

Effectiveness of E-Learning Experience in Gulf universities Region: Students' Perceptions

Dr. Saba Qadhi

Associate Director, Core Curriculum Program, Deanship of General Studies, Qatar University, 2713,
Doha, Qatar

Dr. Mamduh Ashraah

Associate Professor, Educational Science Department, College of Education, Qatar University,
2713, Doha, Qatar

Dr. Wael Yousef

Assistant Professor, Core Curriculum Program, Deanship of General Studies, Qatar University, 2713,
Doha, Qatar

Corresponding author's email address:

Dr. Wael Yousef

wyousef@qu.edu.qa

Abstract

The current research aims to evaluate the e-learning realities in Gulf Countries Universities. The study aims to identify factors that influence the acceptance of e-learning courses and the perception of Gulf universities by their student. This study uses ethnography survey methods to study the population of university students in the Gulf countries. It is carried out during the academic year 2019-2021. The study involves a sample of over 1338 males and females from the Bahrain Kingdom, the United Arab Emirates (UAE), Qatar, and the Kingdom of Saudi Arabia (KSA). The findings also revealed that due to the country variable, the gender variable, the college variable, and performance, between the averages of Gulf institutions' replies to the three axes of the study instrument, there are statistically significant disparities at the level of (0.05). To avoid the challenges students and faculty face, the researcher also suggested that e-learning systems be developed per their needs.

Keywords: E-learning in Higher Education, Gulf universities, Effective E-learning

Introduction

The lecture was once the central educational module for university students (Richardson, 2003). Its transformation into an online learning platform has greatly impacted educational delivery models. Online learning is now considered a new trend in higher education. Its success is relative to the expectations of the participating universities such as Bahrain, UAE, Qatar, and the KSA as representatives of the Gulf region.

The traditional teaching models for higher education have been focused on having professors and students interact one-on-one. The advent of the Internet-enabled universities and colleges provides various breaks in their learning systems. This is what prompted many students

to explore online learning methods. Online learning has become a great feature for students. However, it can also come with many problems.

The study's findings revealed that many universities and colleges are integrating online learning into their education programs (Blustain et al., 1999). Many professionals believe that the educational models utilized today will be replaced by the end of the residential-oriented models. In order to properly handle the changes, students should first ask themselves how they will handle them (Drucker, 1997). Students should be able to handle the various aspects of learning in an online environment. They should also interact with their professors and peers through the Internet. Aside from having the

necessary skills to use learning management systems, teachers and students should also communicate. In terms of learning, collaborative learning presents various challenges and opportunities (Macdonald, 2003). Assessments and assignment submissions through the internet are essential components of the educational environment. They allow students to expand their knowledge by analyzing and defending their peers' opinions. (Tam, 2000).

The effectiveness of e-learning has been studied before its widespread adoption. Various research institutions in the GCC have been conducting studies to analyze the various factors that influence learning perceptions. The study aims to identify the various facets of e-learning and how they can improve learning efficiency. It also explores the various dimensions of e-learning that are beneficial for learning.

The study analyzed the various advantages and disadvantages of e-learning. It also sought students' suggestions for e-learning development. They also recognized the benefits of e-learning in meeting the increasing demands for education. However, they were also worried about the dangers of this technology. The students then recommended the establishment of specialized centers for e-learning and infrastructural improvements. Aside from financial constraints, the respondents also noted that they were aware of the various barriers to learning, such as language barriers and cultural issues.

Significance of the Study

There is a lack of compatible research in Arab society even though many investigations have assessed learners' online learning perceptions in universities and colleges in the Gulf States (So & Brush, 2008; Lao & Gonzales, 2005; Levy & Murphy, 2002). Subsequently, this study aims to identify the barriers that could prevent the widespread adoption of e-learning in various higher education institutions, especially during the pandemics. This research is especially interested in Arab nations within emerging economies. Different universities in different

countries have been selected for this study, including Bahrain, UAE, Qatar, and the KSA.

Research Objectives

The objective of this research is to:

- Analyze the various e-learning realities faced by Gulf universities.
- Explores the many aspects that influence e-learning course acceptability.
- Learn about the different benefits and drawbacks of e-learning, as well as student ideas for e-learning improvement.
- Find out the various factors that limit the effectiveness of e-learning in Gulf universities.
- Explore how cultural background aspects in Arab society influence learner perception towards e-learning.

Research Questions

This research will find out the answer to the following study questions:

- What are various aspects of e-learning in higher education institutions in the Gulf?
- What are facets of the acceptance of online courses in the Gulf?
- What are the perceptions of e-learners about the advantages of e-learning in Gulf universities?
- What factors can affect the effectiveness of e-learning in the Gulf universities?
- How do cultural background aspects in Arab society influence learner perception towards e-learning?

Literature Review

The literature review provides a comprehensive description of the various types of e-learning that are commonly used in higher education. It also reviews the level of acceptance of e-learning in the institution. Although many frameworks deal with the various components of learning, there are still missing elements that can

promote learning. One of these is the role of blended learning in the 21st century.

The university's R&D team has been working on developing programs and technology that will meet the needs of diverse student populations. The various programs and courses offered by different universities and colleges help promote the services of their respective institutions. The time and attendance of students are very important factors in improving a university's brand. They play a huge role in shaping the institution's offerings and services. Universities are starting to offer various marketing programs and courses to attract more students. The cost-efficient nature of these programs and courses enables them to attract more students.

Universities offer competency-based programs and courses that help prepare students for success in the workplace. Today's business leaders must support their employees' abilities and the needs of the labor market by equipping them with the necessary skills. Through competency-based programs, students are assessed for their real-world skills and develop strategies used in the workplace. These assessments help prepare graduates for success in the job market.

The students will have regular interactions with university professionals who have expertise in the study. These assessments help students develop and hone their professional skills. They also keep up with the latest industry trends and regulations. The Gulf region's universities constantly develop programs and solutions to help working students move seamlessly from education to career. They provide a wide range of programs and services to satisfy the needs of working students.

Methodology

The ethnographies were conducted to study the views of e-learning course participants. The subjects were selected using the traditional

methods of teaching. The study's objective was to collect data on the students' primary data regarding their country, grade, as well as their extent of achievement. The points of the questionnaire, which totaled 47, were allocated over three axes as follows:

- The first axis, which includes 22 criteria, assesses the benefits of online learning from the perspective of Gulf university students.
- The second axis assesses the barriers that students at Gulf universities face in effectively utilising online learning. The first axis, which includes 13 items, examines the benefits of online learning.
- The third axis asks students what they want to see at their institutions in order to boost e-learning. It employs a five-point Likert scale to indicate the respondents' opinions, with 12 points being the highest.

The study analyzed the attitudes of learners about online learning (Astin, 1993). The survey aimed to figure out how satisfied students were with the educational value of the online teaching models. The objective of this section was to determine the students' attitudes towards online learning. The demographic information of the respondents was also collected. This section supported the study's objective to analyze the gender differences in the students' attitudes.

Study community and sample

Since the respondents were asked not to include their names, the responses were kept confidential from different Gulf Countries. Therefore, the current study population consists of all university students in (4) Gulf countries (the Kingdom of Saudi Arabia, the State of Qatar, the United Arab Emirates, and the Kingdom of Bahrain), during the academic year 2019-2020 AD, and the study sample consisted of (1338) Male and female students in those universities in the four countries, Table (1) shows the distribution of the study sample according to its variables.

Table (1) Distribution of the study sample according to its variables

The variable	Category	Number	Percentage
Country	Kingdom of Saudi Arabia	457	34.16%
	Qatar	365	27.28%
	United Arab Emirates	296	22.12%
	Kingdom of Bahrain	220	16.44%
	Total	1338	100%
Gender	Male	520	38.86%
	Female	818	61.14%
	Total	1338	100%
College	Academic	789	58.97%
	Humanitarian	549	41.03%
	Total	1338	100%
Academic Level	First Year	380	28.40%
	Second Year	224	16.74%
	Third Year	311	23.24%
	Fourth Year	309	23.10%
	Fifth Year	114	8.52%
	Total	1338	100%
Achievement Level	Excellent	253	18.91%
	Very good	481	35.95%
	Good	437	32.66%
	Average or less	167	12.48%
	Total	1338	100%

prohibit students from properly adopting e-learning in Gulf universities.

- A third axis is a tool that measures students' views at Gulf universities on e-learning. It consists of 12 points and is based on a scale of 5 to 5.

Study tool

To fulfill the study's aim, a questionnaire was developed. The first part of the questionnaire analyzed the study sample members' academic level, country of origin, and gender. The second part focused on their country of origin and gender. The questionnaire's points, which totaled 47, were divided into three axes as follows:

The first axis, which contains 22 points, examines the benefits of e-learning from the perspective of students at Gulf universities.

- The second axis, which includes 13 points, evaluates the barriers that

The validity and reliability of the study tool

The tool's legitimacy was confirmed by a team of university professors. The referees took their opinions and interpretations. The tool was then used for an exploratory sample of 50 male and female students. Using a Pearson Correlation coefficient, the internal consistency coefficients were retrieved (As in Table 2).

Table (2) The values of the correlation coefficients for the points of the study tool, along with the total score for the axis contained in it (n = 50)

Advantages e-learning				Obstacles that limit the effectiveness e-learning		Proposals to improve e-learning	
Number words	Correlation coefficient	Number gateway	Correlation coefficient	Number gateway	Correlation coefficient	Number words	Correlation coefficient
1	0.770	12	0.798	1	0.841	1	0.718
2	0.764	13	0.743	2	0.832	2	0.723
3	0.834 **	14	0.714 **	3	0.830 **	3	0.695 **
4	0.816 **	15	0.806 **	4	0.840 **	4	0.703 **
5	0.848 **	16	0.805 **	5	0.678 **	5	0.816 **
6	0.846 **	17	0.822 **	6	0.844 **	6	0.708 **
7	0.866 **	18	0.888 **	7	0.857 **	7	0.807 **
8	0.862 **	19	0.674**	8	0.674 **	8	0.816**
9	0.724 **	20	0.861**	9	0.860 **	9	0.752**
10	0.791 **	21	0.796**	10	0.885 **	10	0.802**
11	0.838 **	22	0.639 **	11	0.643 **	11	0.782 **
----	-----	----	-----	12	0.698 **	12	0.773 **
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** The difference in the arithmetic means is statistically significant at the level of ($\alpha = 0.01$).

The correlation coefficients of the tool correlate favorably with the overall score of the axis (= 0.01), indicating the adequacy of each of the points to measure the axis included in it, according to the data in Table 2. The stability

coefficients for the three axes of the research tool were retrieved using the Cronbach's alpha equation after establishing the validity of the study tool's internal consistency (as shown in Table 3).

Table (3) Reliability coefficients for the study tool axes (n = 30)

Axes	Number of points	Cronbach coefficient Alpha
Advantages of e-learning	22	0.972
Barriers that limit the effectiveness of e-learning	13	0.948
Proposals to improve e-learning	12	0.930

Data collected in Table 3 shows that the study tool axes' stability coefficients were high

and appropriate for the current study; the reliability coefficient value for the axis of e-

learning positives was (0.972). The reliability coefficient value for the axis of e-learning positives was (0.948). Finally, the reliability coefficient value for the axis of proposals for improving e-learning w(0.930) .

Statistical treatment

1 -The arithmetic means, or standard deviations, were utilized to answer the following

Table (4) Criterion for interpreting the arithmetic average of the responses of respondents, according to the five response categories

Levels of response	Arithmetic average	The level of advantages of e-learning	Level of obstacles to e-learning	Level of importance of e-learning improvement proposals
Strongly agree	4.21 - 5.00	Very high	Very high	Very high
Agree	3.41 - 4.20	High	High	High
Fairly	2.61 - 3.40	Average	Average	Average
Disagree	1.81 - 2.60	Low	Low	Low
Strongly disagree	1 - 1.80	Too low	Too low	Too low

2- An independent samples t-test was performed to find differences between the sample members' replies according to the factors in order to answer the fourth study question, college for genders. One-Way ANOVA was also used to detect discrepancies in the sample members' replies according to factors: country, academic level, level of achievement, and if the results showed differences in the reactions of the study sample, then a (Scheffer) test Schefferry comparisons was used to reveal the source of those differences.

questions: (first, second, and third, as well as to interpret the arithmetic criterion produced from the range equation was used to diagnose the arithmetic average of the sample members' responses, and Table 4) depicts the criterion for diagnosing the arithmetic average of the sample members' reactions, according to the five response categories.

Results of the study

Results related to the answer to the first question: "What are the advantages of e-learning from the viewpoint of students at Gulf universities?"

The standard deviation and arithmetic means of the study sample's responses were calculated using the first axis of the study tool, and the results were as in Table 5)

Paragraph No	Pros of e-learning	Arithmetic mean	Standard deviation	Ranking	Level
1	Keeps pace with technological developments in the field of education	3.83	1.04	3	High

2	Develops students' creative skills	3.35	1.15	14	Average
3	Simplifies the content and makes it clearer	3.20	1.17	18	Average
4	Makes learning more enjoyable compared to the learning style in regular classrooms	3.00	1.17	21	Average
5	Provides students' effort to achieve learning	3.41	1.19	12	High
6	Promotes logical thinking	3.27	1.17	15	Average
7	Makes students more motivated to learn	2.94	1.19	22	Average
8	The learner feels more comfortable than learning in real classes	3.36	1.20	13	Average
9	Reduces the economic cost of education	3.83	1.15	4	High
10	Achieves the lesson objectives in a shorter time than regular education	3.46	1.12	11	High
11	Improves the level of student achievement	3.17	1.16	19	Average
12	Facilitates sharing of assignments between student and teacher	3.59	1.17	9	High
13	Decreases student absenteeism from lectures	3.70	1.18	7	High
14	Increases students should bear their responsibilities towards their learning	3.64	1.16	8	High
15	It is flexible as it allows students to choose a learning time that suits them	3.75	1.15	6	High
16	Fits all scientific tracks and academic majors	3.02	1.18	20	Average
17	Develops students 'skills in employing technology in education	3.82	1.11	5	High
18	Recommended it is an alternative to teaching in real classes	3.21	1.19	17	Average
19	Allows easy communication with a faculty member outside of teaching time	3.56	1.18	10	High
20	During e-learning, the student feels that he is in the real classroom where there is: the teacher - the student - the subject.	3.22	1.19	16	Average
21	The e-learning programs contain a set of tools that make it a suitable educational option such as: organizing and controlling tools, voice and picture sharing, video and writing	3.84	1.06	2	High
22	The programs i use in e-learning are compatible with the operating system of my device without problems (windows - android - mac ios)	3.89	1.12	1	High
Overall average for the axis of e-learning positives		3.46	0.92	-	High

Table (5) Arithmetic averages, standard deviations, and the order of responses of students at Gulf

universities about the positives of e-learning

The result in Table (5) indicated that the advantages of e-learning from the viewpoint of Gulf university students, in general (overall), came at a high level, with an arithmetic average of (3.46) and a deviation Standard (0.92).

The results also indicate that students from Gulf universities' responses regarding the advantages of the degree of e-learning was

medium to high. Where (10) points were scored at a medium level, with arithmetic averages ranging from (2.94) to (3.36), and the remaining points were scored at a high level. Their arithmetic averages ranged between (3.41) and (3.89), and Paragraph (22) came "The programs correspond Which I use in e-learning with the operating system of my device without problems (Windows - Android - Mac IOS) "in the first order with an arithmetic mean (3.89) and a

standard deviation (1.06) and at a high level.

While paragraph (7) "make about learnings more enthusiastic about learning" came in the last order with arithmetic mean (2.94), a standard deviation (1.19), and an average level, preceded in the order before the previous Paragraph (4) "When compared to traditional classroom instruction, it makes learning more

engaging. "With a mathematical mean (3.00), a standard deviation (1.17), and with a medium level.

Results related to the answer to the second question: "What are the obstacles that limit the effectiveness of e-learning from the viewpoint of students at Gulf universities?"

The arithmetic second axis was then used to compute the means and standard deviations of the research sample's replies; the findings are shown in Table. (6).

Table (6) the arithmetic averages, standard deviations, and the order of the responses of students at Gulf universities about the obstacles that limit the effectiveness of e-learning

agr anh	Barriers that limit the effectiveness of e-learning	th met ic	nda rd dev	Ra nki	Le vel
1	Reduces students' interest in the course	3.40	1.17	11	Average
2	Difficult to understand applied aspects through this type of learning	3.72	1.14	4	High
3	Leads to students' stress during the learning process	3.50	1.19	9	High
4	Hinders the effective achievement of the lesson objectives	3.23	1.12	12	Average
5	Fits e-learning some of the types of learners	3.68	1.02	5	High
6	Reduces interaction among students	3.53	1.17	8	High
7	Students are more engaged during e-learning	3.78	1.18	3	High
8	Increases students' burdens and the duties that are required of them to perform	4.12	1.08	2	High
9	The absence of face-to-face interaction between the teacher and his students leads to problems in teaching and learning	3.60	1.19	6	High
10	This type of education leads to students' indiscipline	3.47	1.12	10	High
11	The course is reduced and shortened by focusing on some of the basic aspects of the lesson	3.58	1.11	7	High
12	E-learning applications are exposed to the risk of privacy breach	3.18	1.18	13	Average
13	There are threats that reduce the chances of benefiting from e-learning applications (such as internet quality, and the pressure on the program during the prime)	4.14	1.09	1	High
Overall average of the barriers that limit the effectiveness of e-learning		3.61	0.84	-	High

The results indicate that the obstacles that limit the effectiveness of e-learning in general (overall) came from the viewpoint of Gulf university students.

The results also indicate that Gulf university students' responses to the obstacles that limit the effectiveness of e-learning ranged between medium and high levels. Where (3) obstacles block a medium level, and their arithmetic averages ranged between (3.18) and (3.40), while the rest of the challenges challenge high

high-level obstacles arithmetic averages ranged between (3.47) and (4.14). The obstacle to e-learning programs was presented in Paragraph 13, which mentioned the threats that could prevent students from accessing such applications. The other barriers included high levels of stress and time constraints. The first order has an aretaic mean of 4.14, followed by a standard deviation of 1.09. The second-order has a standard deviation of 1.09. The aretaic mean (4.12), standard deviation, and high level are used to determine the duties that the students

have to complete, a standard deviation (1.08) and a high level.

Whereas the obstacle came in paragraph (12) "e-learning applications are exposed to the risks of breaching privacy" in the last order, with an arithmetic mean (3.18), a standard deviation (1.18), and a medium level, preceded in the penultimate order. The obstacle mentioned in Table (7) Arithmetic averages, standard deviations, and the order of responses of students at Gulf universities on proposals to improve e-learning

Paragraph (4) "impedes the achievement of objectives the lesson actively" with an arithmetic mean (3.23), a standard deviation (1.12), and a medium level.

The standard deviation and arithmetic means of the study's results were calculated to answer the question. The results are in Table (7).

Paragraph no	Proposals to improve e-learning	Arithmetic mean	Standard deviation	Ranking	Level
1	Design of curricula in ways that support e-learning	4.09	0.99	8	High
2	Creating the infrastructure for e-learning from tools the means, devices, and networks of the internet within the university	4.17	0.95	4	High
3	Providing simulation programs for applied scientific majors	3.92	0.99	11	High
4	Employing e-learning naturally in times of regular education, which prepares students to deal with it in exceptional circumstances	3.96	1.01	10	High
5	Save more from an alternative to e-learning in anticipation of any emergency circumstances	4.20	0.92	3	High
6	Activating the principle of gamification in e-learning to provide an atmosphere of challenge between the student and himself / herself	3.84	1.01	12	High
7	Designing e-learning in ways to encourage students to learn	4.15	0.96	6	High
8	Providing electronic content (written - audiovisual) contribute to achieving the objectives of lesson	4.22	0.99	2	Very high
9	Enhancing learning for students through activities and assignments in ways that focus on education more than evaluation	3.99	1.01	9	High
10	Developing educational methods to match the requirements of e-learning.	4.10	0.98	7	High
11	Defining electronic office hours in which the teacher meets his students	4.16	0.99	5	High
12	Providing resources to support students who face problems in e-learning	4.26	1.03	1	Very high
Overall average for the axis of e-learning improvement proposals		4.09	0.74	-	High

The results indicate in Table (7) That the proposals to improve e-learning in general (overall) have attained a high level of importance from the viewpoint of students at

Gulf universities, with a mean (4.09) and a standard deviation (0.74).

The results also indicate that students at Gulf universities' responses regarding the

Axes	Source variation	Sum squares	Degrees freedom	Mean squares	Journal of Positive School Psychology	Value "f" calculated	Level significance
8317							
Advantages e-learning	Between groups	144,242	3	48,081		56,141	0.000 *
	Within groups	1142,470	1334	0.856			
	Total	1286,712	1337				
Obstacles to the effectiveness of e-learning	Between groups	42,985	3	14,328		20.205	0.000 *
	Within groups	946,024	1334	0.709			
	Total	989,009	1337				
Proposals to improve e-learning	Between groups	17.659	3	5.886		10.982	0.000 *
	Within the groups	715.023	1334	0.536			
	Total	732.681	1337				

importance of proposals to improve e-learning ranged from high to very high. Two proposals received a very high level of importance, while the rest of the ten were essential, and their arithmetic averages ranged between (3.84) and (4.20). The proposal came in Paragraph (12) "Providing resources to support students who face problems in e-learning" in the

While the proposal came in Paragraph (6), "Activating the principle of gamification in e-learning to provide an atmosphere of challenge between the student and himself/herself" in the last order with arithmetic mean (3.84) and a standard deviation (1.01) and with a high level of importance, preceded in the order before the previous proposed Mentioned in Paragraph (3) "Providing simulation programs for applied scientific majors" with arithmetic mean (3.92) and a standard deviation (0.99) with a high level of importance.

Results related to the answer to the fourth question: " What are the differences in the averages of the research sample's replies at the

first order an arithmetic mean (4.26). A standard deviation (1.03) and a very high level of importance, followed in the second-order by the proposed in Paragraph (8) "Providing electronic content (written - audiovisual) contribute to achieving the objectives of a lesson" has an arithmetic mean (4.22), a standard deviation (0.99), and a very high level of importance.

0.05 level according to the variables: country, sex, college, academic level, level of achievement?"

4-1: The disparities between the research sample's averages yielded the following results.

Table (8) result analysis (One- way ANOVA) to reveal the significance differences between averages responses Gulf university students on axes study tool, depending on the variable state

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$).

Table (8) shows statistically significant differences at the level of (α 0.05) between the averages of Gulf university students' responses to the three axes of the study tool, depending on the country variable. The value of "f" calculated for the differences between students' responses in the four countries is (56.141), (20.205), and (10.982), respectively, which are statistically significant values at the level of significance ($\alpha \leq 0.05$).

To reveal the source of the differences due to the existence of statistical significance for the

country variable, between the responses of students at Gulf universities on the three axes of the study tool (positives, obstacles, and suggestions) the sample; Two-way comparisons were made using Scheffe's method, as shown in Table (9).

Table (9) The results of bilateral comparisons (Scheffe) to reveal the source of the differences between the responses of students at Gulf universities on the three axes of the study tool, according to the country variable

Axes	Variable Country	Arithmetic mean	Saudi Arabia	Qatar	UAE	Bahrain
			3.34	3.70	3.79	2.85
Advantages of e-learning	Saudi Arabia	3.34	-	0.36 *	0.45 *	0.49 *
	Qatar	3.70	-	-	0.09	0.85 *
	UAE	3.79	-	-	-	0.94 *
	Bahrain	2.85	-	-	-	-
Barriers to the effectiveness of e-learning	Variable Country	Arithmetic mean	Saudi Arabia	Qatar	UAE	Bahrain
			3.50	3.44	3.75	3.92
	Saudi Arabia	3.50	-	0.06	0.25 *	0.42 *
	Qatar	3.44	-	-	0.30 *	0.48 *
	UAE	3.75	-	-	-	0.17
	Bahrain	3.92	-	-	-	-
Proposals to improve e-learning	Variable Country	Arithmetic mean	Saudi Arabia	Qatar	UAE	Bahrain
			3.96	4.23	4.17	4.00
	Saudi Arabia	3.96	-	0.27 *	0.21 *	0.04
	Qatar	4.23	-	-	0.06	0.23 *
	UAE	4.17	-	-	-	0.17
	Bahrain	4.00	-	-	-	-

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$).

The results in Table (9) show shows the source of the statistically significant differences between the responses of students at Gulf universities on the advantages of e-learning was between the responses of students in Bahrain on the one hand, and the responses of students (Saudi Arabia, Qatar, and UAE) on the other hand, and in favor of the responses of students (Saudi Arabia, Qatar, and UAE). The differences were also statistically significant between the responses of students in Saudi Arabia on the one hand and the responses of students (Qatar and UAE) on the other hand, and n favor of students'

responses (Qatar and UAE). This result means that Saudi Arabia, Qatar, and the Emirates are rated postpositive learning more than their peers in Bahrain. Students in Qatar and the UAE also rated the positives of e-learning more than their peers in Saudi Arabia.

As for the source of the statistically significant differences between the responses of students at Gulf universities about the obstacles that limit the effectiveness of e-learning, it was between the responses of students (UAE and Bahrain) on the one hand, and the responses of

students (Saudi Arabia and Qatar) on the other hand, and in favor of the responses of students in the (UAE and Bahrain). This result means that students in the UAE and Bahrain: Assess the barriers that limit the effectiveness of e-learning to a greater degree than their peers in Saudi Arabia and Qatar.

As for the source of the statistically significant differences between the responses of students at Gulf universities on proposals to improve e-learning, it was between the reactions of students (Qatar and UAE) on the one hand, and the responses of students in the Kingdom of Saudi Arabia on the other hand, and in favor of the reactions of students in (Qatar and UAE). The differences were also statistically significant between the responses of students in Qatar, the

responses of students in Bahrain, and the responses of students in Qatar. This result means that students in the UAE and Qatar rated the importance of the proposals to improve e-learning more than their peers in Saudi Arabia. Qatar's students also emphasized proposals to strengthen e-learning to a degree higher than their peers in Bahrain.

4-2: The findings were based on the average replies of the research sample members as a function of their gender.

Table (10) The result of the (t-test) to reveal the significance of the differences between the averages of the responses of the study sample on the two axes of the study tool, according to the gender variable (total = 1336)

Axes	Sex	No.	The arithmetic mean	The standard deviation	(t) Value	Level of significance
Advantages of e-learning	Male	520	3.61	0.94	4.556	0.000 *
	Female	818	3.36	0.98		
Obstacles that limit the effectiveness of e-learning	Male	520	3.67	0.85	1.853	0.061
	Female	818	3.57	0.87		
Proposals to improve e-learning	Male	520	4.09	0.75	0.032	0.975
	Female	818	4.08	0.74		

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$).

The results in Table (10) indicate statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the averages of Gulf university students' responses about the positives of e-learning, according to the gender variable. The difference in male and female reactions to this (4.556) axis is estimated as a "t" value, which is statistically significant at the (0.05) level. The significance favored male students since the arithmetic mean of their responses (3.61) was higher than the arithmetic average of the female responses (3.36).

The results showed no statistically significant differences at the level of ($\alpha \leq 0.05$) between the averages of Gulf university students' responses on two axes (the obstacles that limit the effectiveness of e-learning, proposals to improve e-learning). The t values calculated for the differences between response

reactions Males and females are on these two axes (1.853) and (0.032), respectively, which are non-statistically significant values at ($\alpha \leq 0.05$) levels.

These results mean that females assessed the positives of e-learning more than their male colleagues. In contrast, male and female students evaluated the obstacles that limit the effectiveness of e-learning and proposals to improve e-learning convergingly.

4-3: Differences in the research sample's average replies based on the college variable.

Table (11) The result of the (t-test) to reveal the significance of the differences between the averages of the responses of the study sample on the two axes of the study tool, according to the college variable (total = 1336)

Axes	Faculty	No.	Arithmetic mean	Standard deviation	(t) Value	Level of significance
Advantages of e-learning	Scientific	789	3.46	1.01	0.278	0.781
	Humanity	549	3.45	0.94		
Obstacles that limit the effectiveness of e-learning	Scientific	789	3.69	0.83	3.877	0.000 *
	Humanity	549	3.50	0.89		
Proposals to improve e-learning	Scientific	789	4.09	0.74	0.347	0.728
	Humanity	549	4.08	0.74		

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$).

The results of the study in Table 11 shows that the level of significance of the obstacles that prevent Gulf students from effectively using e-learning increases significantly ($\alpha \leq 0.05$). The differences in the responses of male and female respondents to the question "What do you think?" are statistically significant value at ($\alpha \leq 0.05$) level as the value of "t" calculated on this axis (3.877). The significance of the difference in the answers (3.69) was that the arithmetic means of the respondents were higher than those of the students in the humanities faculties (3.50).

The study revealed that the differences in the responses of Gulf university students regarding the advantages of e-learning were not statistically significant at the level ($\alpha 0.05$), proposals to improve e-learning), as the "t" values calculated for the differences between students in the scientific and humanitarian colleges reached on these two axes (0.278) and

(0.347) respectively, they are non-statistically significant values at ($\alpha \leq 0.05$) level.

These results mean that students at scientific colleges assessed the obstacles that limit the effectiveness of e-learning to the degree that exceeds those of their colleagues in humanitarian colleges while studying. In contrast, scientific and humanitarian colleges evaluated the positives of e-learning and proposed to improve e-learning convergingly,

4-4: The study's educational level variable indicated that the differences in the responses of the study's participants were related.

Table (12) The result of a (One-way ANOVA) analysis to reveal the significance of the differences between the averages of the responses of students at Gulf universities on the axes of the study tool, according to the variable of the academic level

Axes	Source of variance	Sum of squares	Degrees of freedom	Average squares	Value of "f" calculated	Level of significance
Advantages of e-learning	Between groups	55.766	4	13.941	15.097	0.000*
	Within groups	1230.946	1333	0.923		
	Total	1286.712	1337			
Obstacles that limit the effectiveness e-learning	Between groups	4.514	4	1.129	1.528	0.192
	Within groups	984.495	1333	0.739		
	Total	989.009	1337			
Proposals improve e-learning	Between groups	16.765	4	4.191	7.804	0.000 *
	Within groups	715.917	1333	0.537		
	Total	732.681	1337			

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$).

The results show that the differences in students' responses on the two axes are statistically significant ($\alpha \leq 0.05$). The educational level variable, which is used to measure the differences between the responses of students, indicates that the values of "f" are statistically significant, at the level of ($\alpha \leq 0.05$), which is the values of "f" Calculated for the differences between students' responses in the five classes of the academic level on these two axes (15.097) and (7.804)

The study revealed that the average response of students at Gulf universities was not significantly different from that of their peers in other countries, which indicated no significant

differences at the level ($\alpha \leq 0.05$) between the average responses of students at Gulf universities on the axis (obstacles that limit the effectiveness of e-learning). The "f" values calculated for the differences between students on this axis reached (1.528). At (0.05), it is a non-statistically significant value.

The study's findings revealed that the differences were due to the statistical significance of the variable of academic level; Double comparisons were made using Scheffe's method, as shown in Table (13).

Table (13) the results of the bilateral comparisons (Scheffe) to reveal the source of the differences between the responses of students at Gulf universities on the two axes (positives, and proposals), according to the variable of the academic level

Axes	Variable of the academic level	Arithmetic average	First year	Second year	Third year	Fourth year	Fifth year
			3.46	3.20,	3.37	3.79	3.27
Advantages of e-learning	First year	3.46	-	0.27 *	0.09	0.33 *	0.19
	Second year	3.20	-		0.18	0.59 *	0.08
	Third year	3.37	-			0.42 *	0.10
	Fourth year	3.79	-				0.52 *
	Fifth year	3.27					
Proposals to improve e-learning	School level variable	Arithmetic average	First year	Second year	Third year	Fourth year	Fifth year
			4.00	3.99	4.16	4.25	3.94
	First year	4.00	-	0.01	0.16	0.24 *	0.06
	Second year	3.99	-		0.17	0.25 *	0.05
	Third year	4.16	-			0.09	0.22
	Fourth year	4.25					0.31 *
	Fifth year	3.94	-	-	-	-	

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$). The study revealed that the most significant differences in enthusiasm for e-learning were found among students from the fourth year. On the one hand, students' responses from the academic level were also analyzed. On the other hand, the enthusiasm for e-learning was significantly different among students from the fourth year. The same study revealed that enthusiasm for e-learning was significantly different among students from the academic year's first and second years. This result means that students in the fourth-year level evaluated the positives of e-learning more than their colleagues rated at the other education levels. Also, students in the first-year level rated the positives of e-learning more than their colleagues at the second-year level.

The study revealed that the most significant differences in students' responses were between the academic level and the age group. The findings indicated that the fourth-year students were more likely to evaluate the importance of e-learning proposals than their peers from the first, second, and fifth years.

4-5: The differences in the responses of the study participants were related to the level of achievement.

Table (14) The result of a (One-way ANOVA) analysis to reveal the significance of the differences between the averages of the responses of students at Gulf universities on the axes of the study tool, according to the variable of the level of achievement

Axes	Source of variance	Sum of squares	Degrees of freedom	Average squares	Value of "f" calculated	Level of significance
Advantages of e-learning	Between groups	76.445	3	25.482	28.087	0.000*
	Within groups	1210.268	1334	0.907		
	Total	1286.712	1337			
Obstacles that limit the effectiveness e-learning	Between groups	18.980	3	6.327	8.701	0.192
	Within groups	970.029	1334	0.727		
	Total	989.009	1337			
Proposals improve e-learning	Between groups	29.290	3	9.763	18.516	0.000 *
	Within groups	703.392	1334	0.527		
	Total	732.681	1337			

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$).

Table (14) revealed the statistical significance of the differences between the responses of students at different levels which is calculated at the level of ($\alpha \leq 0.05$) as the value of "f," which is equal to the difference between the responses of students at the four attainment levels. The

The statistical significance of the variable achievement level was revealed through the responses of the students. Two-way comparisons were conducted to analyze the differences on the three axes of the study tool (positives, obstacles, and suggestions) of the sample; the two-way

results of the study tool show that the differences in the responses of Gulf university students on three axes of the study tool are statistically significant. The four attainment levels are: (28.087), (8.701), (18.516), and (4.348) and the level of significance ($\alpha \leq 0.05$).

comparisons were made using Scheffé's method, as shown Table (15).

Table (15) The results of the bilateral comparisons (Scheffé) to reveal the source of the differences between the responses of students at Gulf universities on the three axes of the study tool, according to the level of achievement

Axes	Variable Achievement level	Arithmetic mean	Excellent	Very good	Good	Average or less
			3.27	3.54	3.27	4.00
E-learning advantages	Excellent	3.27	-	0.27 *	0.00	0.73 *
	Very Good	3.54	-	-	0.27 *	0.46 *
	Good	3.27	-	-	-	0.73 *
	Average or less	4.00	-	-	-	-
Obstacles to the effectiveness of e-learning	Variable Achievement level	Arithmetic average	Excellent	Very good	Good	Average or less
			3.70	3.49	3.59	3.86
	Excellent	3.70	-	0.21 *	0.11	0.16
	Very Good	3.49	-	-	0.10	0.37 *
	Good	3.59	-	-	-	0.27 *
	Average or less	3.86	-	-	-	-
E-Learning Improvement Proposals:	Achievement Level Variable	Arithmetic Average	Excellent	Very good	Good	Average or less
			4.14	4.11	3.92	4.40
	Excellent	4.14	-	0.03	0.22 *	0.26 *
	Very good	4.11	-	-	0.19 *	0.29 *
	Good	3.92	-	-	-	0.48 *
	Average or less	4.40	-	-	-	-

* The difference in the arithmetic means is statistically significant at the level of ($\alpha \leq 0.05$).

Table (15) shows that the study revealed that achievement was the main factor influencing the students' responses (very good) regarding the advantages of e-learning. On the other hand, the student's level of achievement was also influenced by their responses (excellent and good). This result means that students with a (very good) level evaluated the positives of e-learning to a degree higher than that of their high-level colleagues (excellent and good) and that students with a level (medium or less) evaluated the positives of e-learning more than

their colleagues rated (excellent, very good, and good).

Results and Analysis

In the Gulf nations, gender segregation is often considered a part of the culture and social values. This contributes to a lack of opportunities for women to develop their own social and cultural identities. Technology can help overcome these cultural barriers by offering alternatives to traditional communication and

collaborations. Despite the cultural and social barriers, e-learning can still be beneficial for women. Studies reveal that gender plays a huge role in women's attitudes toward learning.

The study revealed a strong relationship between the attitudes of male and female learners towards e-learning. The study revealed that female students' attitudes toward e-learning were similar to those of their male counterparts. In this study, male and female online students showed a positive attitude toward learning how to overcome shyness. They also believed that it can help develop self-esteem. The study revealed that nervousness was necessary to provide the best educational experiences with a p-value of 0.004. This belief supports the notion that online learning can help overcome cultural and social obstacles.

E-learning is a way to improve the learning experience by integrating various one-on-one meetings and online activities. Despite the advantages of e-learning, its lack of training and support is one factor that prevents it from being authentic. The need to integrate various technologies into teaching and learning has been a challenge for many schools globally. Although a study conducted in 2016 did not provide a clear picture regarding the effects of e-learning technology on learning.

According to a study, technology is the main factor that influences learning outcomes in educational institutions. There are fewer studies on the effects of e-learning on tertiary lecturers. According to wide-scale research, teachers have good digital skills and regularly use various technology tools.

The study focused on the factors that affected technology adoption among learners. The knowledge factors related to technology acceptance in higher education should be considered important in the development of learning theories and methods. Although the concepts of these knowledge factors have been conceptually identified, their empirical test has not been performed.

Data analysis revealed that the characteristics of lecturers and the quality of information they

provide are key factors that influence the behavior of higher learning institutions when it comes to implementing e-learning and blended learning. The study revealed that students were very receptive to learning through e-learning. It also helped teachers improve their teaching methods.

In a study conducted by a researcher, 75% of students said they preferred traditional classes over e-learning. Despite the advantages of e-learning, many students still prefer to take advantage of the traditional learning method. This is despite the fact that many schools have started offering online learning programs. Concerns about the acceptance and effectiveness of e-learning have been raised by faculty members. A study revealed that some teachers might not have confidence in integrating technology into the classroom.

Most teachers are very optimistic about the potential of ICT in improving their students' learning. However, they rarely practice using it in their teaching activities. The acceptance of e-learning by teachers is a significant issue that needs to be solved. This is because many of them cannot use technology in a proper and optimum manner.

Teachers' knowledge in these areas is very important to the success of e-learning in the educational sector. It helps students understand how technology can improve their learning experience. Various studies have been conducted to study technology adoption in teacher e-learning. The objective of these studies is to provide a better understanding of how technology can improve the teaching and learning process.

Although the concept of knowledge and expertise was not emphasized in the study, some parts of the teacher's cognitive function were still needed to be considered. For the study, the researcher focused on the cognitive aspects of how technology can affect a teacher's ability to learn and adopt new technology. Although the concept of e-learning has been around for a long time, it has not been widely used in higher education. Due to the lack of educational context, the current theories related to e-learning

are not very accurate. The researcher should also consider the teacher's knowledge when developing blended learning models.

Limitations

This research is focused on examining the learning styles of online students in Bahrain, UAE, Qatar, and the KSA (Curran et al., 2008). These Arab countries might be inapplicable to other developing even though they might be more broadly generalizable to Gulf emerging countries. The research should only be limited to university students. It should not be used by non-university students. The sample was only available in certain countries, such as Bahrain and the United Arab Emirates. The small sample size might affect statistical significance (Garg & Varma, 2007). The findings may also be used in comparison contexts. Due to the number of online learning programs available in different universities in the region, the sample sizes were limited in Bahrain, UAE, Qatar, and the KSA. The findings based on small samples are considered usable since they weren't designed to measure general presentation (Anderson & Algis, 2001). The nonparametric tests are also helpful for small sample size data. They can be used even for data with a small sample size because of their assumptions. Therefore, the t-tests were utilized for the standard data.

Conclusion

The main theories on e-learning adoption suggest that it can be described using a variety of models. Instead, the model should be modified to accommodate the varying needs of different teachers and technology.

E-learning plays a vital role in shifting educational reforms by helping institutions move away from traditional teaching and learning models.

The effectiveness of e-learning is yet to be proven. Instead, it should be utilized according to the guidelines established by the best practice studies. The students are more open to learning online as long as they feel comfortable with it. In other Arab nations, such as Bahrain, UAE,

Qatar, and the KSA, the restrictions on female learners are still prevalent.

The right educators can help you achieve a successful e-learning experience. Through this study, students learned that the role of e-learning teachers was very important to their learning experience. They also valued the skills and managerial capabilities of the individuals involved.

Recommendations to Improve Online Learning

Learning institutions should then help students improve their e-learning through online learning in various courses:

- The focus should also be on the continuous interactions among the users and instructors of online learning platforms. Aside from establishing strong relationships with the users, it is also important that the instructors and tutors are involved in the continuous development of e-learning.
- In 2015, King & Boyatt stated that educational resources should be provided in an online learning environment to develop their learning styles. These resources include books, magazines, and e-learning materials. They can help students improve their knowledge and skills by providing the latest information on various subjects.
- Students enrolled in e-learning courses need to state their goals and anticipated outcomes clearly. This will help them prepare for the courses and set their learning contracts.
- The flexibility of online learning should be integrated with the various administrative processes involved in learning to enable students to easily access resources.
- The use of text and words in e-learning courses can prevent course presentation simplifications. The use of visual tools in the design and production of course materials should help avoid this and foster the course's overall production. Through visual tools, students can easily

interpret and improve the presentation of complex concepts and subjects.

- Creating groups and collaborations can help students improve their learning experiences. Also, techniques such as video conferencing can make e-learning more engaging and interactive.
- Through online assessment, a person can determine if they're at a level of mastery or understanding. This can be done

References

- Anderson, A. & Algis, V. (2001) Small Samples: does size matter? *Investigative Ophthalmology and Visual Science*, 42, 1411-1413.
- Astin, A.W. (1993) *What Matters in College: Four critical years revisited*. San Francisco: Jossey-Bass.
- Blustain, H., Goldstein, P. & Lozier, G. (1999) Assessing the New Competitive Landscape, in R. Katz (Ed.) *Dancing with the Devil: information technology and the new competition in higher education*, 52-80. San Francisco: Jossey-Bass.
- Curran, R., Sharpe, D., Forristall, J. & Flynn, K. (2008) Student Satisfaction and Perceptions of Small Group Process in Case-based Interprofessional Learning, *Medical Teacher*, 30(4), 431-433.
<http://dx.doi.org/10.1080/01421590802047323>
- Drucker, P. (1997) An Interview with Peter Drucker, *Forbes Magazine*, 10 March, 126-127.
- Fetaji, B. & Fetaji, M. (2007) E-learning Indicators: a multidimensional model for evaluating and planning learning solutions. Paper presented at 2nd International Conference on Virtual Learning (ICVL), Constanta, Romania, 26-28 October.
- Garg, K. & Varma, V. (2007) A Study of the Effectiveness of Case Study Approach in Software Engineering Education, in *Proceedings of the 20th Conference on Software Engineering*, Dublin City University.

through various assessments, such as end-term examinations and continuous tests(Simpson, 2018). It's also important that the assessments are focused on ensuring that the students are being trained in accordance with the course's standards.

Ethical approval

All opinions, conclusions, and errors reflected in this manuscript are solely those of the author

- Harasim, L. (2017). *Learning theory and online technologies*. Routledge.
- Higgins, A. (2000) Some Outcomes of Flexible Learning at the University of Otago, 1996-1998, *Journal of Distance Learning*, 5(1), 39-47.
- King, E., & Boyatt, R. (2015). Exploring factors that influence the adoption of e-learning within higher education. *British Journal of Educational Technology*, 46(6), 1272-1280.
- Kumar, P. (2006) Using Universal Design Principles for E-learning, in T. Reeves & S. Yamashita (Eds) *Proceedings of World Conference on E-learning in Corporate, Government, Healthcare, and Higher Education 2006*, 1274-1277. Chesapeake, VA: Association for the Advancement of Computing in Education.
- Lao, T. & Gonzales, C. (2005) Understanding Online Learning through a Qualitative Description of Professors' and Students' Experiences, *Journal of Technology and Teacher Education*, 13(3), 459-474.
- Lee, C.Y. (2000) Student Motivation in the Online Learning Environment, *Journal of Educational Media and Library Sciences*, 37(4), 365-375.
- Levy, Y. & Murphy, K.E. (2002) Toward a Value Framework for Online Learning Systems, in *Proceedings of the 35th Hawaii International Conference on System Sciences (HICSS-35)*, the University of Hawaii at Manoa.
- Liu, L., Maddux, C. & Johnson, L. (2004) Computer Attitude and Achievement: is time an intermediate

- variable? *Journal of Technology and Teacher Education*, 12(4), 593-607.
- Macdonald, J. (2003) Assessing Online Collaborative Learning: process and product, *Computers and Education*, 40, 377-391.
[http://dx.doi.org/10.1016/S0360-1315\(02\)00168-9](http://dx.doi.org/10.1016/S0360-1315(02)00168-9)
 - McCombs, B.L. & Lauer, P.A. (1997) Development and Validation of the Learner-Centered Battery Selfassessment Tools for Teacher Reflection and Professional Development, *The Professional Educator*, 20(1), 1-21.
 - New Zealand Council for Educational Research (NZCER) (2004) Critical Success Factors and Effective Pedagogy for E-learning in Tertiary Education. Wellington: NZCER.
http://www.itpnz.ac.nz/reports/NZCER_Final_Report_Critical_Success_Factors.pdf
 - Phipps, R.A. & Merisotis, J.P. (1999) What's the Difference? Outcomes of Distance vs. Traditional Classroom-Based Learning, *Change*, 31(3), 12-22.
 - Richardson, V. (2003) Constructivist Pedagogy, *Teachers College Record*, 105(9), 1623-1640.
<http://dx.doi.org/10.1046/j.1467-9620.2003.00303.x>
 - Salmon, G. (2003) E-moderating: the key to teaching and learning online. London: Routledge Falmer.
 - Simpson, O. (2018). Supporting students in online, open, and distance learning. Routledge.
 - So, H. & Brush, T. (2008) Student Perceptions of Collaborative Learning, Social Presence and Satisfaction in a Blended Learning Environment: relationships and critical factors, *Computers and Education*, 51(1), 318-336.
<http://dx.doi.org/10.1016/j.compedu.2007.05.009>
 - Tam, M. (2000) Constructivism, Instructional Design, and Technology: implications for transforming distance learning, *Educational Technology, and Society*, 3(2).
 - Tubaishat, A., Bhatti, A. & El-Qawasmeh, E. (2006) ICT Experiences among Two Different Middle Eastern Universities, *Journal of Issues in Informing Science and Information Technology*, 3, 667-678.
 - Ueno, M. (2004) Animated Agent to Maintain Learner's Attention in E-learning, in G. Richards (Ed.) *Proceedings of World Conference on E-learning in Corporate, Government, Healthcare, and Higher Education 2004*, 194-201. Chesapeake, VA: Association for the Advancement of Computing in Education.
 - Yogesh Hole et al 2019 *J. Phys.: Conf. Ser.* 1362 012121
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