

## University students' evaluation of E-assessment in light of the Coronavirus Pandemic

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### Suggested Citation:

Ayyoub, A. A. & Jabali, O (2021). University students' evaluation of E-assessment in light of the Coronavirus Pandemic. *Cypriot Journal of Educational Science*. 16(4), 1434-1449. <https://doi.org/10.18844/cjes.v16i4.5998>

Received from January 22, 2021; revised from March 15, 2021; accepted from August 11, 2021.  
Selection and peer review under responsibility of Prof. Dr. Huseyin Uzunboylu, Higher Education Planning, Supervision, Accreditation and Coordination Board, Cyprus.

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### Abstract

Educational institutions strive to achieve their purposes mainly assessing students' performance and abilities; they might use traditional types of assessment or they may be forced to apply electronic assessment in certain situations such as those dictated by the current spread of COVID-19 Pandemic. The current study aims at providing insights into the ways and levels of university students' evaluation of the electronic assessment during the global health crisis whether this evaluation is affected by certain demographic variables or not. A 29-item online questionnaire was developed and conducted by the researchers to survey a large sample of university population. A large number of the students (n=582) responded to the survey. The study results show that the level of students' evaluation of e-assessment is moderate. The researchers also find that an interaction between gender and faculty may influence students' evaluation positively and negatively. The implications of the study suggest that educational institutions should consider all types of assessment mainly e-assessment to keep pace with all advancements and evade unexpected circumstances like pandemics.

**Key words:** assessment; Corona Pandemic; e-assessment; e-learning; evaluation; learning; teaching

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## 1. Introduction

One can easily notice that the recent technological advancements have significantly impacted almost all aspects of people's lives mainly communication, health, transportation and, of course, education. All schools and universities everywhere use computers in one way or another. They are used, at least, administratively to keep records of the school; they can also be utilized to promote individual instruction (Suppes, 1972). Computers have also made it possible for students to get information and knowledge outside the boundaries of books and libraries; consequently, education has become easy to access.

With the advent of the internet, the amount of information has more than doubled; students can find a lot of information and interact with as many people as they can. Students can keep large amounts of information, tutorials, videos and lectures in their computers and they can access them anytime, anywhere. Moreover, computers have recently influenced the way students are tested and/or assessed.

### 1.1 Conceptual Framework

Assessment, irrespective of its types, techniques and objectives, has always been a continuous process which entails a lot of things including planning, measuring, analyzing, etc. depending on what is going on in the teaching/learning process (Martell & Calderon, 2005); it also relates to testing and observing learners' performances in an attempt to constantly back influential changes in the way the teaching/learning process takes place (Pachler et al., 2009). Assessment is an integral part to ensure that schools, faculties and universities achieve their goals. Hersh (2004) postulates that assessment serves as a feedback mechanism to enhance the performance of educational institutions. Rudner and Schafer (2002) have stated that assessment encompasses a number of strategies that should be utilized for applying whatever students learn. Kellough and Kellough (1999) argue that assessment may improve students' learning; identify their pros and cons; improve the efficiency of curricula as well as teaching effectiveness; and provide data for future use.

The information technology has significantly enhanced many sectors mainly the education sector for a long time. Since the advent of e-learning and e-assessment in the 1990s, there has been significant development in the teaching/learning process. Nowadays, there is e-learning or e-education which is typically defined as a learning that is facilitated and enhanced by electronic technologies where all teaching, instruct, and assessment are conducted electronically (Buzetto-More & Guy, 2006). E-Learning may be "web-assisted, or classroom learning that is facilitated by using a course website and the World Wide Web; or the mixture of classroom and online instruction known as the hybrid or adjunct model" (Buzetto-More & Alade, 2006, p.116).

Linked to e-learning or e-education is, of course, e-assessment which is introduced to overcome all possible shortcomings, pitfalls, and insufficiencies of traditional assessment. Using technology in the process of assessment has become a reality that ranges from developing exams to storing results (Stodberg, 2012). It is intended for assessing learners' knowledge, skills, and abilities (Bartman et al., 2007; Williams and Wong, 2009); it also aims at creating and managing materials and resources as well as providing feedback (Lahad et al., 2004). E-assessment provides new methods and opportunities for various types of assessment related to various types of knowledge (Bartman et al., 2007; Birenbaum, 2007; Dochy et al, 1999).

## 1.2 Literature review

Online assessment has been tackled by different researchers from different perspectives. Some have highlighted its positive merits and potentials; others have explored the negative aspects and impacts of this type of assessment. However, very few studies have been carried out to investigate the way students look at online assessment. This study aims to fill in this gap.

Electronic assessment helps reduce the load of instructors and students as it is likely to be accessed anytime and anywhere (Dochy et al., 1999). In such an assessment, it is easy for educators and school administrations to gather data, conduct statistical analyses and test results (Douglas, et al., 2016; Guo et al., 2014) and, consequently make good decisions (Dietel et al., 1991). Furthermore, e-assessment can be easily reproduced and utilized again and again as it needs a simple computer or a smart phone and an internet connection. It has made it possible to measure students' outcomes and, instantly, help them get direct and immediate feedback about their performances (Gilbert, Whitelock and Gale, 2011). It is intended to promote authentic assessment as well as facilitate testing (Bennet and Gitomer, 2009). Electronic testing is less cost-effective, easy to handle, administer and score, more reliable and replicable, and sometimes more authentic because the human element is aside while marking students' responses (Wiggins, 1990).

As far as students are concerned, studies have shown that students prefer the electronic assessment (Donovan, Mader, and Shinsky, 2007; Gilbert et al 2011; Llamas-Nistal et al. 2013; Sorensen, 2013; Tubaishat and El-qawasmeh, 2006) due to the fact that they may exert much more control of the tests (Ridgway, McCusker and Pead, 2004); it is easier and faster to use (Alruwais et al., 2018; Eljinini et al., 2012); it also provides them with feedback which helps improve learning (Crews and Curtis, 2010; Gilbert et al, 2011; Ridgway, McCusker and Pead, 2004; Way, 2012). It helps students in remote locations to study and to be assessed in their own areas (Ridgway, McCusker and Pead, 2004; Way, 2012). However, previous literature has reported that the gender of the learner is very likely to impact the online teaching/learning process. Females tend to be hesitant and reluctant in this type of learning and they have been proven to be disadvantaged while males welcome it (Spender, 1995). Females prefer the traditional face-to-face learning or communication (Anderson, 1997) and it is possible for some women to incline towards e-learning if females outnumber their male counterparts.

With respect to instructors, time spent in assessing students' performance is crucial; teachers spend almost the same time (Crews and Curtis, 2010; Donovan, Mader and Shinsky, 2007; Eljinini and Alsamarai, 2012; Gikandi, Morrow and Davis, 2011; Gilbert et al, 2011; Ridgway, McCusker and Pead, 2004; Sorensen, 2013) but it saves money. This kind of assessment improves teachers' feedback (Ridgway, McCusker and Pead, 2004; Way, 2012) and enables the instructor track the performances of large numbers of students (Ellaway and Masters, 2008; Nicol, 2007).

Educational institutions can increase the number of students in each section, consequently; e-assessment may serve these institutions in handling the performance of large classes and thus reduce costs (Donovan, Mader and Shinsky, 2007; Sorensen, 2013). It is also more secure as it entails checking students' identification and password verification (Crews and Curtis, 2010). Finally, e-assessment supports high-level thinking skills like problem-solving and critiquing and facilitates team work projects (Duran, Mihaladiz, & Balliel, 2013; Ridgway, McCusker and Pead, 2004).

On the other hand, e-assessment may face some challenges especially at schools. For instance, some students may be inexperienced in handling computer programs and online

assessment techniques (Way, 2012). Another challenge may relate to computer availability and internet connection (Crews and Curtis, 2010); lack of sufficient and good infrastructure especially in poor countries like Palestine (Crews and Curtis, 2010). It is also possible for some teachers to face problems when they are forced to use e-assessment mainly for the first time. Some instructors may lack experience or they may be unfamiliar with the technology (Jordan and Mitchell, 2009). There is the open-question issue; Ridgway, McCusker and Pead (2004) argue that marking open questions such as explaining and listing items is difficult to handle. Finally, there might be an urgent situation which calls for absence of face-to-face learning and also face-to-face assessment such as the recent novel coronavirus pandemic which has swept over the entire world and resulted in a significant disruption as well as complete closures in all sectors including schools and universities. In such conditions, states and university administrators have been forced to consider some alternative techniques including e-learning and e-assessment.

The second semester at An-Najah University started at the beginning of February, 2019; all the teaching/learning activities including exams were carried out in the university campuses. All of a sudden, and without any prior notice, there was a complete closure of all aspects of life, including schools and universities, not only in Palestine but also globally due to the rapid spread of coronavirus. The university administration decided to close the university and opted for online delivery model for learning, teaching, instruction and assessment. At the beginning, there were a lot of obstacles and hindrances because things had started suddenly; there was no prior planning or preparation for online teaching. The vast majority of academic staff did not have the basics of online teaching or assessing despite the fact that the university has a separate department called the E-Learning Centre which is used to hold seminars and workshops on online teaching and computerized exams.

With respect to students, most of them did not have problems with e-learning as most of them have adequate experience and knowledge of the information technology skills and practices; consequently, they did not object to the notion of online learning. However, a large number of students had certain reservations about the electronic assessment. They raised a number of questions about the electronic assessment and had some misconceptions about it at the beginning. In the end and abiding by the regulations issued by the Palestinian Government, all students were forced to stay home and consequently learn online, and most importantly, sit for computerized exams despite their negative attitudes about this somehow new technique for some of them especially first year students.

The main purpose of this study is to identify university students' evaluation of e-assessment during COVID-19 pandemic. The researchers have set their minds to answer the following two questions: What is the degree of students' evaluation of electronic assessment? Does students' evaluation of the electronic assessment differ according to students' gender, level (academic year), faculty (field of study), and total average?

## **2. Methods**

### **2.1 Research Model**

Ethical approval, i.e., (IRB), was obtained from the University vice president of academic affairs. A descriptive online questionnaire was built to explore the way university students evaluate and perceive the electronic assessment during corona pandemic in the academic year 2019/2020. As the researchers were interested in examining relevant information efficiently and logically, e-assessment as an assessment tool was conceived comprehensively to include any

possible advantages or disadvantages that might be of relevance to instruction and/or education at the university level.

## 2.2 Data Collection Tools

Brainstorming was used through discussions between students and teachers, and through meetings in the media that talk about electronic assessment in light of the coronavirus pandemic. A total of 100 declarative sentence items were built on which a yes or no item pool could be answered, and then they were presented and sent to 40 arbitrators so that they respond based on a scale from 1 to 5. 1 refers to the fact that the sentence is does not relate to the concept or it is very far from the concept while 5 relates to the fact that the sentence measures the concept significantly. The scores of the arbitrators were collected and the correlation between each paragraph and the total was calculated; the paragraphs whose correlation was less than 0.6 were deleted, then the mean scores for the first and last quarters were calculated for rating the paragraphs by the arbitrators. A t-test of two independent samples between the means of the two quarters for each paragraph was calculated, and the paragraphs for which the difference was not statistically significant were deleted simply because the researchers were interested in the paragraphs that are distinguished by high distinction. In the end, 35 high discrimination items that were of high relevance and correlation to the concept of e-assessment were retained.

To ensure the questionnaire validity, factorial validity was calculated using Kaiser-Mayer-Olkin test to ensure that the items are suitable for the exploratory factor analysis; the Test of Sphericity was also calculated using Bartlett's Test. The results are shown in Table 1 below.

Table 1. Sphericity assumption for the study tool

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.955
Bartlett's Test of Sphericity	Approx. Chi-Square	8299.807
	Df	406
	Sig.	.000

To exclude orthogonal items, oblimin rotation was used; through communalities all the items i.e., (9, 10, 11, 24, 29, 34) whose communality degree was less than 0.3 were deleted or excluded. 29 items were retained as they had one dimension as shown in the scree plot below.

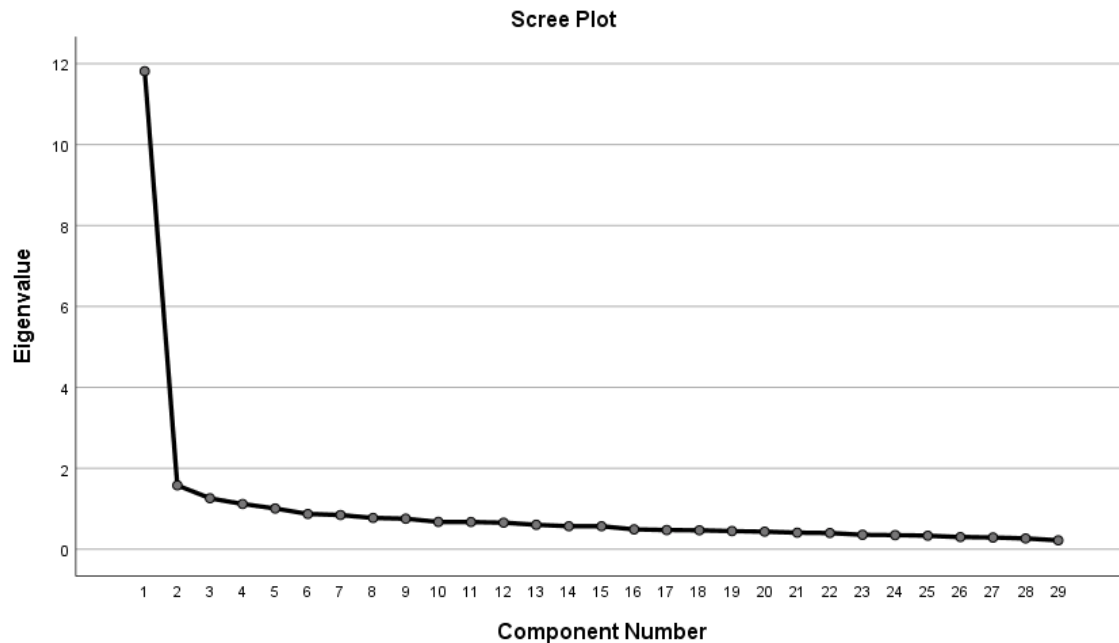


Figure 1. Scree plot for the number of dimensions in the questionnaire

It is clear that there was a dominant dimension as there was one inflection point which represented 41% of explained variance as shown in table 2 below. Consequently, the questionnaire was suitable according to the factorial validity analysis.

Table 2. Total Variance explained for dominant dimension of the questionnaire

Component	Total Variance Explained					
	Total	Initial Eigenvalues % of Variance		Extraction Sums of Squared Loadings % of Variance		
			Cumulative %	Total		Cumulative %
1	11.812	40.733	40.733	11.812	40.733	40.733

Extraction Method: Principal Component Analysis.

To ensure the reliability of the questionnaire, Cronbach's Alpha was calculated. Cronbach's Alpha coefficient was 0.946 for the total 29 items. The alpha values were higher than 0.7; this showed the questionnaire was reliable.

### 2.3 Participants

The population of this study included all university students who study at An-Najah National University. However, a small, yet sizable, sample of students answered the survey ( $n = 582$ ). Data collection were carried out during the second semester and the Summer Semester of the academic year 2019/2020.

### 2.4 Data Analysis

Data was normally distributed and was analyzed using means and percentages. Chi-square tests were used to calculate the associations between demographic elements and scores; student t-test was used when there are two variables and ANOVA was used when demographic elements compared are more than two, while linear regression was used to assess associations

between demographics and evaluation. The data was analyzed using SPSS version 21. Absolute values were used with percentages to indicate unanswered questions. Associations were tested at 95% significance level ( $P < .05$ ).

## 4. Results

### 4.1 Demographic characteristics

In total, (582) students studying at An-Najah National University responded to the questionnaire. These students were either males ( $n = 144$ ) or females ( $n = 438$ ). The researchers meant to involve undergraduate and graduate university students irrespective of their level of education which was of five divisions: freshmen or first year students ( $n=92$ ), second year ( $n=141$ ), third year ( $n= 165$ ), fourth year ( $n= 130$ ), and more than fourth year ( $n= 54$ ). With respect to students' total average, (96) students have excellent total averages; 212 students have good total averages, (225) have good total averages while the remaining (49) have acceptable total averages. In terms of the field of study or, in a more general sense, the faculty the students join, more than half of the respondents study at the Faculty of Medicine ( $n = 151$ ) or the Faculty of Engineering ( $n = 123$ ); (23) students join the Faculty of Sciences while (51) join the School of Fine Arts. From the Faculty of Humanities, only (40) students responded to the questionnaire while (69) students belong to the Faculty of Education; the least number of respondents came from either the Faculty of Islamic Sharia ( $n =12$ ) or the Faculty of Law. With respect to the Faculty of Graduate Studies, (45) graduates responded fully to the questionnaire.

### 4.1 Evaluation of electronic assessment

To answer the first question (What is the degree of students' evaluation of electronic assessment?), the researchers used the one sample test utilizing cutoff based on Likert Five-Point Scale where (4.2 -5) was considered as a very high degree, (3.4 -4.19) as high, (2.6-3.39) medium, (1.8 -2.59) as low, while less than (1.8) as very low due to the fact that the length of the category was 0.8. The results are shown in Table 3 below.

Table 3. ONE SAMPLE T-TEST for student evaluation of e-assessment

test value	M	SD	df	t	P
2.6	3.28	0.64	581	25.56	0.00
3.4	3.28	0.64	581	-4.64	0.00

Table 3 above shows that the evaluation degree falls within the middle area due to rejecting the null hypothesis using the cutoff degree of 2.6; the rejection was in favor of the middle evaluation as the t-test value was positive. The null hypothesis was also rejected when using the 3.4 cutoff degree for the sake of the cutoff degree itself since the t-test value was negative.

To answer the second question (Does students' evaluation of the electronic assessment differ according to students' gender, level (academic year), faculty (field of study), and total average?), the researchers used descriptive statistics to calculate the means and standard deviations. The results are shown in Table 4 below.



Table 4. Descriptive statistics for the demographic variables

Factors	Level	M	N	SD
Gender	Male	3.33	144	0.78
	Female	3.26	438	0.58
Faculty	Medicine	3.08	151	0.71
	Engineering	3.24	123	0.48
	Sciences	2.97	23	0.92
	Fine Arts	3.39	51	0.49
	Economics	3.46	52	0.61
	Humanities	3.29	40	0.52
	Education	3.44	69	0.64
	Islamic Sharia	3.6	12	0.71
	Graduate Studies	3.49	45	0.66
	Law	3.32	16	0.59
Total average	Excellent	3.37	96	0.83
	Very good	3.29	212	0.57
	Good	3.22	225	0.63
	Acceptable	3.33	49	0.53
Year	(First year) freshmen	3.26	92	0.79
	Second	3.29	141	0.57
	Third	3.24	165	0.69
	Fourth	3.3	130	0.59
	More than fourth	3.34	54	0.45

To identify whether there were differences that may be attributed to any demographic variable and to find out whether these differences were of statistical significance or not, the researchers carried out Factorial ANOVA as shown in Table 4 below.

Table 5. Tests of Between-Subjects Effects (Factorial ANOVA) for demographic variables

Source	SS	DF	M	F	P	$\eta^2$
Gender	0.00	1.00	0.00	0.01	0.94	0.00
Faculty	12.64	9.00	1.40	4.08	0.00	0.08
Year	2.27	4.00	0.57	1.65	0.16	0.02
Total average	0.49	3.00	0.16	0.47	0.70	0.00
gender * faculty	5.67	7.00	0.81	2.36	0.02	0.04
gender * year	1.96	4.00	0.49	1.42	0.23	0.01
gender *total average	0.07	3.00	0.02	0.07	0.98	0.00
faculty * year	8.67	33.00	0.26	0.76	0.83	0.06
faculty *total average	7.23	23.00	0.31	0.91	0.58	0.05
year *total average	3.32	12.00	0.28	0.81	0.64	0.02
gender * faculty * year	2.19	10.00	0.22	0.64	0.78	0.02



gender * faculty *total average	5.12	13.00	0.39	1.15	0.32	0.04
gender * year *total average	5.10	8.00	0.64	1.86	0.07	0.04
faculty * year *total average	15.03	34.00	0.44	1.29	0.14	0.10
gender * faculty * year *total average	0.75	3.00	0.25	0.73	0.54	0.01
Error	138.20	402.00	0.34			
Total	236.82	581.00				

The results show that there is a non-significant main effect of gender on the evaluation of e-assessment level or degree,  $F(1, 402) = 0.01$ ,  $p = .94$ ,  $\eta^2 = .00$ ; there were also no significant main effects of the year on the evaluation of e-assessment level or degree,  $F(4, 402) = 1.65$ ,  $p = .16$ ,  $\eta^2 = .02$  and of the total average of the student on the evaluation of e-assessment level or degree,  $F(3, 402) = 0.47$ ,  $p = .07$ ,  $\eta^2 = .00$ . However, the study results showed that there was a significant main effect of the faculty of the students on the evaluation of e-assessment level or degree,  $F(9, 402) = 4.08$ ,  $p = .001$ ,  $\eta^2 = .08$ . The LSD post hoc test revealed that medicine students' evaluation of e-assessment was less than peers in all other faculties except those who are registered in the Faculty of Science as they had the same evaluation. The evaluation of students in the Faculty of engineering was better and higher than those in the Faculty of sciences but worse or lower than those in the Faculties of Economics, Education, Islamic Sharia, and the faculty of Graduate Studies; however, engineering students had the same evaluation as those registered in the Faculty of Law and the Faculty of Humanities. With respect to the Faculty of Sciences, the evaluation of its students was less than all faculties except for Medicine and Law; the three faculties had the same evaluations. Finally, the evaluation of Fine Arts, Economics, Humanities, Education, Islamic Sharia, Law and Graduate Studies were similar or equal as shown in table 5 below.

Table 6. Post hoc test for Faculties

	Medicine	Engineering	Fine Arts	Economics	Humanities	Education	Islamic sharia	Graduate Studies	Law
Medicine									
Engineering	-0.16*								
Sciences	0.11	.27*							
Fine Arts	-0.31*	-0.15							
Economics	-0.38*	-.22*	-0.07						
Humanities	-0.21*	-0.05	0.1	0.17					
Education	-0.36*	-.20*	-0.05	0.02	-0.15				
Islamic Sharia	-0.52*	-.36*	-0.21	-0.14	-0.32	-0.16			
Graduate Studies	-0.41*	-.25*	-0.1	-0.04	-0.21	-0.06	-0.04		
Law	-0.23*	-0.08	0.07	0.14	-0.03	0.12	0.14	0.18	

\*. The mean difference is significant at the .05 level.

The results also showed that there was a significant interaction effect between the gender of the students and the faculty they study in, on the degree of evaluating the e-assessment,  $F(7, 402) = 2.36$ ,  $p = .05$ ,  $\eta^2 = .04$ . This indicated that male and female students were affected differently by their faculty as can be seen in Figure 1 below.

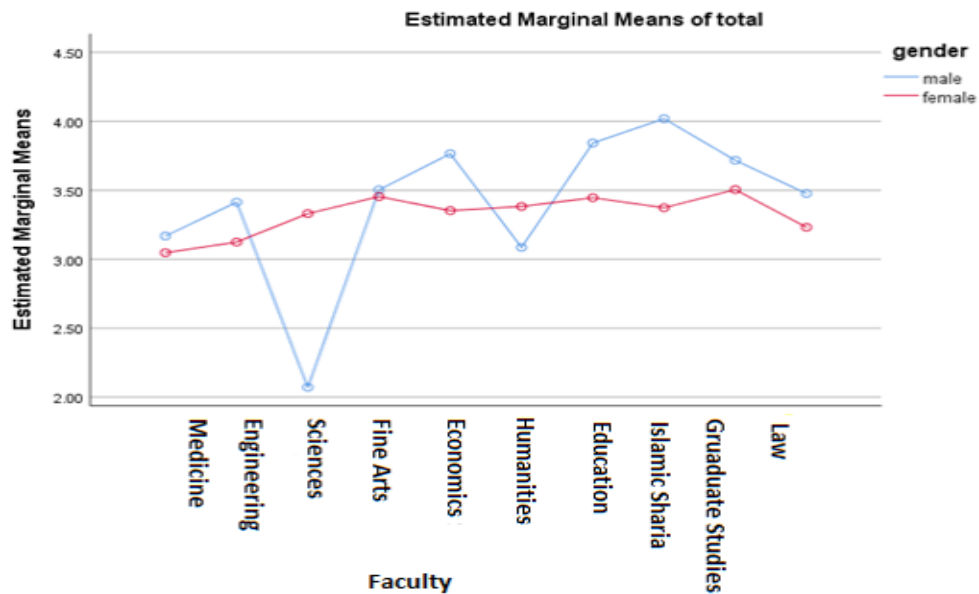


Figure 2. Estimated marginal means of the evaluation of e-assessment

The figure shows that the evaluation of male students was higher and better than the evaluation of female students in all the faculties except for the Faculty of Humanities and the Faculty of Sciences.

## 5. Discussion

The main purpose of the current study is to identify university students' evaluation of the online assessment that was used at the second and summer semesters 2019/2020 at An-Najah National University. It also aims to find out whether students' gender, level, faculty and total average have an impact on their evaluation or not.

The main study findings showed that students' evaluation of the e-assessment is moderate; it is neither high nor low. The researchers reckon that this is likely to be attributed to the fact that this kind of assessment has been used for the first time at the whole university with all its students involved; it is also carried out without prior planning or preparation following the spread of the coronavirus pandemic which resulted in sudden disruption in all aspects of life. Such results are consistent with Martell and Calderon's (2005) findings which stress the significance of prior planning and preparation for assessment.

The researchers also believe that the overall policy adopted by the university administration regarding the final marks or score the students get at the end of these two semesters has played a significant effect on the total level of students' evaluation. The university administration allowed students to choose between passing/failing the courses they study, or counting the marks they get to be included in their transcripts. Such a choice affected students' tendencies towards getting high marks especially those who are at the verge of graduation. Lack of motivation is likely to be a deterrent towards high rates of evaluation and consequently, getting

high marks in such a study. The rest of Palestinian universities had only allowed their students to choose the pass/fail option; this is why the researchers did not include other universities in the study sample.

When comparing the evaluations of students based on the demographic variables, the study findings show that a student's gender by itself does not have an impact on the evaluation of the assessment under scrutiny unlike Spender (1995) who stated that females tend to be hesitant and reluctant in this type of e-learning and e-assessment while males welcome it and Anderson (1997) who argued that females prefer the traditional face-to-face learning or communication. The same is true about students' levels as well as total averages. However, then we consider the faculty the student studies in, the researchers have noticed that the evaluation of students enrolled in the faculties of Medicine, Engineering and Sciences is lower than the evaluation of students in the other faculties, i.e., the social sciences faculties. This can be attributed to the types of questions that are used on exams; most questions measure low thinking skills like understanding and remembering. The researchers also believe that the students' responses to the questionnaire items prove this. For example, most students in the faculties of Medicine, Engineering and Sciences stated that e-assessment is not fair (item No. 13); the standards and the techniques used in e-assessment are vague and difficult to understand (item 13); the students cannot predict their marks precisely (item 17); e-assessment does not give students the chance to select the type of assessment that suits them and their study course (item 26); time allocated for the exam in this kind of assessment is insufficient (item 27); and e-assessment cannot be applied in all types of courses (item 31). Such results are inconsistent with Donovan, Mader, and Shinsky, 2007; Gilbert et al 2011; Llamas-Nistal et al. 2013; Sorensen, 2013; Tubaishat and El-qawasmeh, 2006) findings who state that student prefer electronic assessment.

Furthermore, the study findings show that the evaluation of students of the Faculty of Islamic Sharia is the best or highest while the evaluation of the Faculty of Medicine is the worst or the lowest. This can be attributed to the fact that most of the questions raised in the Islamic Sharia Faculty are centered on the low thinking skills mainly remembering while the questions in the Medicine stress the high thinking skills including evaluation, analyzing and synthesizing as shown in studies such as (Duran, Mihadiz, & Balliel, 2013; Ridgway, McCusker and Pead, 2004;).

The researchers also believe that the students of Medicine are interested in getting high marks as much as they can because the tuition fees are very high and they are much higher than fees in all other faculties. The university offers scholarships to students whose averages exceed 3.5 out of 4. Medicine students realize that e-assessment does not allow them to get very high marks because of stress, time constraint, internet connection interruption and other unexpected obstacles or difficulties while doing the online exams as stated by Way (2012) who postulated that some students may be inexperienced in handling online assessment, Crews and Cutis, (2010) when they argued that problems in internet connection may pose problems. Added to this is, of course, the tendency of some medical faculty members to apply a curve down based on overall marks of their students. It is worth noting that all students sit for three exams at the university a first exam, a second exam and a final. When students get high marks on the first and second exams, some faculty members tend to either administer difficult exams or make a curve down.

With respect to the Faculty of Sciences; the evaluation is low because a lot of courses have a theoretical part and a practical one. With the enforced closure, the practical part has been neglected or even cancelled and; consequently, some students lost marks and eventually had negative attitudes towards e-assessment. When comparing the faculties of the social sciences such as the Humanities, Islamic Shaaria, Law, Fine Arts, and Economics with each other, one can

notice similar evaluations; the students in these faculties are normally tested with much focus on low thinking skills such as knowledge; this is concurrent with (Duran, Mihaladiz, & Balliel, 2013; Ridgway, McCusker and Pead, 2004) who postulated that e-assessment focuses on high thinking skills.

Furthermore, a lot of faculty members in these faculties have had previously electronically designed courses which have an online exam with maximum 30% of the total mark of the course. Finally, the numbers of students enrolled in these faculties are low compared to the numbers of students in scientific faculties mainly Medicine and Engineering where competition among students is very high. Evaluation of students who have tentatively similar merits and potentials, let alone, ambitions tends to be more sensitive.

When the interaction between the gender and the faculty is taken into account. The researchers find that even though females outnumber males in all faculties, males' evaluation is lower than females' especially in the Faculties of Humanities and Sciences. This can be attributed to the students' responses to the questionnaire items in general and items (3, 11, 14, 33, and 34) for the faculty of Sciences and items (4, 24, 25 and 28) for the Humanities. For instance, male students in the Faculty of Sciences have stated that e-assessment does not enable them to revise their answers (item 3); electricity cut out and interruption of the internet connection affects their performance during exams item 11); it is not easy to consult references and textbooks during exams (item 14); the students do not feel satisfied with the way exams and assignments are calculated and given weights (item 33); and finally the student does not have the chance to choose between pass/fail or count the mark in the transcript (item 34). With respect to students in the Faculty of Humanities, males' evaluation was lower than their female counterparts due to attitudes towards the e-assessment as shown in their responses. They have stated that this type of assessment does not save students' time and effort (item 4); it also measures students' abilities to use the computer rather than answer exam questions (item 24); e-assessment does not improve students' performance and practical skills (item 25), and finally students' don't trust this kind of assessment as they don't get feedback (item 28). Such findings agree with those reached by Crew and Cutis (2010) who attributed lack of motivation towards e-assessment to different obstacles including but not limited to lack of infrastructure and poor internet connection. The results are also inconsistent with Ridgway, McCusker and Pead (2004) who believed that open questions are difficult to handle in e-assessment.

The researchers also believe that females' evaluation of e-assessment is better than males' evaluation, contrary to findings by Spender (1995) and Anderson (1997), in these two faculties can be attributed to the fact that female students want high marks which is easy in e-assessment. Added to this may relate to the job opportunities for students after graduation. Most of the students who finish Humanities and Sciences go to work as teachers; there is a noticeable shortage of male teachers in all specialties mainly language teachers and physics, chemistry or biology teachers; therefore, male students do not care about high marks due to lack of competition after graduation as the Palestinian Ministry of Education looks eagerly for male teachers and hire most of them irrespective of their qualifications.

## **6. Conclusion**

In conclusion, the researchers found that applying new types of assessment without prior strategic planning is very likely to create different attitudes among students irrespective of their gender, level (academic year), faculty (field of study), and total average. Students' evaluation differs based on their gender and field of study (faculty) simultaneously. Medical students showed dissatisfaction with this type of assessment for many considerations including but not limited to

technical and administrative. Consequently, students' perceptions and attitudes regarding online assessment should be taken into account to ascertain a smooth educational process that tremendously incorporates technology. University administrations are supposed to prepare well for such a transition to online assessment to persuade students of its usefulness. This study showed that to convince students to accept online assessment, universities should plan well, provide adequate infrastructure, mind students' circumstances, and above all, incorporate appropriate, well-designed assessment tasks. Finally, online assessment is supposed to be addressed seriously in order to integrate this type of assessment not only at universities but also in all educational institutions.

## 7. Recommendations

Due to the fact that e-learning is rapidly and constantly becoming popular, online assessment has become also very popular. Consequently, students' attitudes to and perceptions of online assessment should be considered seriously. Furthermore, it is crucial to pay attention to the way students look at and react to this type of assessment and subsequently apply necessary modifications to the various assessment tasks. The researchers recommend that for assessment to be credible, university instructors must spare no efforts in creating an assessment that is practicable and authentic and minds students' circumstances. Consequently, educational institutions are required to create assessments tasks that reduce stress among students to the minimum. Finally, online assessment is supposed to be addressed seriously in order to integrate this type of assessment not only at universities but also in all educational settings. The researchers recommend further research to examine these issues in various contexts across faculties at other universities. In addition, future studies may be needed to explore the advantages and/or disadvantages of online assessment under certain circumstances. It is also plausible for other researchers to carry out studies about online assessment tasks and mechanisms. Finally, when the pass/fail chance in the university where this research has been conducted, is cancelled, the researchers may replicate the study to compare results.

## 8. Acknowledgement

The researchers would like to extend their sincere gratitude and appreciation to all the students who participated in the study by sending back the questionnaires. Special appreciation is extended to the students who spent time answering various questions during the interviews.

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