



Constructing a Scale of Students' Attitudes Towards Distance Learning at Jordanian Private Universities

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Abstract: The purpose of this study was to construct and apply a measuring scale to investigate students' attitudes towards distance learning at Amman Arab University, a private university in Jordan, through the evaluation of students' attitudes, opinions, and perceptions of distance learning. The study sample consisted of 731 students. A scale was developed, consisting of 45 items. The validity and reliability of the scale were assured; using the Factor Analysis procedure, the results showed a one-factor present in the performance on this scale. Also, the scree plot assured this result. In addition, the result showed a moderately positive attitude towards distance learning; teacher and student interaction was encouraging. Also, the results showed no statistically significant difference between the arithmetic means attributed to student gender. Thus, students' attitudes and opinions favored distance learning. This study may provide feedback to decision-makers at the university to reveal the distance learning challenges facing them. The outcomes will help students and administrators make decisions concerning these challenges and how to overcome them to implement a successful e-learning system at the university.

Keywords: Constructing a scale, student attitudes, distance learning

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INTRODUCTION

As technology has improved greatly in different ways in the last decades, the education requirements and needs have developed a lot and in turn course, the teaching methodologies were also affected (Gonzalez & Louis, 2018). Traditional teaching is no longer sufficient for students' educational needs. Therefore, distance learning emerged to enhance the insufficiency of traditional education (Williams, Paprock, & Covington, 1998). They explained that the new personal computer, as well as educational applications, have become easier and cheaper.

Background of the Study

The Jordanian government is keen on having an excellent quality of education that is compatible with the new global educational needs, to prepare generations capable of creativity, excellence, and competing in various scientific fields. Moreover, it emphasizes that there will be no prosperity without education. Thus, the continuity of education under all circumstances is an essential and indispensable requirement.

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The various attitudes studies, whether those aimed at developing, constructing attitudes scales or studying the trait itself occupies a large space in educational and psychological research. Attitudes also occupy a central place in human actions and are necessary for the interpretation of human behavior in order to confront the influences that work on forming negative attitudes (Ngussa & Mbuti, 2017).

There are key elements, defining the concept of the attitudes, which are: Attitudes are learned, they can predict behavior, also attitudes are influenced by the behavior of others, in addition, attitudes contained an emotional component, the task of measuring attitudes is not easy, the difficulty lies in the inadequacy of measurement instruments like the attitudes themselves because they are assumed trait which means measuring these traits is indirect. Therefore, the need to find effective attitudes measures has emerged (Crano & Prislin, 2006).

Recently, the Corona Virus pandemic has stretched over different countries where it has imposed the universities to replace the traditional teaching with e-learning (via distance), to provide the continuation of teaching for the students while maintaining the physical (social) distance environment that can prevent the spread of the virus (Daniel, 2020).

This virus has made billions of people around the world deal with the "distance education" system, where the method used in distance learning differs from one country to another, and from one university to another within each country, depending on the different capabilities, technical infrastructure, and equipment related to distance learning and the ability to fulfill its requirements. The state of emergency experienced by the world in facing this pandemic called on many countries of the world to close thousands of schools and universities, which forced them to adopt the option of distance learning through the use of "e-learning". Hence, this requires the adoption of fruitful and particular strategies in providing distance learning for all without exception. Universities tried to make the best use of all the means and capabilities that their infrastructures provide in carrying out the teaching and learning process. Electronic platforms and online tools are used to complement teaching online such as available lesson plans, video, and educational lessons for students. Besides achieving interaction between the elements of learning and the teaching process among students, faculty, blogs, audio recordings, and other resources can be used (Dhawan, 2020).

In the light of challenges posed by the Corona pandemic, the Ministries of Education, Higher Education, and Scientific Research were forced to use e-learning as a response to the continuity of public and higher education in Jordan. Under the guidance of the Higher Education Council, the telecommunications companies' cooperation boosted the chances of this success by applying policies that facilitate the process of downloading learning materials to mobile devices such as smartphones, tablets, laptops, etc., and reduce their costs (Adedoyin & Soykan, 2020).

Benefits from the learning management systems, social media platforms, and various technological applications can be used to enable universities to communicate effectively in two directions with students; to provide them with instructions and ways that facilitate the learning process. The prominence of having distance learning emerged out due to the need for some learners who are unable to study in the limitation of educational institutions for any reason. Currently, distant learning stands as an opportunity for not only educational purposes but also personal growth where group interaction with audio and videoconferencing by telephone is available (Yuzer & Kurubacak, 2015).

There is a growing awareness of the importance of assessing learning processes and measuring their outcomes with high efficiency. Therefore, there is an increasing demand for honest, accurate, and fair assessments to measure the level of competence of individuals in different university courses. With the adoption of higher education institutions for e-learning, the need arises to assess the learning of students that provides them with a reliable electronic educational evaluation. In return, this would lead to the development of the teaching and learning process. The evaluation of the electronic test includes two dimensions: the first deals with the content of the test and its characteristics, and the second deals with the way of displaying it electronically (Liguori & Winkler, 2020).

Distance learning has embraced many changes in the educational structure, means, programs, and decisions, which is based on a philosophy that calls for the liberalization of education from restrictions. Also, it calls for the principle of equal opportunities and broadening learners' education, no matter how old they are. Distance learning is endowed with unlimited boundaries of space, time, content, testing, and attendance by using technical resources. Thus, the opportunity for education is provided for people who cannot access the traditional education system due to the economic, geographical, social, or vocational situation. The success of education depends on the foundations of the university's readiness, the willingness of faculty members, and the extent of their possession of competencies necessary for this (Mahruf & Shohel, 2012).

The researchers also believe that the readiness of the learners themselves and their possession of the essential competencies enable them to deal with technology is vital for the success of the distance learning process and that

the availability of the necessary equipment for the various telecommunications companies to be in a fully operational capacity, especially in emergency conditions such as the Corona pandemic (COVID-19) to which the world is exposed in this period to occupy distance learning a viable alternative to campus-based education (Dhawan, 2020).

It is a well-known fact that many challenges face faculty members in teaching distance learning such as financial, administrative challenges, professional challenges, evaluation, and planning of e-learning. Lack of awareness about distance learning is a factor that contributes to impeding its implementation completely and effectively, such as the reluctance of some faculty members for employing this method in education. The reason behind this is the need for extra effort and preparation to enable them to deal with this modern system (Gamage, Sliva, & Gunawardhana, 2020).

The emergence of the pandemic of Corona urged the quick implementation of remote teaching among university students in all countries of the world, including the Arab Amman University, this study came to evaluate the experience of distance teaching using the Zoom platform that was approved by the university for distance learning. In addition, it helped to reveal the degree of satisfaction among university students and the obstacles they encountered during this new experiment that started in the middle of March 2020 (Pace, 2020).

Not only these new instrument and techniques such as the idea of e-learning are enriching the courses, but also the instructors play a significant role in distance learning. As a result, students believe that these courses are satisfying their level of education. In the 21st century, information and communication technology had a sudden increase in the use of digital devices for various educational programs. Basak, Wotto, and Bélanger (2018) analyze the existing literature on e-learning (electronic learning), m-learning (mobile learning), and d-learning (digital learning). They explained the similarities and differences between them. Students can obtain various texts, statistics, audios, and videos, where interactions are done through hyperlinks and online inquiries (Chen, 2010).

Statement of the Problem

The importance of the current study comes from its topic, novelty, and its seriousness, as this study seeks to construct a scale to measure the students' attitudes toward distance learning. Nowadays, we find most universities use what are called "Learning Management Systems" as part of their educational system, but in light of this pandemic, many different electronic platforms have also been used, including the Zoom platform or (Microsoft Teams), and other different applications, whether in education or conducting student assessments. All of this led to a major challenge at the level of students and the teaching staff in dealing with technology as the only option to complete the educational process.

Objectives and Questions of the Study

This study aims at constructing an attitudes scale towards distance learning with acceptable psychometric properties and investigating the attitudes of students towards the first experience of implementing remote teaching through the Zoom platform. It is also an attempt to unfold the factors that contribute to the general attitudes and to give some recommendations to help overcome them. To achieve the objectives mentioned above, the study attempted to answer the following questions:

1. What are the implications of the validity of the student attitudes scale towards distance learning?
2. What are the indications of the reliability of the student attitudes scale towards distance learning?
3. What is the level of student attitudes towards distance learning?
4. Are there statistically significant differences at ($\alpha = 0.05$) between the arithmetic mean of student attitudes toward distance learning attributed to faculty and gender?

Significance of the Study

The importance of the study stems from constructing a scale with good psychometric properties that researchers can use in their future researches. Also, this may provide feedback to decision-makers at the university to reveal the distance learning challenges facing them. The outcomes will help students and administrative in taking decisions concerning these challenges and how to overcome them to implement a successful e-learning system at the university.

Procedural Definitions

Distance learning: Learning which is based on the use of computers and the Internet, with a remote place to teach educational content to learners through communication between the learner and the teacher, and between the learner

and the educational content in an interactive way that enables him to learn simultaneously or consecutively.

Attitudes: Attitude refers to a set of emotions, beliefs, and behaviors toward a particular object, person, thing, or event, often result from experience or upbringing, also they may have a strong impact over person behavior.

LITERATURE REVIEW

Several factors can affect student perceptions of learning experiences and identify the value of a course. Students' achievements in online instruction reflect to what extent they have benefited from the given course.

Sadeghi (2019) explained how the improvement in technology caused the demand for innovative ways of delivering education. Thus, there are changes in the learning and teaching methods. Furthermore, choosing the style of learning depends mainly on the required qualifications for the learners where the researcher extensively explained the history, theories, advantages and disadvantages of distance learning.

Unger and Meiran (2020) performed a study to examine the attitudes of undergraduate students towards moving quickly to a fully online learning environment during the Coronavirus pandemic. The study sample consisted of 82 students of Wingate University, North Carolina undergraduate students. The findings showed there is a consensus among students' responses that distance learning would not be so effective as traditional learning which had a significant score (92%). Moreover, numerous students highlighted the misleading on COVID-19 information in media (97%), on the other, the student perception of being well informed from official news media hand significant different from social media. Several students (76%) explained their urge to finish the online course as fast as they could due to their anxiety and worry. Besides, around (84%) of students discussed disease transmission actively, yet only (60%) felt well prepared for emergencies. Accordingly, students felt that taking preventative measures should be based on good science and medical knowledge.

Mirahmadizadeh et al. (2020) carried out a study aimed at evaluating students attitude and emotions towards the sudden closure of schools during the COVID-19 pandemic, study sample consisted of (20,697) participants (70.3%) of them were females, the findings demonstrated a satisfactory level of students emotions regarding schools and education during the closure of schools and institutions.

Valantinaite and Paciauskien (2020) performed a study aimed to highlight the findings of a study on favorable and unfavorable factors of using online learning environments in the study process as a digital learning strategy to advance education for continual development. The study sample was 106 secondary school students. Favorable factors of using an online learning environment identified by students at the beginning of the quasi-experiment were grouped in five categories: material resources/base; teacher personality; student personality, information presentation, and enhancement the accessibility at the institutional level. The participants emphasized other favourable factors: continuous uploading of materials, the convenience of use, and the promotion of online learning environments for studies in all subjects towards the end of the project.

Bray, Aoki, and Dlugosh (2008) conducted a study on Japanese distance learning satisfaction. The students are allowed to complete all course requirements for a university degree via online distance learning. The results of the questionnaire revealed that students are satisfied with learning considering five important factors; teacher interaction, content interaction, student interaction, computer interaction, and student autonomy as well as students who were good at using computers. Moreover, in the American Education Conference in 1996, Distance Learning was portrayed as a system or process connecting the various learning resources and learners (Lewis, 2000).

Another study accomplished by Isik, Karakis, and Güler (2010) where they examined the postgraduate students attitudes towards Web-Based Distance Learning (WBDL). The questionnaire and demographic survey were applied to (64) postgraduate students at Gazi University. Results showed generally positive attitudes towards distance learning. Females showed a more positive attitude than males. Although students felt bored while studying on the web, they found themselves more comfortable in distance learning and distance learning was more efficient than traditional learning.

Kuo, Walker, Belland, and Schroder (2013) executed a study aimed at predicting student satisfaction in online learning at a Western University, the study sample consisted of all undergraduate and graduate students enrolled in summer online courses at the College of Education at Western University. An online survey was conducted for these students, the results show that the learner-teacher interaction, the learners interaction - the learning content, and the self-efficacy of the Internet were good indicators of student satisfaction, and the strongest indicator was the learners interaction with the learning content which confirms the importance of interaction in online learning. However,

the interactions between students Self-organized learning did not contribute to achieving student satisfaction. The results revealed a significant impact of gender and class level on the learner-learner interaction, and the impact of time spent each week on the Internet was largely influencing the Internet self-efficacy and self-regulation. Based on these outcomes, teachers and course designers should pay attention to the content organization for its significance in achieving student satisfaction, encouraging students to interact and ask questions during interaction online.

Students' attitude is considered as a long-lasting and reliable psychological response to objects. The questionnaire of Distance Learning Attitudes of students in this study, therefore, refers to the research aspects proposed by [Simonson, Smaldino, Albright, and Zvacek \(1999\)](#).

[Hanson and Maushak \(1996\)](#) and [Simonson \(2002\)](#) have presented assessments of distance learning literature tackling research on and about distance learning. Several outcomes were given by Hanson and Maushak concerning distance learning. They suggest that both traditional and distance learning are beneficial regarding learner outcomes. Generally, students seem to have positive attitudes toward distance learning than traditional learners. Moreover, much research confirms that distance learning is an effective method for teaching and learning.

Studies on the effectiveness of online language teaching on the advancedlevel online Spanish grammar course showed great improvement of the online learning which is indeed equivalent to that shown in the face-to-face teaching ([Enkin & Mejías-Bikandi, 2017](#)).

This leads us to autonomy in learning. Autonomy is a critical factor of self-learning which motivates learners for distance learning students. Students begin their first step toward lifelong self-learners, as they are responsible for their learning. For this reason, autonomy has great importance in distance learning ([Firat, 2016](#); [Jacobs, Renandya, & Power, 2016](#)). According to [Zimmerman \(2002\)](#), learner autonomy (independence) is a major role in the e-learning environments success where learners take responsibility for their learning. [Lynch and Dembo \(2004\)](#) agreed that without autonomy learners cannot be successful as it is a crucial factor for online distance learning. Nevertheless, [Zigerell \(1984\)](#) mentioned how it has become easy with modern communications technologies to link educational institutions to homes, work-sites, and community centers that have made adult education a matter of national policy.

There is a massive potential for widening access to higher education and increasing the variety of student populations who anticipated informal distance learning as online technologies provide opportunities to learn anywhere, anytime from anyone ([Traxler, 2018](#)). He added that new technologies facilitated greater collaboration at two levels; locally and globally. Due to the development of technology, there is an increase in using online and distance learning approaches at universities and colleges. This enabled them to compete in more distant markets ([Traxler, 2018](#)).

In the same vein, [Liu and Yen \(2014\)](#) explained how the improvement of computers in the past two decades has resulted in many changes in the education system. The Ministry of Education and colleges sought great attention to the computer hardware and platforms which resulted in the development of Distance Learning. The research was conducted on 472 college students in the Department of Public Administration. The questionnaire survey findings show that students seem to have significantly positive effects on Curriculum Instruction and management in learning effectiveness as well as on Technological Media in learning effectiveness.

[Williams et al. \(1998\)](#) clarified some facts about the importance of distance learning for governments. Unfortunately, many countries such as America, France, and China have a large number of students with limited universities or financial shortages. Therefore, in the late 1990s, distance learning became an excellent solution. Around 30 million students, mostly adults, enrolled in distance learning programs worldwide. It is, nonetheless, a new, vibrant, and rapidly developing field of study.

"Traditionally, governments have introduced distance education provision to: increase access to learning and training opportunity; provide increased opportunities for updating, retraining, and personal enrichment; improve the cost-effectiveness of educational resources; support the quality and variety of existing educational structures; enhance and consolidate capacity."([UNESCO, 2002](#)).

STUDY PROCEDURES AND METHODOLOGY

Methodology

Study Methodology

A descriptive analytical approach has been used for its suitability for the purposes of this study.

Population of the Study

The study population consists of all students of Amman Arab University who are enrolled in master's and bachelor's programs in all the faculties, they are 2130 male and female students for the academic year (2019/2020).

Sampling Procedures

The sample of the study consisted of 731 male and female students of the graduate and undergraduate student community at Amman Arab University, where the sample was chosen in an accessible way by sending the distant learning attitude scale link to the faculty members of the university, concerning the faculty and gender variable as shown in the Table 1:

Table 1 *The Study Sample Individuals According to Gender, Faculty, and Academic Program Variables*

Variable	Scientific	Humanistic
Faculty	428	303
Total		731
Variable	Male	Female
Gender	388	343
Total		731

Study Instruments

After identifying the attitudes towards distance learning concept by benefitting from the previous literature such as Unger and Meiran (2020) and Valantinaite and Paciauskien (2020). The researchers wrote 50 items taking into consideration all the criteria emphasized by Shrigley (1983). The researchers used a five-pointer Likert scale; five points to (strongly agree), four points to (agree), three points to (neutral), two points to (disagree), and one point to (strongly disagree).

Validity and Reliability of the Test

To ensure the validity of the attitudes scale the researchers have done the following:

First: Content validity: The content validity of the scale was verified by presenting it to a group of experts in the English language, measurement, evaluation, curricula, and teaching methods. The number was 9 experts, and adjustments were made in light of the comments received from the experts so that amendments to the items were made by adding or deleting until the scale reached its final version of 45 items.

Second: Indicators of construct validity: The Indicators of construct validity are verified by finding the correlation coefficients of each item with the total degree of the scale. The results show that the values of coefficients correlation are higher than (0.30), which indicates that the test has adequate constructive validity.

Third: The reliability of the study tool: The reliability of the study instrument was verified in two ways:

- Test-retest procedure and Cronbach alpha: The scale was applied to an exploratory sample consisting of 30 male and female students who are not included in the study sample, and after two weeks it was re-applied, and the correlation coefficient between the two applications was calculated as (0.83), which is suitable for the current study, as the internal consistency of the Cronbach's Alpha was calculated as its value reached (0.89). This indicates the stability of the scale.

Forth: Correction of the study instrument: The Likert (five gradients) scale is used as follows; five The Likert (five gradients) scale is used as follows: five points to (strongly agree) four points to (agree), three points to (neutral), two points to (disagree), and one point to (strongly disagree).

Evaluating the arithmetic averages was through the following formula: (the highest value in the gradient - the lowest value) / 3(5-1) / 3 = 1.33. Thus, the categories are as follows: From (1- 2.33) is low; (2.34 - 3.67) moderate; (3.68 - 5) high.

Fifth: Statistical processing: The statistical tests used for this study are Arithmetic means, and standard deviations, Correlation coefficients, Exploratory factor analysis of the first order using orthogonal axes. Also, the Standard measurement error method is used as a stability indicator.

Limitations of the Study

This study was restricted to Amman Arab University students for the second semester of the academic year (2019/2020) - The results of this study depend on the validity and reliability of this study tool.

RESULTS AND DISCUSSION

The first question: What are the implications of the validity of the student attitudes scale towards distance learning?

To answer this question, indicators of construction validity were extracted, that is, the correlation of items with the total score and Table 1 illustrates the following:

First: Construction Validity

The validity indicators of the building are verified by finding the correlation of the items with the overall scale as shown in Table 2.

Table 2 Item Correlation Coefficients Values With the Overall Scale

Item No.	Correlation Coefficient	Item No.	Correlation Coefficient	Item No.	Correlation Coefficient
1	0.12	16	0.48**	31	0.62**
2	0.60**	17	0.57**	32	0.71**
3	0.59**	18	0.63**	33	0.48**
4	0.45**	19	0.61**	34	0.47**
5	0.50**	20	0.46**	35	0.51**
6	0.49**	21	0.56**	36	0.42**
7	0.52**	22	0.49**	37	0.46**
8	0.46**	23	0.63**	38	0.46**
9	0.45**	24	0.61**	39	0.12
10	0.62**	25	0.57**	40	0.52**
11	0.43**	26	0.63**	41	0.51**
12	0.42**	27	0.40**	42	0.09**
13	0.10	28	0.47**	43	0.45**
14	0.60**	29	0.56**	44	0.55**
15	0.52**	30	0.54**	45	0.03-

** $\alpha = (0.01)$ * $\alpha = (0.05)$

The results of Table 2 reveal that the values of the correlation coefficient are all positive because they are more than (0.30) and statistically significant at the level ($\alpha = 0.01$) except for five item which are (1, 45, 13, 42, 39).

Second: Factor Analysis Validity

The validity of the overall scale is verified by conducting an exploratory factor analysis of the highest degree over the sample as a whole using the principal component method for the responses of individuals to the test items, and carrying out the process is using Varimax Rotation for factors for which the Eigenvalues was greater than (1), also normality assumption was investigated through using a Kolmogorov-Simonov test its value reached (0.160) with a significance level (0.080), this indicates that the responses on the scale are distributed normally, then Eigen Values and explained Variance were calculated for each factor, as Table 3 shows.

Table 3 Eigen Values , Explained Variance, Cumulative Explained Variance for the Factors Explaining the Performance on the Attitudes

Factors	Latent Root	Ration Contrast Explanation	Cumulative Ratio Contrast Explanation
1	19.245	48.113	48.113
2	3.031	7.575	55.690
3	1.075	2.688	58.378
4	0.760	1.899	60.278

It is clear from Table 3 results that there are only three factors whose Eigenvalues exceed (1). The Eigenvalue of the first factor reached 19.245% and explained 48.113% in the total variance on the attitude scale performance. The Eigenvalue of the second factor reached 3.031 and explained 7.575% in the variance on the scale. It is noted from the results of Table 2 that the ratio of the first Eigenvalue on the second exceeds 2, which means that this scale measures a single trait.

The following figure 1 shows the graphical representation (Scree plot).

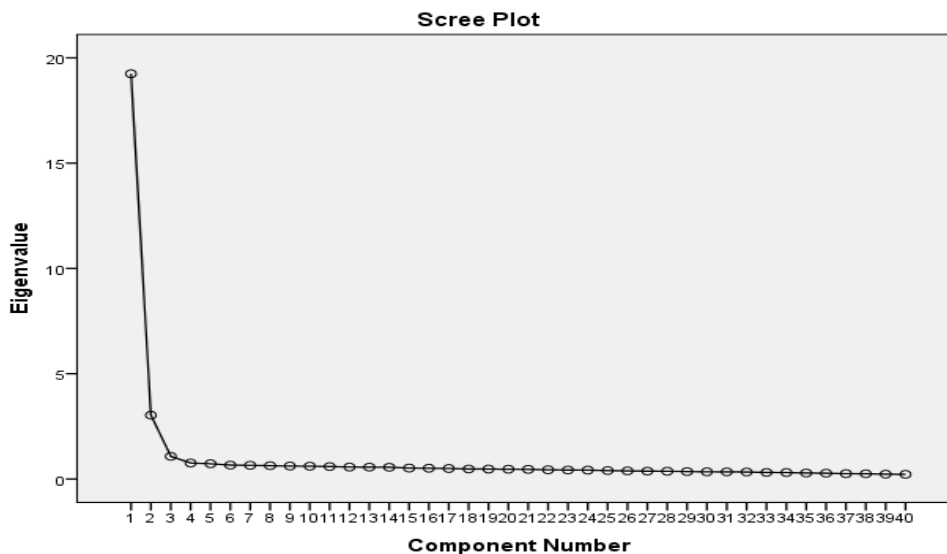


Figure 1 Graphical Representation of the Values of the Eigenvalues of the Distance Learning Attitudes Scale

Figure 1 shows the factors with the Eigenvalues that explain the variation in performance on the distance e-learning attitude scale. The first factor Eigenvalue is larger if compared to the second eigenvalue. Unexpectedly, the second factor has a slight shift in the curve, which is observed where it remained close to the rest of the dependencies. Therefore, it could be inferred that the availability of a one-dimensional trait of performance on this scale is the dominance of the first factor.

The second question: What are the indications of the reliability of the student attitudes scale towards distance learning?

The researchers verified the stability coefficients by the following two methods:

- First, To achieve internal consistency, the Alpha Cronbach's equation is used. It is extracted on the main sample ($N = 651$) and its value 0.87 is high which in return suitable for the current study.
- Stability using the mid-point segmentation: Its value is 0.84, and it is considered a suitable value for the purposes of this study. Moreover, standard measurement error was found for each of the total degrees, as the standard error is used as an indicator of stability, its value has reached 0.005 which indicates a high and suitable stability factor.

The third question: What is the level of student attitudes towards distance learning?

To answer this question, arithmetic means and standard deviations are extracted from the items of the distance learning attitude scale as seen in Table 4.

Table 4 Arithmetic Means and Standard Deviations of the Student Attitude Toward Distance Learning Ranked in Descending Order

Sr.	Item	Mean	SD
40	The timing of the lectures was very suitable for me.	4.39	1.10
2	Distance learning gives me the courage to participate in the lecture	4.37	1.11
7	The available educational material is sufficient for the distance learning system	4.29	1.24
6	Distance learning helps the learner to develop himself	4.27	1.11
14	Distance learning enabled me to interact with the lecturer	4.24	1.09
4	Sufficient information has been provided for the use of the educational material website	4.15	1.19
11	Distance learning takes into account individual differences	4.12	1.00
12	Distance learning saves time and effort	4.11	1.31
39	The teacher has used varied strategies to improve student achievement	4.11	1.20
37	My concentration during distance learning is better than traditional learning	4.08	1.15
9	Distant learning teaching is not very different from the classroom teaching	4.04	1.16
20	I can send educational materials without any obstacles	3.98	1.22
8	The content displayed is interesting and not boring	3.92	1.34
29	I had a problem hearing the lecturer's voice	3.90	1.28
36	I can receive educational materials without any obstacles	3.90	1.20
35	I make better use of my time with distance learning	3.80	1.19
30	I don't feel that I have an educational atmosphere during distance learning lecture	3.73	1.39
33	The teacher answers any questions the students have	3.73	1.71
26	I am having difficulty following up on distance learning lectures because of the surrounding distractions	3.72	1.52
38	The teacher does his/her best to keep the students motivated during distance learning	3.71	1.19
23	My evaluation is done continuously during the education process	3.64	1.50
17	I face obstacles in distance learning	3.62	1.00
1	I can access the educational material easily	3.61	1.54
19	I can easily communicate with my teacher	3.55	1.72
13	Distance learning helped me to understand the educational material	3.52	1.65
25	Evaluation takes place in a variety of ways	3.40	1.56
27	I feel comfortable with distance learning lectures	3.40	1.43
32	I can take any notes during the lecture	3.33	1.32
3	I can attend the lecture without interruption	3.30	1.73
5	There are those who help in case of problems by entering the distance learning system	3.29	1.69
24	The assessment methods used are appropriate	3.27	0.91
21	I can focus more on distance learning than classroom lecture	3.18	1.60
31	The teacher adapts effectively to distance learning	3.18	1.76
15	Distance learning has improved my thinking skills	3.16	1.40
18	The teacher provides us with a recording of the educational material	3.14	1.55
16	I feel comfortable with the distance learning experience	3.11	1.42
34	I believe that the distance learning tests evaluate my cognitive achievement and skills well	2.94	1.71
10	There are exercises and assignments that help me learn	2.88	1.55
28	Internet outages often occur	2.80	1.38
22	Distance learning keeps up with electronic programs and applications while implementing the content.	2.54	1.77
	Total	3.64	0.95

A closer look at Table 4, the findings reveal that the student attitudes toward distance education were moderate since the arithmetic average reached 3.64 with a standard deviation of 0.95. The arithmetic mean has various levels: high, moderate, and low levels as it ranges between 4.39 - 2.35, this may be attributed to the good preparation that the Amman Arab University had done and the good training for the faculty members on using electronic learning platforms such as (ZOOM). This result agreed with the findings of Mirahmadizadeh et al. (2020) study which demonstrated a satisfactory level of students' emotions regarding schools and education during their lockdown. Relatively this result also aligned with the outcomes of Unger and Meiran (2020) study clarified the wide range of responses that students displayed, by expressing their high anxiety toward online learning, disappointment regarding graduation ceremony, and online learning is different from in-class standard learning.

Fourth question: Are there statistically significant differences at ($\alpha = 0.05$) between the arithmetic mean of student attitudes towards distance learning attributed to gender and faculty?

To answer this question, the means, standard deviations for student attitude toward distance learning were extracted, and Table 5 shows that.

Table 5 Arithmetic Means for Student Attitude Toward Distance Learning According to Gender and Faculty

Gender	Faculty	Mean	Std. Deviation	N
Male	Human	3.62	1.01	139
	Scientific	3.51	0.90	204
	Total	3.55	0.95	343
Female	Human	3.68	0.94	164
	Scientific	3.73	0.97	224
	Total	3.71	0.96	388
Total	Human	3.65	0.97	303
	Scientific	3.62	0.94	428
	Total	3.64	0.95	731

There is a notable difference between the arithmetic means of the student attitude toward distance learning and to figure out if these differences are statistically significant, the researchers analyzed the data by using the two-way ANOVA as seen in Table 6 below.

Table 6 The Two-Way ANOVA Analysis of Student Attitude Toward Distance Learning

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
gender	4.429	1	4.429	4.877	0.028
Faculty	0.131	1	0.131	0.144	0.705
Error	661.105	728	0.908		
Total	10330.850	731			
Corrected Total	665.693	730			

Interestingly, the results of Table 6 demonstrate no statistically significant differences between the mathematical averages of the level of e-learning quality according to the faculty, while there were statistically significant differences according to gender as the value of "F" (4.877) at the level of ($\alpha = 0.05$) favored to the female students. This may be attributed to the fact that female students may find distance learning more convenient for them as the majority of them are workers and also married students with families and children, and staying at home is very suitable for them. The result of this study is compatible with the result of Isik et al. (2010) where females have a more positive attitude towards distance learning. However, males are more satisfied with distance learning as Bray et al. (2008) have explained in their study. Several factors affect the process of learning such as student autonomy, the relation between the student and

teacher as well as computer interaction. Thus, male students enjoy this kind of competition as it tackles their sense of independence.

CONCLUSION

Distance learning has limitless opportunities soon. Undoubtedly, distance learning programs and courses have become an essential way of teaching and will increase in the coming years. The results confirm that distance learning can be as effective as traditional classroom learning under certain situations, however, e-learning cannot replace traditional classroom learning. Like any kind of educational program, distance learning comes with many advantages and disadvantages. With the convenience of information technology, students at Amman Arab University had a successful experience in the second semester of the Academic year (2019-2020) where it could be deduced from their positive attitude toward distance learning. Moreover, teachers' encouragement to students played an important role in students learning step by step and enhancing their autonomy learning as well as students are motivated to interact through voice and images.

RECOMMENDATIONS

Based on the analysis of the findings of the current study, the researchers suggest the following recommendations to be taken into consideration in the future:

- Reducing the obstacles which impede the access to the e-learning system and learning of the students.
- Encouraging teachers to apply new teaching methodologies by implementing distance learning effectively where students can learn in a better environment.

LIMITATIONS

The generalizing of the study findings may be limited due to sample properties which are limited to private university students where private universities may have fewer students more facilities than public universities in Jordan. Another limitation can be the web-based approach that was used for this survey, due to COVID-19.

Future studies are suggested to be conducted using the proposed scale, which had a very acceptable psychometric property, as the findings of this study proved. Furthermore, the researchers recommended conducting similar researches using different samples.

Conducting more studies regarding other variables to see to what extent the results obtained here match those obtained from other universities to achieve a more comprehensive view of distance learning among various countries and universities.

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