Preferences and Opinions of the University of Jeddah Students Towards Electronic Exams

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Abstract

This research studied the preferences and opinions of the University of Jeddah students towards electronic exams, also reviewed the statistical differences in opinions towards electronic exams between students according to the factors of the study, gender, major, GPA, and educational level. The method of the research is the descriptive-analytical method. This study focuses on many aspects and classifications that would measure the ability to adopt electronic exams instead of paper exams. The sample consists of (1084) students at the University of Jeddah. The sample was selected from different faculties majoring in humanities and sciences. The researchers used an electronic questionnaire seeking students' opinions towards electronic exams to collect the data analyzed using SPSS software. The results indicated that the preferences of the University of Jeddah students towards electronic exams were positive. There are no significant statistical differences in preferences and opinions towards electronic exams among students according to gender, major, GPA, and educational level. Eventually, the researchers presented some recommendations that encourage adopting electronic exams and keeping up with a continuous improvement in the educational process.

Keywords
electronic exam, opinion, preferences, factors

1. Introduction

1.1 Background

The technical development, the explosion of knowledge, and the tremendous acceleration in communication technologies have affected the methods and tools of student evaluation and electronic exams that depend on the computer. They have also appeared in their design, construction, presentation, management, and correction, giving comprehensive reports of students' educational results and the extent of their scientific progress. Electronic exams are best known as a technique that allows students to take exams using computers, either on the Internet or through a

private network, instead of written paper exams. In recent years, there has been an increasing interest in using electronic exams in Saudi Arabia. Therefore, Saudi universities developed E-exams for all courses in different faculties to replace paper-based exams. This study was concerned with measuring many aspects and classifications that would measure the ability to adopt electronic exams instead of paper exams. Nowadays, the application of electronic exams has become an urgent need considering the current circumstances. In addition to the trend of universities towards electronic education, the University of Jeddah is one of the first universities to apply electronic exams. As the reliability and suitability of electronic exams, different academic subjects have a significant impact on the process of adopting their exams because the nature of the courses varies from one college to another, which would recognize the need to develop and build a reliable basis in the educational process to ensure the validity of the assessment that would achieve equality among the students. Considering the importance of the technical aspect and improving it to ensure the security process for the progress of the exams and fill the gaps to reduce cheating and academic fraud.

1.2 Overview of Research Problem and Area

The orientation of this study lies in shedding light in general on electronic exams and considering the educational and technical standards to ensure their quality and achieving the desired goals. Conducting statistical analysis on quantitative data would help in developing and improving the educational process. Data collected from the electronic survey discusses the students' preferences and opinions toward electronic exams regarding the adoption of electronic exams.

1.3 Problem Statement

This study concerns with investigating the preferences and opinions of the University of Jeddah students and the relationship of preferences to several variables such as gender, major, GPA, and educational level. To know the extent of the impact of these variables on students' opinions about the electronic exam. The generalization of electronic exams at the University of Jeddah is a new approach in the educational process, and therefore many questions arise whether adopting this approach is feasible in evaluating students. The delinquent is represented in the subsequent questions. The general characteristic of the opinions of University of Jeddah students towards the electronic exams is that there are statistically noteworthy dissimilarities in the direction towards the electronic examination according to the variables of taking the electronic exams.

1.4 Project Aims, Objectives and Significance

This research intends to explore and evaluate the preferences and opinions of University of Jeddah students toward electronic exams. It is also identifying the obstacles facing the application of electronic exams. Since the University of Jeddah tends to be up to date with technology improvements. Therefore, the foremost tenacity of the study was to explore and evaluate the responses of the students who participated throughout the electronic survey and measuring the results of the analysis. This paper study the preferences towards the electronic exam among students at the University of Jeddah, detect the various aspects and frameworks that constitute a cognitive addition. It also find out the students' preferences towards the electronic exams and evaluating the extent to which their acceptance of this type of examination can help develop recommendations and proposals that direct the university to implement this program.

2. Literature Review

The study was about the attitudes of faculty members and students from Education College in the University of Najran towards the electronic exam: a prospective study (research published in the Journal of the Gulf and Arabian Peninsula Studies, No. 163, volume 32, October 2016, pages 17 – 51). The study intended to identify the defiance of members of the faculty and students at the University of Najran concerning electronic exams, and the research was conducted on a sample of 53 faculty members who hold a doctorate and 218 students from the second and sixth level in the Education College of the University of Najran. The researchers prepared a questionnaire to know their attitudes towards electronic exams. The researchers adopted the descriptive approach, given the novelty of the experiment in such studies. The study results showed that the cognitive attitudes were positive among the faculty members, while the attitudes were somewhat positive among the students. Emotional and behavioral attitudes were somewhat positive among the members of the faculty and the students. In conjunction with that, there were statistically considerable variances in the emotional field of scholars attributed to the academic level at the sixth level and statistically significant differences in the field of knowledge between facility associates and students.

A study for Al-Khazzi, Fahad Abdullah, (2011) of the consequence of some variables on the enactment of 11th-grade students in Kuwaiti schools in electronic exams (research published in the Journal of the Union of Arab Universities for Education and Psychology, No. 3, volume 14, May 2011, pages 142 – 175). This study, which was applied to 521 male and female 11th-grade students in general education schools in Kuwait, aimed to test the effect of some gender variables, specialization, own computer, nature of scientific material, and the ability to review and change the answers to performance in electronic exams. The researcher used the correlative descriptive method, a type of descriptive method, where data were collected by three achievement tests: Arabic, English, and statistics. The study results showed no differences between the results of male and female students in the electronic exam due to the differences in opinions. However, the differences between the students' results depended on the nature of the subject, and the results showed that the performance in theoretical subjects (Arabic and English) were better than the performance in the applied material statistics). That may be because the applied materials need space in the solution, which is not available in electronic environments. The results also showed differences between the results of students who received a sample of the test in which the student can change the answer and students who received a test whose results cannot be altered in favor of the first team.

Akdemir & Oguz, (2008) has shown in his study about Methodological and statistical issues to consider when conducting educational experiments that the equivalence of the paper and electronic exams in students' evaluation. The sample size was 42 students. It was focusing on the effect of gender type on the e-exams result. In addition, Stowell & Bennett, (2010) has shown in his study about Effects of Online Testing on Student Exam Performance and Test Anxiety that that electronic exams can help to alleviate test anxiety for university students. Moreover, that has led to improve the performance and achieve the highest scores. The study sample consisted of 69 students who have taken the two exams: paper and electronic; they have answered surveys to measure how anxious they are in terms of the exam, either paper or electronic.

Francis Osang, (2012) has shown in his study "Electronic Examination in Nigeria, Academic Staff Perspective—Case Study: National Open University of Nigeria (NOUN)" that electronic exams are favored versus pen and paper tests in an open and distance learning setting in Nigeria, and he recommended that the production and usage of the type-examination of essays should be seriously contemplated for law students.

3. Methods

To achieve the study's objectives, which include determining the methodology used in the research study, defining the study population and its sample. Also, its tool in terms of its structure and procedures to verify its validity along with stability. The statistical treatment used in analyzing the results, as follows: descriptive studies target the characteristics of the phenomenon on a report or a position dominated by the recipe selection and rely on collecting facts, analysis, and interpretation to derive their significance and reach through to issuing circulars on the situation or phenomenon studied.The descriptive approach was used, which is considered one of the most critical techniques commonly applied in research since it is regarded as the most appropriate for this study. It describes what an object is, and its interpretation determines the conditions that exist, defines the standard or prevailing practices in it, or every approach related to a specific phenomenon with the intention. Its description and interpretation are descriptive methods. The study community also knows that "all the vocabulary phenomenon studied by the study, and thus the study population is all individuals who are the research study subject.

4. Data Collection

To accomplish the study objectives, the researchers relied on two types of sources to collect data and information, which are as follows: The researchers collected these sources for the study, and the sites available in the method of collecting primary data, depending on the questionnaire that the researchers designed to collect quantitative data related to the society and the subject of the study, as this questionnaire was developed to cover all aspects on which the study hypotheses and objectives. The study sample, which is usually a part of the original research community chosen by the researchers in different ways and includes several original community members due to the importance of applying the study tool well and explaining it by representing the following (Preferences and opinions of the University of Jeddah students towards electronic exams) as a requirement for obtaining a bachelor's degree to meet the objectives of the research study, the researchers prepared a questionnaire about the electronic component that contains (19) paragraphs distributed in two parts. The first part deals with general information about the study

members, and the second part deals with the paragraphs related to identifying their preference for electronic exams. According to Raosoft software that calculates the sample size needed, the sample size is 377 at a population of approximately 20,000 with a margin of error of 5% and a confidence level of 95%. In this study, a random sample of 1084 individuals where collected.

The researchers used suitable statistical methods according to the statistical package of Social Sciences (SPSS), specifically used the following statistical treatments, and then calculate the Pearson correlation coefficient between the degree of each statement and the total degree of the axis to which it belongs to assess the internal consistency of the study performance. Alpha Cronbach coefficient was applied in measuring the internal consistency stability coefficients of the study instrument. The arithmetic mean was determined to know the extent of correlation or decrease in the responses of the study members to all the statements of the primary research variables, knowing that it is beneficial in arranging the expressions conferring to the uppermost arithmetic average. An analysis of single variance (ANOVA) to test the differences in the degree of evaluation of the study sample, to identify their preference for electronic exams attributed to gender, educational level, major, and GPA. A cured test for dimensional comparisons in case of statistical differences. Pearson correlation coefficient was done to calculate the correlation between identifying their preference for electronic exams. To judge the evaluation of the study sample to identify the preference for electronic examinations by the respondents, the following arithmetic mean values were adopted for the responses of the study sample individuals.

Table 1. The axis and the number of paragraphs that follow the field:
Table No. (1) the axis and the number of paragraphs of the second part axis. Identify their preference for electronic exams.

Axis	Number of paragraphs
Preference for electronic exams	18

5. Validity and Reliability of the Data Collection Tool:

The stage of choosing a data collection tool suitable for the study's purpose and community is considered one of the most challenging scientific research stages. The examination usually depends on several foundations when choosing a tool from among the tools available to collect data. One of the most important of these foundations is the reliability and validity of the data provided by the tool. This is because poor validity or reliability of the instrument necessarily leads to poor validity and integrity of the results of the entire study. Therefore, the study is keen to choose the instrument with high reliability and reliability levels. From this standpoint, we have to know the validity and reliability of the data collection tool, which involves the following. Instrument validity means to what degree they scale of measures fulfills the purpose for which it is sought. Therefore, the validity of the data collection tool can be defined as to what degree the tool provides data related to the study problem from the study population. That is, truthfulness means that the scale measures what was put to measure it. It measures the characteristic or phenomenon that was designed to measure it and not measure others. The essential qualities that should also be available in the data collection tool before using it are the property of stability. The importance of measuring the degree of stability of the data collection tool is to determine the ability to obtain correct results whenever you use it in the data collection process. In other words, stability means consistency in the data collected and lack of contradiction, i.e., the measure gives almost the same results if re-applied to the same sample.

Table 2. Pearson correlation coefficient to measure the relationship between recognition items (their preference for electronic exams) with the general degree of the axis to which it belongs.

Axis	the number	Correlation coefficient	The level of statistical significance
Axis: a preference for electronic exams	1	0.551**	0.000
	2	0.488**	0.000
	3	-0.139**-	0.000
	4	0.102**	0.000
	5	0.088**	0.000
	6	0.497**	0.000
	7	0.069*	0.000
	8	0.086**	0.000

	9	0.514**	0.000
	10	0.542**	0.000
	11	0.438**	0.000
	12	0.245**	0.000
	13	0.039	0.000
	14	0.444**	0.000
	15	0.143**	0.000
	16	0.552**	0.000
	17	0.526**	0.000
	18	0.533**	0.000

** Function at the level of 0.01

In the results (Table 2), the researchers find that all the Pearson correlation coefficients (a preference for electronic exams) were statistically significant at the moral level of 0.01 where the minimum transaction -0.139- link as the inverse relationship that illustrates the electronic tests fairer than paper tests to measure the level of students, On the contrary, the upper limit was 0.552. Accordingly, all the above scale paragraphs are internally consistent with the dimension they belong to, proving the sincerity of all the scale's internal consistency.

5.3- Tool Stability:

The reliability of the data collection tool is measured in various ways, including Cronbach Alpha Method: The two coefficients of "Cronbach's Alpha" were used to calculate the stability factor by applying to a random sample of (1084) to perform the study. The researchers obtained the following results: The Cronbach Alpha equation was found by (SPSS) and was (0.441) very close to the correct one. That means that there is very high stability, which makes the study reassuring about the safety of the study tool in data collection and the reliability of the results that the researchers obtain from the reality of the statistical analysis of the data.

Table 3. Cronbach alpha coefficients for the study axis:

Axis	Correlation coefficient
Preference for electronic exams	0.441

Function at the level of **0.01

Through the results of Table (3), the researchers note that the results of the stability coefficients when using alpha ranged from (-0.139- to 0.552), so the researchers conclude that the stability coefficients for the dimensions are excellent, and they can be relied upon. The constant knowledge of the relationship in preference for electronic exams was confirmed by calculating the internal consistency factor of Cronbach Alpha. As in Table No. (4)

Table 4. Coefficients of stability fields of preference for electronic exams

Axis	Stability of Cronbach Alpha
preference for electronic exams	0.441

The results in Table (4) indicate that the reliability coefficient by the Cronbach alpha method is (0.441), which is the value of a statistical function acceptable for the study. During the process of drafting the questionnaire, the researchers took into account its simplicity so that it would be understandable to the respondents and that the degrees of response to it should be according to the five Likert scales, where each paragraph of the questionnaire corresponds to a list bearing the following paragraphs (always, often, sometimes, rarely, never), and for the purpose. The treatment of the study gave each response to each statement in all aspects of the questionnaire a specific value as follows (strongly agree) 5 degrees (agree), 4 degrees (neutral), 3 degrees (disagree), 2 degrees (strongly disagree) one score, and it was adopted. The study is based on the (Liker) five-point Liker scale because it is easy to prepare and apply. It gives the respondent freedom to define their position and the degree of positive or negative for this position in each statement. Many appropriate statistical methods have been used by using statistical packages for social sciences denoted by the symbol (SPSS), and the following is the set of statistical methods that the study used:
From 1 to 1.8 is (strongly disagree), each term has a different axis scale.

Greater than 1.8 to 2.6 represents (disagree), each term with a different axis scale.
Greater than 2.6 to 3.4 represents (neutral), concerning each term with a different scale.
Greater than 3.4 and up to 4.2 represents (agree) for each term with a different scale. Greater than 4.2 and up to 5 represents (strongly agree) for each statement with a different scale.
To know the respondents' attitudes when answering the main study questions, weight was given to each answer as follows.

Table 5. Response weights

Categories	the weight
I strongly Disagree	1
I disagree	2
Neutral	3
I agree	4
I strongly agree	5

To find out the category that the answers belong, the researchers individualized the sample. According to the weighted average value of the sample responses, the degree of availability or the prevailing opinion of the sample is as follows:

Table 6. The weighted average value and the prevailing opinion

Prevailing opinion	Weighted average value
I strongly Disagree	1 to 1.8
I disagree	1.8 to 2.6
Neutral	2.6 to 3.4
I agree	3.4 to 4.2
I strongly agree	4.2 to 5

To study the importance of the different axes, the researchers classified the answers in the following tables and calculated their degree of significance, and arranged them according to this importance, as explained in Chapter Four.

6. Analysis of Results and Findings

This chapter describes the data analysis procedures for the results and findings; so that the study objectives can be obtained, which include tables of factors, questions, and hypotheses regarding each factor and their analysis used for the study.

Table 7. Dissemination of the research samples according to gender.

Gender	Frequency	Percent
Male students	633	58.4
Female students	451	41.6
Total	1084	100.0

In evident from Table (7) percentages and frequencies of the variable part where the type of the study sample, the researchers find that most of the distributions of male students by a percentage of (58.4%) with a number of 633, and female students as a percentage of (41.6%) with a number of 451 in the study sample.

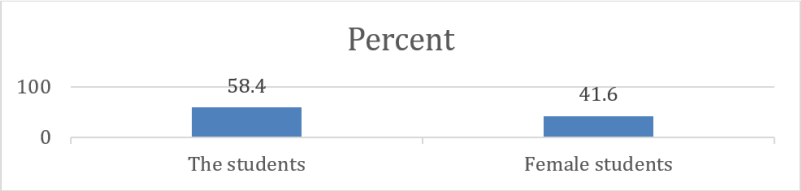

Figure 1. the gender percentage with regards to the number of students

Table 8. The study sample distribution by educational level:

Educational Level	Frequency	Percent
First-year in the major	441	40.7
Second-year in the major	173	16.0
The third year in the major	123	11.3
Fourth-year specialization	214	19.7
Other	89	8.2
Preparatory Year	44	4.1
Total	1084	100.0

It is clear from Table (8) the percentages and frequencies of the academic level variable, as the study sample, the researchers find that the majority of the distributions of the academic level for the first year in the major with a percentage of (40.7%) and their number is 441. The academic level distributions for the fourth year in the specialization with a percentage of (19.7%) and their number is 214. The academic level distributions for the second year in the specialization by a percentage amounted to (16%), equivalent to 173. The academic level distributions for the third year in the specialization with a percentage amounting to (11.3%) and their number is 123. Then other academic distributions with a percentage of (8.2%), the number was 89. Finally, the academic level distributions for the preparatory year with a percentage amounted to (4.1%), and 44 of the sample of study individuals.

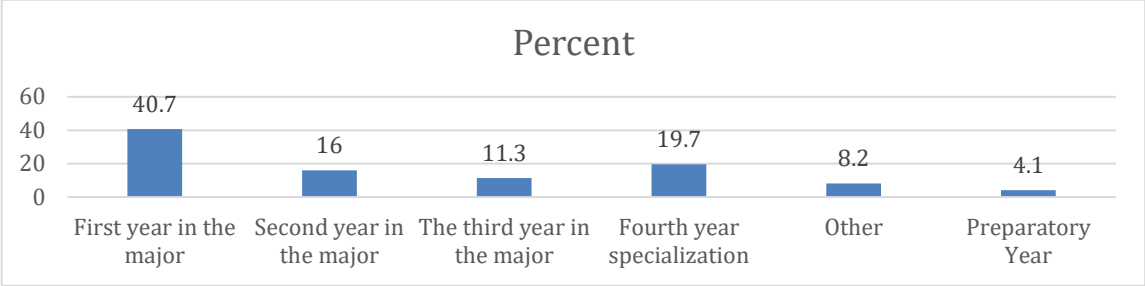

Figure 2. The gender percentage with regards to the number of students over academic years

Table 9. Distribution of the study sample according to the major variable:

Major	Frequency	Percent
Natural Sciences	695	64.1
Human Sciences	389	35.9
Total	1084	100.0

It is clear from Table (9) the percentages and frequencies of the significant variable, as the members of the study sample. The researchers found that most natural sciences major distributions were in a percentage of (64.1%) and the number was 695. The major human sciences distributions were in a percentage of (35.9%), and they were 389 of the study sample.

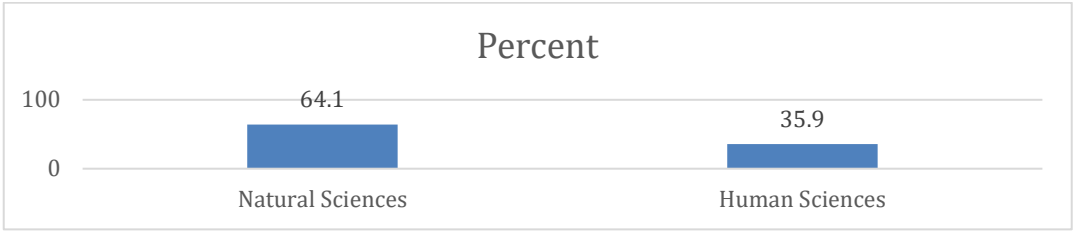

Figure 3. the gender percentage with regards to the number of students in relation to major

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Table 10. Distribution of the study sample according to the GPA variable:

	Frequency	Percent
4.50 - 5.00	501	46.2
3.75 - 4.49	455	42.0
2.75 - 3.74	120	11.1
2.00 - 2.74	8	.7
Total	1084	100.0

It is clear from Table (10) that the percentages and frequencies of the GPA variable as the study sample, the researchers found that the majority of the GPA distributions are (4.50 - 5.00), with a percentage of (46.2%), and their number is 501. The researchers found that the majority of the GPA distributions are (3.75 - 4.49) as a percentage it reached (42%) and their number was 455, and then the researchers find that the majority of average distributions are (3.75 - 4.49) with a percentage of (11.1%) and the number is 120. Finally, the researchers find that most average distributions are (3.75 - 4.49) with a percentage of (0.7%) and 8 From the sample of study individuals.

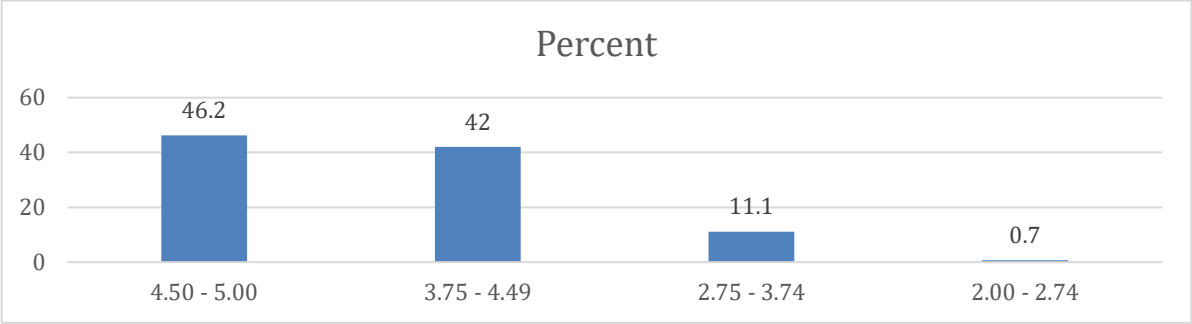

Figure 4. The gender percentage with regards to the number of students: comparing figures

Table 11. Distribution of the study sample according to a variable Have you ever tested an electronic test at the university?

	Frequency	Percent
Yes	1013	93.5
no	71	6.5
Total	1084	100.0

Table (11) shows the percentages and frequencies of a variable. Have you ever tested an electronic test at the university? The researchers found that most of the distributions of their yes answers were a percentage of (93.5%) and their number was 1013. The persons whose answers without their percentage were (6.5%) and were a total of 71 of the study sample. The researchers conclude that most of the distributions of their yes answers were in percentage (93.5%).

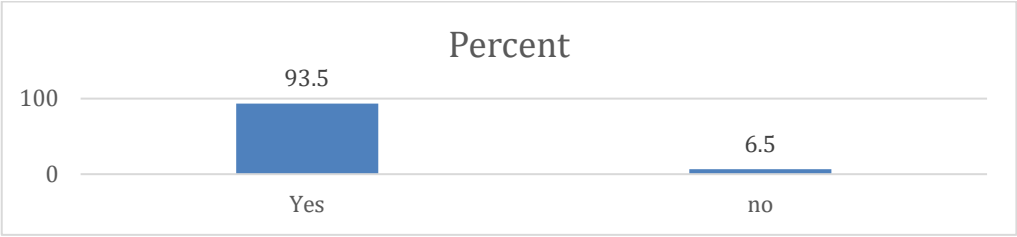

Figure 5. The gender percentage with regards to the number of students: yes/no

Table 12. The standard deviations and the arithmetic averages of the responses from the study sample individuals on the first dimension (their preference for electronic exams) arranged in a descending order according to the arithmetic mean

	Axis	Strongly Disagree		Disagree		Neutral		agree		strongly agree	standard deviation	Arithmetic mean	Rank
		%	T	%	T	%	T	%	T	%	T			
9	Electronic exams reduce the waste of time and effort	3	33	5.7	62	10.2	111	28.5	309	52.5	569	1.041	4.22	1
1	I prefer electronic exams because they are easier to handle.	3.9	42	5.8	63	13.6	147	24	260	52.8	572	1.105	4.16	2
18	I recommend the circulation of electronic exams to replace paper exams.	8	87	6.4	69	13.5	146	18.5	201	53.6	581	1.284	4.03	3
10	One of the electronic exams advantages is that they reduce the effort in answering questions	3	32	11.8	128	13.8	150	23.4	254	48	520	1.165	4.02	4
7	One of the electronic exam risks is that they are subjected to technical failures that may cause them not to be completed.	3.7	40	9.9	107	15.1	164	33.3	361	38	412	1.119	3.92	5
16	Electronic exams enhance my self-learning skills	3	32	7.3	79	22.4	243	34.5	374	32.8	356	1.046	3.87	6
17	MCQ questions in electronic exams encourage guessing the answers more than paper-based exams.	4.9	53	11.8	128	19.6	213	27.3	296	36.3	394	1.195	3.78	7
2	E-exams are fairer than paper exams in measuring students' levels.	6.1	66	12.3	133	27.8	301	18.4	199	35.5	385	1.245	3.65	8
5	The time allowed for answering is short and insufficient in electronic exams.	9	98	16.3	177	18.8	204	24.3	263	31.5	342	1.323	3.53	9
6	Electronic exams cover the various aspects of knowledge of the student than paper-based exams	5.4	59	12.8	139	34.4	373	28.2	306	19.1	207	1.1	3.43	10
14	Electronic exams are suitable for all courses.	10.1	109	20.1	218	18.5	200	20.6	223	30.8	334	1.366	3.42	11
8	One of the electronic exam risks is that they do not fulfill equality of	8	87	20.8	225	22	238	23.9	259	25.4	275	1.281	3.38	12

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	chance when receiving different questions.													
11	In E-exam, the writing is faster when answering essay questions.	10.7	116	16.6	180	22.7	246	24.4	264	25.6	278	1.313	3.38	13
12	The time allowed for answering is enough in electronic exams	9.5	103	21.1	229	27.4	297	25.3	274	16.7	181	1.216	3.19	14
3	The problem with the electronic exam is that it does not suit all courses.	15	163	22	238	17.8	193	23	249	22.2	241	1.385	3.15	15
15	Electronic exams require longer study time than paper-based exams	12.6	137	26.7	289	32.6	353	14.3	155	13.8	150	1.208	2.9	16
4	The questions in electronic exams are more repetitive.	27.2	295	33.4	362	19.3	209	12.7	138	7.4	80	1.218	2.4	17
13	It is easier to cheat in electronic exams compared to paper exams.	29.7	322	27.3	296	26	282	9.4	102	7.6	82	1.214	2.38	18
	average	9.60	1874	16.01	3122	20.86	4070	23.00	4487	30.53	5959	1.21	3.49	

The results in Table (12) indicate that the total arithmetic means in the field of (electronic examinations) arithmetic reached (3.66) with a standard deviation of (1.26), and with a degree that I agree according to Likert's five-year criterion. The arithmetic averages ranged between (3.4-4.2) of the study sample. Phrase No. (9) came first. Electronic exams reduce the waste in time and effort by 569 repeats. I strongly agree 52.5, then 309 repeats and agree 28.5%, then neutral with 111 repetitions and 10.2% percentage, disagree with 62 recurrences, 5.7%, and then strongly disagree with 33 iterations. A percentage of 3% with a mean of (4.22) and the standard deviation was (1.041).

7. Hypothesis

7.1 Student's gender does not affect their preference for electronic exams, with an alpha score of (0.05).
Table No. (13) There are statistically significant differences between the mean scores of male and female students. Differences between the sample averages between male and female students.

Table 13. group statistics in relation to preferences for electronic exams

	The type of bisector	N	Mean	Std. Deviation	T	sig
Preference for electronic exams	Male students	633	62.42	6.438	-2.202-	0.028
	Female students	451	63.33	7.152		

Table No. (13) above shows the differences between male and female students, through the value of the statistical significance level of the (T) test (-2.202-) less than (0.05), which means that there are differences between male and female students at a level of statistical significance (0.05) with the axis (preference for exams) Electronic exams. These differences are valid for female students. Student's gender does not affect their preference for electronic exams, with an alpha score of (0.05). It becomes clear that rejecting the zero hypothesis does not affect the student's gender on their preference for electronic exams, where the score is alpha (0.05), and accepting the alternative hypothesis that says the student's gender affects their preference for electronic exams, where the score is alpha (0.05). 7. 2 Student's major (Humanities / Natural Sciences) does not affect their electronic exam preference with an alpha (0.05).

Table 14. There are statistically significant differences between the average degrees of the humanities and natural sciences. Differences between sample averages between the humanities and the natural sciences

	Major	N	Mean	Std. Deviation	T value	sig
Preference for electronic exams	Natural Sciences	695	62.32	6.737	-3.130-	0.002
	Humanities	389	63.65	6.714		

Table No. (14) above shows the differences between the natural sciences, human sciences, and female students, through the value of the level of statistical significance of the test (T) (-3.130-) less than (0.05), which means that there are differences between the natural sciences and the humanities at a level of statistical significance (0.05) and the axis (their preference for electronic exams).Student's major (Humanities / Natural Sciences) does not affect their electronic exam preference with an alpha (0.05). It becomes clear to us that rejecting the null hypothesis (the student's major (humanities / natural sciences) does not affect their preference for electronic exams with alpha (0.05), where the score is alpha (0.05), and acceptance of the alternative hypothesis that affects their preference for electronic exams with alpha (0.05). 7. 3 Student's GPA does not affect their preference for electronic exams, with an alpha. (0.05). To answer this hypothesis, we follow the following test:

Table 15. Chi-squared test Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	272.141[a]	132	.000
Likelihood Ratio	172.354	132	.011
Linear-by-Linear Association	1.393	1	.238
N of Valid Cases	1084		

a. 120 cells (66.7%) have an expected count less than 5. The minimum expected count is .01.

The researchers find from Table 15 at a degree of freedom 132 and the level of significant significance 0.000 and the value of Ka2 272.141, the next decision becomes clear: There is a significant statistical indication between the average GPA and the electronic test preference between them. As a result, we reject the zero hypothesis, and the student's GPA does not affect their preference for electronic exams, with alpha (0.05). We accept the alternative hypothesis that states that the student's GPA affects their electronic exam preference, with the alpha. (0.05).

Table 16. Illustrates the Kraemer test

	The level of statistical significance	value
Phi test	.000	0.501
Kraemer test	.000	0.289
The number of cases		1084

According to the results that can be witnessed from the Table, there is a weak direct connection between the GPA and the electronic test preference. 7. 4 Student's educational level does not affect their electronic exam preference, as the alpha score is (0.05). To answer this assumption, we follow the following: The differences according to the variables of the student's level of education were as follows. To demonstrate if there were differences in the retorts of the study members as per the difference in the student's educational level variable, the researchers used the "One Way ANOVA" to illuminate the purpose of the variances in the answers of the study individuals in relation with the difference in the student's educational level variable. The results came as the following table illustrates:

Table 17. Results of "One Way ANOVA" for variances in the answers of the study individuals as per to the student's educational level

	ANOVA					
	Contrast sources	Sum of Squares	df	Mean Square	F	Sig.
Preference for electronic exams	Between Groups	2148.771	5	429.754	9.798	.000
	Within Groups	47281.173	1078	43.860		
	Total	49429.944	1083			

Table (17) shows the differences between the mean of the student's educational level with (their preference for electronic exams) for the sample members in the study tool, and through the assessment of the level of significance for the (F) test, which amounted to (9.797) and the value of the level of statistical importance amounted to (0.000) less than (0.05) which means that there are statistically significant differences between the educational level of the student with their preference for electronic examinations of the sample members in the study tool at a level of statistical significance (0.05). It becomes clear to us to reject the zero hypotheses (the educational level of the student does not affect their preference for electronic exams, with the score of alphas (0.05), and acceptance of the alternative hypothesis that affects their preference for electronic exams being alpha (0.05). This is due to statistically significant differences between the student's educational level with their preference for electronic exams, and these differences are valid for the second year of specialization.

Table 18. Explaining the differences between the student's educational level

Multiple Comparisons						
LSD						
(I) school level	**(J) school level**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
The first year in the major	Second-year in the major	4.062*	.594	.000	2.90	5.23
	The third year in the major	.551	.675	.415	-.77-	1.88
	Fourth-year specialization	.584	.552	.290	-.50-	1.67
	Other	1.425	.770	.064	-.09-	2.93
	The preparatory year	.557	1.047	.595	-1.50-	2.61
Second-year in the major	The first year in the major	-4.062-*	.594	.000	-5.23-	-2.90-
	The third year in the major	-3.512-*	.781	.000	-5.04-	-1.98-
	Fourth-year specialization	-3.478-*	.677	.000	-4.81-	-2.15-
	Other	-2.638-*	.864	.002	-4.33-	-.94-
	The preparatory year	-3.505-*	1.118	.002	-5.70-	-1.31-
The third year in the major	The first year in the major	-.551-	.675	.415	-1.88-	.77
	Second-year in the major	3.512*	.781	.000	1.98	5.04
	Fourth-year specialization	.034	.749	.964	-1.44-	1.50
	Other	.874	.922	.343	-.93-	2.68
	The preparatory year	.007	1.163	.995	-2.28-	2.29
Fourth-year specialization	The first year in the major	-.584-	.552	.290	-1.67-	.50
	Second-year in the major	3.478*	.677	.000	2.15	4.81
	The third year in the major	-.034-	.749	.964	-1.50-	1.44
	Other	.840	.835	.315	-.80-	2.48
	The preparatory year	-.027-	1.096	.980	-2.18-	2.12
others	The first year in the major	-1.425-	.770	.064	-2.93-	.09
	Second-year in the major	2.638*	.864	.002	.94	4.33
	The third year in the major	-.874-	.922	.343	-2.68-	.93
	Fourth-year specialization	-.840-	.835	.315	-2.48-	.80
	The preparatory year	-.867-	1.221	.477	-3.26-	1.53
The preparatory year	The first year in the major	-.557-	1.047	.595	-2.61-	1.50
	Second-year in the major	3.505*	1.118	.002	1.31	5.70
	The third year in the major	-.007-	1.163	.995	-2.29-	2.28
	Fourth-year specialization	.027	1.096	.980	-2.12-	2.18
	Other	.867	1.221	.477	-1.53-	3.26
*. The mean difference is significant at the 0.05 level.						

It is clear to us from Table No. (18) above that there are differences between the student's educational level with (their preference for electronic exams) for the sample members in the study tool. These differences between each of the first year in the specialization and the second year in the specialization and the third year in the specialization, and the fourth year in the specialization. The researchers found that the difference is valid for the second year of specialization.

8. Discussions and Recommendations

The study claim was that electronic exams encourage help to alleviate university student's effort and easy handling. The study consisted of a random sample of 1084 individuals. The 1084 students who have taken the two exams: paper and electronic ones have answered the survey to determine how they prefer electronic exams. Furthermore, students prefer electronic exams since they are more accessible and more time efficient. Considering the findings of this study, some functional implications and recommendations are presented here.

- Develop the infrastructure and technology that are suitable for electronic exams to generalize on all courses.
- Recommend the circulation of electronic exams to replace paper exams.
- Enhance security and networking to securely complete exams that used to be an issue and overcome this struggle in the future.
- Provide suitable timing to answer the questions, considering the nature of differences in courses.
- Standardize the level of all exam question forms to achieve equality among students.
- Diversifying questions in electronic exams, including MCQ, true and false, and essay questions to cover the various cognitive aspects of the student.

9. Conclusion and Future Research

9.1 Conclusion

The findings of this study revealed the need for improvement in the implementation of the assessment mechanism regarding exam computerization. This improvement should include the planning and application of practical programs for students and instructors' involvement. The current situation demands administrators, faculty members, and the University of Jeddah eLearning center to take the initial step to involve students through the educational process and continuous improvement in the learning methods. We observed that most participants tend to prefer taking electronic exams instead of paper ones during our journey. It may be wise to first check into the interest of knowing the students' preferences and opinions toward electronic exams through electronic surveys to obtain outcomes that form a clear strategy to build an appropriate infrastructure of electronic exams application. Adopting electronic exams is assumed to have a better exam evaluation, students' comfortability, and environmental sustainability.

9.2 Recommendation for Future Research

The findings of this study revealed the need for answers to many questions related to University of Jeddah students' preferences toward electronic exams. These answers, along with the present study's findings and the previous research, could provide the basis for strong and effective student involvement in higher education. To achieve these answers, the following further research is recommended:

1. A study that investigates the preference of faculty members at the University of Jeddah towards electronic exams.
2. Investigations into the university's students and professors to which the electronic examination system will be applied in the future.
3. A study to examine the differences in students' academic achievement between electronic and paper exams.

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Biography

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.
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