Blackboard evaluation. As all Chi-Square values were not statistically significant, indicating the convergence of the frequencies of male and female responses in terms of approval and disapproval of all the evaluation items of the Blackboard.

In order to find out the significance of the difference between the average scores of males and females in the total score of the student evaluation axis for the Blackboard system, Independent Samples T-Test was used to calculate the significance of the differences between two independent samples, and the results were as shown in the table 7.

Table 7.T-Test results for the gender variable in the overall score of the Blackboard Evaluation

The variable	(n=207) Females		(n=123) Males		T	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
Blackboard system Evaluation	29.86	6.69	28.80	6.75	1.39	0.16

It is evident from Table 7: There is no statistically significant difference between the average scores of males and females in the evaluation of the e learning system (Blackboard) . This means that males and females were given roughly the same level of evaluation of the Blackboard e-learning system, meaning that males and females have a close sense of the pros and cons of the Blackboard.

4.4. Results of the fourth question:

The fourth question states: Does the evaluation of Umm Al-Qura University students for e-learning system(D2L) differ by gender (male / female)?

To answer this question, Chi-Square Test was used to identify the significance of the differences between the frequency of responses of

Table 6. The Chi-Square Test results for student evaluation items for the Blackboard system according to the variable of gender (male / female

Item No.	Items of students' evaluation for Blackboard	Gender	Responses					Total	Chi-Square	Sig.	
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
1	The Blackboard system interface is easy to use	Males	Count	12	19	27	47	18	123	2.31	0.68
			% within Gender	9.8%	15.4%	22.0%	38.2%	14.6%	100.0%		
			% within Item	33.3%	44.2%	38.0%	34.1%	42.9%	37.3%		
		% of Total	3.6%	5.8%	8.2%	14.2%	5.5%	37.3%			
		Females	Count	24	24	44	91	24	207		
			% within Gender	11.6%	11.6%	21.3%	44.0%	11.6%	100.0%		
% within Item	66.7%		55.8%	62.0%	65.9%	57.1%	62.7%				
%of Total	7.3%	7.3%	13.3%	27.6%	7.3%	62.7%					
2	The Blackboard system interface is stable in controlling and navigating other components and interfaces	Males	Count	19	23	26	39	16	123	7.55	0.11
			% within Gender	15.4%	18.7%	21.1%	31.7%	13.0%	100.0%		
			% within Item	48.7%	41.1%	41.9%	28.9%	42.1%	37.3%		
		% of Total	5.8%	7.0%	7.9%	11.8%	4.8%	37.3%			
		Females	Count	20	33	36	96	22	207		
			% within Gender	9.7%	15.9%	17.4%	46.4%	10.6%	100.0%		
% within Item	51.3%		58.9%	58.1%	71.1%	57.9%	62.7%				
%of Total	6.1%	10.0%	10.9%	29.1%	6.7%	62.7%					
3	The Blackboard system facilitates discussion with other students	Males	Count	16	26	38	30	13	123	1.96	0.74
			% within Gender	13.0%	21.1%	30.9%	24.4%	10.6%	100.0%		
			% within Item	41.0%	36.6%	41.8%	34.1%	31.7%	37.3%		
		% of Total	4.8%	7.9%	11.5%	9.1%	3.9%	37.3%			
		Females	Count	23	45	53	58	28	207		
			% within Gender	11.1%	21.7%	25.6%	28.0%	13.5%	100.0%		
% within Item	59.0%		63.4%	58.2%	65.9%	68.3%	62.7%				
% of Total	7.0%	13.6%	16.1%	17.6%	8.5%	62.7%					
4	The Blackboard system facilitates discussion with the teacher	Males	Count	12	23	33	38	17	123	1.34	0.99
			% within Gender	9.8%	18.7%	26.8%	30.9%	13.8%	100.0%		
			% within Item	38.7%	37.7%	35.9%	38.0%	37.0%	37.3%		
		% of Total	3.6%	7.0%	10.0%	11.5%	5.2%	37.3%			
		Female	Count	19	38	59	62	29	207		
			% within Gender	9.2%	18.4%	28.5%	30.0%	14.0%	100.0%		
% within Item	61.3%		62.3%	64.1%	62.0%	63.0%	62.7%				
% of Total	5.8%	11.5%	17.9%	18.8%	8.8%	62.7%					
5	The Blackboard system makes it easy	Males	Count	11	14	22	53	23	123	1.23	0.87
			% within Gender	8.9%	11.4%	17.9%	43.1%	18.7%	100.0%		

Item No.	Items of students' evaluation for Blackboard	Gender	Responses					Total	Chi-Square	Sig.	
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
	to access shared data and files		% within Item	45.8%	38.9%	33.3%	37.3%	37.1%	37.3%	4.57	0.33
			% of Total	3.3%	4.2%	6.7%	16.1%	7.0%	37.3%		
			Count	13	22	44	89	39	207		
		Females	% within Gender	6.3%	10.6%	21.3%	43.0%	18.8%	100.0%		
			% within Item	54.2%	61.1%	66.7%	62.7%	62.9%	62.7%		
			% of Total	3.9%	6.7%	13.3%	27.0%	11.8%	62.7%		
6	The Blackboard system facilitates the exchange of scientific experiences and concepts with others	Males	Count	16	20	31	42	14	123	4.57	0.33
			% within Gender	13.0%	16.3%	25.2%	34.1%	11.4%	100.0%		
			% within Item	51.6%	40.0%	31.6%	38.5%	33.3%	37.3%		
		% of Total	4.8%	6.1%	9.4%	12.7%	4.2%	37.3%			
		Females	Count	15	30	67	67	28	207		
			% within Gender	7.2%	14.5%	32.4%	32.4%	13.5%	100.0%		
% within Item	48.4%		60.0%	68.4%	61.5%	66.7%	62.7%				
7	The Blackboard system helps to control and customize the learning process	Males	Count	6	9	51	45	12	123	1.99	0.74
			% within Gender	4.9%	7.3%	41.5%	36.6%	9.8%	100.0%		
			% within Item	30.0%	30.0%	41.1%	36.9%	35.3%	37.3%		
		% of Total	1.8%	2.7%	15.5%	13.6%	3.6%	37.3%			
		Females	Count	14	21	73	77	22	207		
			% within Gender	6.8%	10.1%	35.3%	37.2%	10.6%	100.0%		
% within Item	70.0%		70.0%	58.9%	63.1%	64.7%	62.7%				
8	The Blackboard system helps to record and monitor learner performance	Males	Count	7	12	34	54	16	123	1.01	0.91
			% within Gender	5.7%	9.8%	27.6%	43.9%	13.0%	100.0%		
			% within Item	38.9%	41.4%	40.5%	34.8%	36.4%	37.3%		
		% of Total	2.1%	3.6%	10.3%	16.4%	4.8%	37.3%			
		Females	Count	11	17	50	101	28	207		
			% within Gender	5.3%	8.2%	24.2%	48.8%	13.5%	100.0%		
% within Item	61.1%		58.6%	59.5%	65.2%	63.6%	62.7%				
			% of Total	3.3%	5.2%	15.2%	30.6%	8.5%	62.7%		

the sample members according to the variable of gender (male / female) with regard to the evaluation items of the D2L system, and the results were as shown in table 8.

It is clear from Table 8: There are no statistically significant differences between the frequencies of the male sample responses and the frequency of the female sample responses on the items of the D2L system evaluation. As the Chi-Square values were not statistically significant, indicating the convergence of the frequencies of male and

female responses in terms of Approval and disapproval of the evaluation items of the D2L system. Except for item No. (1), The difference is in favor of females, where the highest percentage of repetition was in the female group (43.2%) for the response (strongly agree), while the highest percentage of repetition came in the males group (39.2 %) For response (agree), indicating the height of females compared to males in the degree of agreement with the item (1) of the D2L interface being easy to use.

In order to find out the significance of the difference between the average scores of males and females in the total score of the students' evaluation axis for the D2L system, (Independent Samples T-Test) was used to calculate the significance of the differences between two independent samples, and the results were as shown in table 9.

Table 9. T-Test results for the gender variable in the overall score of the D2L system evaluation

The variable	(n=132) Females		(n=51) Males		t	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
The D2L system Evaluation	32.25	5.96	30.31	5.95	1.97	0.05

It is clear from Table 9: There is a statistically significant difference between the mean scores of males and females in the D2L system evaluation in favor of females. This means that females feel more positive about the D2L system than males.

So the research found statistically significant difference between the mean scores of males and females in the D2L system evaluation in favor of females, and on the other hand There is no statistically significant difference between the average scores of males and females in Blackboard system evaluation. This may be due to the fact that the D2L system was implemented firstly at Umm Al-Qura University, and literature agreed that females communicated more, have a greater social presence, and are more satisfied with online courses than males (Johnson, 2011; Gonzalez-Gomez, Guardiola, Rodríguez, & Alonso, 2012; Al-Sharif (2016), and this mean that they feel more positive

about the D2L system than males, while the Blackboard system was applied at a later stage, and therefore the use of e-learning systems became not a new and mysterious matter for students, and dealing with it became common among various students(males and females). and therefore, there is no statistically significant difference between the average scores of males and females in Blackboard system evaluation.

5.Conclusion & Recommendations

The evaluation of e-learning systems periodically and regularly is an important matter that must be taken into account to maintain the efficiency and success of these systems in achieving educational goals, in light of the diversity of students 'needs and the cultural and social variables that affect societies, especially Arab societies.

In light of the results of the research by identifying the level of satisfaction of students at Umm Al-Qura University in the Kingdom of Saudi Arabia about e-learning systems (D2L & blackboard), as well as exploring the relationship between university students 'evaluation of these two systems in light of the gender variable (males and females). A set of recommendations and proposals are presented as follows: Directing the attention of those in charge of decision-making at universities and higher education institutions to improve the students' satisfaction in e-learning environments effectively. Adopting the strategic planning for e- learning implementation in higher education institutions. Providing the necessary funds for e- learning application in education institutions, distribution the awareness of e-learning importance among students and faculty members in higher education, providing training courses to enhance e- learning skills required for students and faculty members in higher education institutes, providing financial and promotional rewards for creative individuals in submitting proposals to develop e-learning system. Creating independent unites for evaluating e-learning systems periodically at Saudi institutes and universities, as well exploring the relation between e- leaning evaluation and different variables. Providing the best approaches and models for designing e-learning to create an educational environment that suits interests and needs of diverse students within higher education institutes. The research also suggests more research to scope the most effective solutions to overcome the

obstacles that prevent the effective application of e-learning systems within educational institutions.

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