

The Effect of COVID19 on the Academic Achievement of Accounting Department Students at the University of Jordan, Aqaba Branch. An experimental study

Dr. Rania Al Omari

Department of Accounting, Faculty of Business,
University of Jordan, Jordan
Email. r.omari@ju.edu.jo

ABSTRACT

Universities have changed teaching via e-learning platforms due to the Covid-19 pandemic, which means transferring their work quickly from classrooms and lecture halls to e-learning platforms. As the student assessment was carried out through e-learning platforms, the aim of this paper was to investigate the connexion between the academic achievement of computerised exams and traditional pen and paper exams for accounting department students at the University of Jordan-Aqaba branch of Business College accounting at the University of Jordan-Aqaba as well as to relate the gender of students to differences. The study sample comprised 136 students of the Research Methods in Accounting course from the accounting department at the Business Faculty. A traditional exam was held before COVID 19 crises while the computerized exam after COVID 19 crises. The results of the two exams were compared where unified factors that cause a difference in academic achievement, namely (the same course subject, course subject lecturer) were set. The SPSS was used to compare the results of the marks two exams. Results were related to student's gender, whether gender-related differences are found. The study concluded that there is no statistically significant relationship between the academic achievement of computerized exams held after COVID 19 crises and traditional ones (paper and pen) held before COVID 19 crises for the Research Methods in Accounting course from the accounting department at the Business Faculty in The University of Jordan- Aqaba branch. The results also indicated that the academic achievement differences resulting from computerized exams have to do with the student gender variable in favor of male students.

Keywords: Student, computerized exam, traditional pen and paper exam, academic achievement of computerized exam, academic achievement of traditional pen and paper exam, Accounting Department, Research Methods in Accounting, the University of Jordan.

Correspondence:

Dr. Rania Al Omari
Department of Accounting, Faculty of Business,
University of Jordan, Jordan
Email. r.omari@ju.edu.jo

INTRODUCTION

The emerging Covid-19 pandemic, which is spreading globally, has caused a major shift in human activity behavior, including teaching and learning. As countries affected by the emerging COVID-19 virus have been forced to create digital learning platforms (Jandrić 2020a). This rapid transformation began from the second semester to teaching online. Because of Jordan impacted on COVID 19 pandemic, the Jordanian university applies the education through learning platforms. The University of Jordan is considered one of the oldest universities in Jordan. The University of Jordan, established in 1962, is one of the main public government universities located in Amman. In 2009, a royal decree was issued to establish a branch of the University of Jordan in Aqaba. During the same year, the Faculty of Business was established to contribute to providing services that help improve the financial and business sector through qualified students. The Faculty of Business awards the BA. and MA. degrees; BA. degree in the following fields: Business Administration, Accounting, Insurance and Risks, while the MA degree covers Accounting and Business Administration. The study sample consists of marks of the computerized exam after COVID 19 crises and of traditional pen and paper exam before COVID 19 crises for the course of Research Methods in Accounting course, this course taught in the fourth year of accounting students it introduces them to the methods and methodologies of research in accounting, and concentrates on quantitative and qualitative methods and case studies, and provides them with the requisite skills

and means to choose and implement research in accounting.

Rehmani (2003) stressed that exams have a significant role in assessing the educational process and measuring students' learning process, where the information revolution has transferred exams to a higher level; traditional pen and paper exams to computerized ones that are held in computer labs instead of classrooms. These exams are designed by the course lecturer or computer lab supervisors. Students are identified by their university card or by their own lecturer. In computerized exams, a bank of questions is inserted in the computers' servers, and each student is provided with a number of randomly-ordered questions.

LITERATURE REVIEW

In North America Freire, P. (2018). the study investigates the performance of American higher education academic duties the effect of Information and Communication Technology on it. this paper examines the quality transformation of intellectual products. and to enhance the educational technology industry and its impact on educational quality, and knowledge capital in higher education. Banks et al (2018) The study aims to discuss the strategies, approaches, and initiatives that considered the strengths-based and deficit approaches. and it highlighted what universities need to know programmatic barriers within universities exacerbate systemic barriers for higher education students.

In Jordan, Al-Qdah (2017) investigated the impact of internet-based exams on students' achievements through comparing Internet-based exams with paper exams. Results showed that students prefer paper exams to

The Effect of COVID19 on the Academic Achievement of Accounting Department Students at the University of Jordan, Aqaba Branch. An experimental study

computerized ones, nonetheless they showed preference in the immediate results obtained through computerized exams.

Al-Khayyat also concluded the existence of a positive proportional relationship between students and computerized exams, and that the gender variable has an impact on the relationship between computerized exams and academic achievement, where it was found stronger in male students.

Bodmann, Robinson (2017) explores the effect of the different methods of exams management on grades and finishing time. In Experiment 1, the paper assessment was compared with the computer-based assessment. Students in the Universities performed a computer-based evaluation faster than a paper-based evaluation without any grades gap. Experiment 2 tested three different computer interfaces that allowed students to modify and revise their responses with different degrees of versatility. The three patterns did not vary in grades, but students were able to complete the less flexible more quickly than their other two patterns. The less flexible test pattern tends to be quicker and not less effective than more flexible exams.

In Australia, James (2016) aims at identifying students' attitudes towards the use of computerized exams in New England University. The study concluded that there are challenges facing students regarding computerized exams, namely: technology use, techniques and exams systems. The study concluded that computerized exams lessens students' anxiety and is lower in cost.

In Turkey, Aybek; etal (2016), a simulation experiment of an exam conducted by the teacher was carried out, an assessment of the academic achievement was developed by using simulCAT, and students were trained to the simulation model. Students' grades were similar to those of the paper exam model. Karman (2011) showed that assessing computerized internet-based workshops is achieved through computerized exams. Uysal and A. Kuzu (2009) concluded that developing an infrastructure to integrated education is a must, as well as boosting this with courses in computer ethics. This infrastructure shall adopt quality criteria to computer-based learning. In China, Chien (2008) also addressed the impact of computer anxiety on e-learning effectiveness. The study showed that anxiety in relation to computers has an impact on e-learning.

In Taiwan, Win&Tasi (2006) concluded that male students' inclination to computerized exams was higher than that of female students in the Faculty of Business. In Germany, Brosnan (1998) showed anxiety of using computers is gender-specific; it is higher among female students than their counterparts.

Research problem: The study problem lies in determining the relationship between the academic achievement resulting from computerized exams and the academic achievement resulting from the traditional pen and paper one held at the Faculty of Business in the University of Jordan – Aqaba branch, where there is a tendency from faculty members to evaluate students through computerized exams and find a connection between academic achievement results and gender.

RESEARCH QUESTIONS

Is there a correlation between academic achievement resulting from computerized exams after COVID 19 crises and academic achievement resulting from traditional pen and paper exams before COVID 19 crises for course Research Methods in Accounting held at the accounting department Faculty of Business in the University of Jordan- Aqaba branch.

Is there a correlation between academic achievement resulting from computerized exams after COVID 19 crises and academic achievement resulting from traditional pen and paper exams before COVID 19 crises for course Research Methods in Accounting held at the accounting department Faculty of Business in the University of Jordan- Aqaba branch. attributed to gender.

Hypotheses

H₀₁: There is no statistically significant relationship between academic achievement resulting from computerized exams after COVID19 crises and academic achievement resulting from traditional pen and paper exams before COVID19 for course Research Methods in Accounting held at the accounting department of the Faculty of Business in the University of Jordan- Aqaba branch.

H₀₂ : There is no statistically significant relationship between academic achievement resulting from computerized exams after COVID19 crises and academic achievement resulting from traditional pen and paper exams before COVID19 for course Research Methods in Accounting held at the accounting department of the Faculty of Business in the University of Jordan- Aqaba branch attributed to gender.

RESEARCH METHODOLOGY

The computerized exam after the COVID 19 crises real grades of students taking the Research Methodology in Accounting course during the second semester and summer semester of 2019-2020 were obtained, on another hand traditional pen and paper exam before COVID 19 crises regarding the same course.

Research population: Students of the Accounting department at Faculty of Business/ University of Jordan- Aqaba branch.

Research sample: Students of both Research Methods in Accounting course classes at the Faculty of Business/ University of Jordan- Aqaba branch

Research Variables

- The academic achievement resulting from computerized exams is represented in this study by the computerized exam after the COVID 19 crises grades for course Research Methods in Accounting held at accounting department the Faculty of Business in the University of Jordan- Aqaba branch.

- The academic achievement resulting from traditional pen and paper exams is represented in this study by exam grades before COVID 19 crises for Research Methods in Accounting course at accounting department the Faculty of Business in the University of Jordan- Aqaba branch.

- Gender

Description of the study sample

Table 1. Classifying students per university admission year

2012	2013	2014	2015	2016	2017	2018	2019	Admission year
1	0	1	1	0	127	6	0	Number of students
007.	0	007.	007.	0	93.	04.	0	Ratio

The Effect of COVID19 on the Academic Achievement of Accounting Department Students at the University of Jordan, Aqaba Branch. An experimental study

127 fresh students holding university ID card numbers of 2017, 6 students accepted in 2018, 0 students accepted in 2017, 1 student accepted in 2015, 1 student accepted in 2014, and 1 accepted in 2012.

Table 2. Classifying students per gender

Female	Male	Number
63	73	136
46%	54%	100%

It is noted from the table above that male students outnumber female students, with a percentage of 54% for males and 46% for females.

Table 3. Classification of students who passed and those who failed in the computerized and traditional pen and paper exam

Academic achievement in the traditional pen and paper exam	Academic achievement in the computerized exam	Student status
76	31	Passed
56%	23%	percentage of students who passed
60	105	Failed
44%	77%	Total

It is noted from the table above that 77% of the students failed in the computerized exam while 44% students failed in the traditional pen and paper exam, with a difference of 33% in favour of the traditional pen and paper exam.

Hypotheses Testing

H₀₁: There is no statistically significant relationship between academic achievement resulting from

computerized exams after COVID19 crises and academic achievement resulting from traditional pen and paper exams before COVID19 for course Research Methods in Accounting held at the accounting department of the Faculty of Business in the University of Jordan- Aqaba branch

Table 4 shows the correlation between academic achievement in the computerized exam exams After COVID 19 and academic achievement in the traditional pen and paper exam before COVID 19 for Research Methods in Accounting course held at accounting department at the Faculty of Business in the University of Jordan- Aqaba branch.

	Academic achievement in the computerized exam After COVID 19	Academic achievement in traditional pen and paper exam Before COVID 19
Academic achievement in the computerized exam	1	119. Pearson Correlation
Sig. (tailed-2)		172.
Academic achievement in traditional pen and paper exam	119. Pearson Correlation	1
Sig. (tailed-2)	172.	
** . Correlation is significant at the 0.01 level (tailed-2).		
* . Correlation is significant at the 0.05 level (tailed-2).		

The table above shows that the P.value (172.) is greater than 5%, so will accept the null hypothesis HO1 stating that " there are is no statistically significant relationship between the academic achievement resulting from computerized exams and academic achievement resulting from traditional pen and paper exams held at for accounting department at the Faculty of Business in the University of Jordan – Aqaba branch. Shows that there are no statistically significant differences between them.

Testing the second hypothesis

H₀₂: There is no statistically significant correlation of the difference between academic achievement resulting from computerized exams after COVID 19 for course Research Methods in Accounting held at the accounting department the Faculty of Business in the University of Jordan- Aqaba branch attributed to gender.

Table 5. shows the differences in central tendency and dispersal measurements of academic achievement resulting from the computerized exam.

Measurements	Male	Female	Difference
Number	73	63	Male students outnumber with a difference of 10
Ratio	54%	46%	Difference 8%
Mean	41.	40.	Difference 01.
Median	43.	40.	Difference 03.
Variance	015.	019.	Difference 004.

The Effect of COVID19 on the Academic Achievement of Accounting Department Students at the University of Jordan, Aqaba Branch. An experimental study

Std Deviation	122.	136.	Difference 014.
Minimum	000	000	000
Maximum	73.	90.	17.

The table above indicates that the number of male students reached 73 while female students reached 62. When observing the central tendency measurements, it is noticed that the arithmetic mean for male students is higher than that for female students with a difference of 01., so is for the moderator with a difference of 03. in favour of male students. This is attributed to the fact that

there are differences in the academic achievement in the computerized exam due to gender, where male students get higher grades than female students, while the higher grade was that of a female student, and the difference and standard deviation of male students achievement average was lower than that of females.

The Table 6. Correlations

Control Variables		Comexm	Papexam
Gender	Correlation	1.000	1.000
	comexm		
	Significance (tailed-2)	.	000.
	Df	0	130
	Correlation	1.000	1.000
	papexam		
Significance (tailed-2)	000.	.	
Df	130	0	

The Table above shows that the P.value (000.) is less than 5%, thus the null hypothesis stating that " There is no statistically significant relationship between academic achievement resulting from computerized exams after COVID19 crises and academic achievement resulting from traditional pen and paper exams before COVID19 for course Research Methods in Accounting held at the accounting department of the Faculty of Business in the University of Jordan- Aqaba branch attributed to gender." is rejected, whereas the alternative hypothesis which states that " There is no statistically significant relationship between academic achievement resulting from computerized exams after COVID19 crises and academic achievement resulting from traditional pen and paper exams before COVID19 for course Research Methods in Accounting held at the accounting department of the Faculty of Business in the University of Jordan- Aqaba branch attributed to gender." is accepted, where results are in favour of male students.

RESULTS AND RECOMMENDATIONS

Due to the emerging Covid-19 disaster and the massive closures in all aspects of life, universities have transformed teaching offline, i.e. transferring their work from classrooms and lecture halls to digital platforms in a quick time. It resulted in gaps and deficiencies in how online learning and assessment is accredited or not accredited in universities. In this research, a comparison was made between the material given in the classrooms and the traditional pen and paper exam and the academic achievement of the material given through the platforms and computerized exam. The study concludes that there is no statistically significant relationship between academic achievement resulting from computerized exams and academic achievement resulting from traditional pen and paper exams held at accounting department at the Faculty of Business in the University of Jordan-Aqaba branch. Results also indicate a difference in academic achievement due to gender, being that in favor of male students. Accordingly, this study accords with most literature which showed results in favor of male students. On the other hand, this study disagrees with Aybek, et al which concluded that results are even

between computerized and traditional pen and paper exams. This is attributed to the fact that there is appropriate infrastructure, students are trained to attend computerized exams and there is no room for anxiety regarding using computers during the learning experience.

The researcher has recommended the following:

1. Conducting similar studies at the other university faculties to improve the provision quality of computerized exams that serve the interest of students and faculty members.
2. Conducting similar studies regarding other faculty courses to improve the provision quality of computerized exams that serve the interest of students in relevant specializations as well as faculty members.
3. Training students regarding computer-based exams since this is related to the competence test by which the university is evaluated.
4. Training students regarding computer-based exams since most recruitment exams are computer-based.

REFERENCES

1. Alkhiat M." Students and Instructors' Attitudes toward the Computerized exams in the Business Faculty at the Main Campus of Al - Blaqa Applied University "An-Najah University Journal for Research" (Humanities Sciences) (Vol. 31 (11,) 2)
2. Aybek; etal "Comparison of student's Achievement According to Teacher-made Test with Paper-Pencil Form and Computerized Adaptive Test Simulation" Amasya University, Turkey Global Learn 2016 (Apr 28, 2016) pp. 46-51
3. Banks, Dohy " Mitigating Barriers to Persistence: A Review of Efforts to Improve Retention and Graduation Rates for Students of Color in Higher Education", Higher Education Studies; Vol. 9, No. 1; 2019 ISSN 1925-4741 E-ISSN 1925-475X.
4. Brosnan.MJ "The Impact of Psychological Gender, Gender-Related Perceptions, Significant Others, and the Introducer of Technology upon Computer Anxiety in Students";Journal of Educational Computing Research; <https://doi.org/10.2190/LVHH-EPGB-AE7J-WEV8>

The Effect of COVID19 on the Academic Achievement of Accounting Department Students at the University of Jordan, Aqaba Branch. An experimental study

5. Freire, P. (2018)." Academic/Digital Work: ICTs, Knowledge Capital, and the Question of Educational Quality", *Pedagogy of the oppressed* (50th Anniversary ed.). New York: Bloomsbury.Vol 16 No 1 (2018), ISSN: 1726-670X
6. James, R. (2004). (2016). Tertiary student attitudes to invigilated, online summative examinations, the *International Journal of Educational Technology*, 13(19).2-13.
7. Jandrić, P. (2020a). Postdigital research in the time of Covid-19. *Postdigital Science and Education*, 2(2), 233–238. <https://doi.org/10.1007/s42438-020-00113-8>.
8. Basalto, O. H., Berdud, I. R., & Ramírez, L. L. H. (2018). La reafirmación profesional de la carrera de veterinaria. garantía del progreso humano. *Revista Electronica De Veterinaria*, 19(3)
9. O. Uysal and A. Kuzu, –A thesis proposal: quality standards of online higher education in turkey. *Internationalization and the role of university networks*, || in Proc. the 2009 EMUNI Conference on Higher Education and Research, Potorož, Slovenia, September 25-26.
10. Al-QdahMajdi and Ababneh Islam "Comparing Online and Paper Exams: Performances andPerceptions of Saudi Students" *International Journal of Information and Education Technology*, Vol. No.7, 2, February 2017.
11. Rehmani. (2003). Impact of public examination system on teaching and learning in Pakistan. [Online]. Available: <http://www.aku.edu/AKUEB/pdfs/pubexam.pdf>
12. S. M. Bodmann and D. H. Robinson (2004), "Speed and performance differences among computer-based and paper-pencil tests," *Journal of Educational Computing Research*, vol. no. 31, pp. 1, 2004, 51-60.
13. Teräs, M., Suoranta, J., Teräs, H. et al. (2020) Post-Covid-19 Education and Education Technology 'Solutionism': a Seller's Market. *Postdigit Sci Educ*. <https://doi.org/10.1007/s42438-020-00164-x>
14. Tien-Chen Chien "Factors Influencing Computer Anxiety and Its Impact on E-Learning Effectiveness: A Review of Literature"(2008).
15. Win M. &Tasi, C. (2006). University students' perceptions of and attitudes toward (online) peer assessment, *Higher Education*, 51. 27- 44