



Academic Achievement of Undergraduate Nursing Students in The Faculty of Nursing Before And During Corona Pandemic

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Abstract

Background: Universities were abruptly obliged to move to e-learning as a result of the Corona pandemic, and the University of Tripoli's College of Nursing was one among such institutions. From there, the research came to show the reality of using e-learning in the College of Nursing at the University of Tripoli, Libya. Under these circumstances.

Purpose: The purpose of this study is to compare the academic achievement of second semester nursing students in the faculty of nursing before and during the Corona pandemic.

Method: Using the quantitative comparative research design with all population sampling, a total of 148 nursing students were utilized as the sample. 88 of which were allotted before Corona pandemic while samples of 60 during the Corona pandemic. Data were collected from the college study and exams office, which were the final grade of the selected course in the second semester of the academic year 2019-2020 and the first semester of the academic year 2020-2021. The collected data were statistically analyzed using SPSS version 24, with t-test used to compare the effect of e-learning on student achievement in Fundamentals of Nursing 2 course (NU113) during the Corona pandemic to that of face-to-face learning prior to the Corona pandemic.

Results: The results revealed that the average academic achievement scores for students before the Corona pandemic with face-to-face education was 56.76 and that the average academic achievement scores for students during the Corona pandemic with e-learning was 56.23. Significance levels were set at $\alpha \leq 0.05$ was considered as statistically significant for all analyses of comparison between student scores before and during the Corona pandemic. The results showed that there is no statistically significant difference in academic achievement between students who studied e-learning and face-to-face education, with ($p=0.868 > \alpha$). H_0 is accepted, which means that the transition to e-learning rather than face-to-face education had no negative impact on academic achievement, it was found that nursing students academic achievement is not negatively affected by the Corona pandemic.

Conclusion: In this way, e-learning can be harnessed and developed to advance the nursing education agenda. Further study is recommended to assess the impact of e-learning on students' academic achievement on other courses.

Key words: *E-learning*, the Corona pandemic, Academic achievement.

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Introduction

The Corona pandemic that appeared in China at the end of 2019 paralyzed the world and stopped the daily routine of human life (WHO,2020). With the reality of this epidemic that has affected the world, and in the context of continuing education in light of this epidemic, educational activities in most countries of the world have been transferred from face-to-face education to e-learning (Affouneh et al. ,2020). Furthermore, moving to an online education system can affect students' academic achievements. As face-to-face teaching is the dominant method of teaching across universities, the Corona virus lockdown aimed at mitigating the spread of the Corona pandemic has forced all face-to-face classrooms in universities to move to online learning (e-learning) (UNESCO, 2020).

In recent years, many publications have appeared to document online teaching and learning practices, especially with the emergence of the Corona pandemic. Since studies in various fields of education, such as computer science, medicine, nursing, engineering, and European languages have dealt with the topic of teaching and e-learning (Pei & Wu, 2019).

The current study compared student academic achievement before Corona pandemic (face-to-face learning) versus during Corona pandemic (e-learning) in the faculty of nursing. In this way, e-learning can be harnessed to further develop the nursing education agenda in a more advanced manner.

Background of the Study

Since the unplanned Corona crisis has forced universities to suddenly switch to e-learning, the College of Nursing at the University of Tripoli was one of the colleges which found itself forced

to shift to e-learning. From there, the research came to show the reality of using e-learning in the College of Nursing at the University of Tripoli, Libya. Under these circumstances, comparing the impact of e-learning on students' academic achievement during the Corona pandemic to the impact of face-to-face learning on students' academic achievement before the Corona pandemic promised valuable findings. Face-to-face learning in the College of Nursing suffers from many problems and concerns, which makes e-learning an attempt to solve many education issues in light of the Corona crisis.

The e-learning process was not contingent on knowing its importance; however, there is little exploratory study on how the pandemic affects the academic achievement of students in the field of nursing sciences using e-learning. There is a dearth of studies that explore the deeper issues of the Corona pandemic and students' academic achievement in the faculty of the University of Tripoli College of Nursing with e-learning.

Significance of the study

Due to the Corona pandemic, the global education sector experienced a shift in distance e-learning as an alternative to face-to-face education.

This study highlighted the impact of e-learning on educational outcomes, especially the academic achievement of students in the area of nursing education. As to nursing practice, the study showed that learning and updating can be achieved both face-to-face and via e-learning so e-learning will help in knowledge and skill acquisition. In the area of nursing sciences, the study embodied the importance of modes of

teaching and learning, where possible e-learning should be used in times of face-to-face or supplement face-to-face learning.

While in the area of nursing research, the study provided the importance of different modes of learning in education innovation. Also, the study will encourage more studies on barriers and enhancers of e-learning. It is important to enhance e-learning tools and applications for easy access and use by students (WHO,2020).

Statement of Problem

This study compared the average academic achievement scores of nursing students before the Corona pandemic using face-to-face education and the average academic achievement scores of students during the Corona pandemic using e-learning. Specific to Fundamentals of Nursing 2 course, second semester of the academic year 2019-2020 and first semester of academic year 2020-2021. Likewise, it showed the effect of e-learning on student achievement during the Corona pandemic. Specifically, it explored the following research questions:

1. What is the academic achievement of students in Fundamentals of Nursing 2 course before the Corona pandemic?
2. What is the academic achievement of students in Fundamentals of Nursing 2 course during the Corona pandemic?
3. Is there a significant difference in the academic achievement of students before the Corona pandemic in the spring of 2019-2020 and during the Corona pandemic in the fall of 2021-2022 in Fundamentals of Nursing 2 course?

Literature Review

Many Arab and international researchers have studied the impact of e-learning on students' academic achievement, realizing its importance. Face-to-face education (traditional education), as

it is commonly known, is the method of learning adopted by all educational institutions and is dependent on the students need to be in the teachers place and to communicate directly and face-to-face (Pei & Wu, 2019). But with the emergence of the Corona pandemic, many researchers have suggested many innovative ways to deliver distance education (e-learning) and introduce technology into teaching as a more suitable alternative to ensure the continuity of the educational process (Dawan, 2020). It designed effective and easy-to-use programs to suit students and teachers and make the e-learning process more prevalent in this era. The following are the studies with topics on significance of e-learning versus traditional learning otherwise known as face-to-face in terms student's academic achievement.

The study by (Kaymak et al. 2021) on the detection and investigation of the impact of e-learning and traditional education on students, success in mathematics by choosing 62 seventh-grade students revealed showed that there was no appreciable difference in student achievement, in either case. That is, these two methods have the same effectiveness in enhancing students' understanding of the topics.

Another study conducted by (Alzahrani, A, 2019), identified the students' attitudes and their educational attainment in adopting the synchronous education method only and the method of teaching that includes asynchronous and synchronous education. The findings, which were applied to 49 female students at Hail University's preparatory year, showed that there was a statistically significant difference in educational attainment in favor of the asynchronous and synchronous education groups.

Citing the study of (Jawad et al. 2020), which investigated the impact of e-learning during the

Corona pandemic on the academic achievement of students at Al-Quds Open University. Revealed significant differences in students' academic achievements during the implementation of the e-learning strategy in the Corona pandemic, were discovered by the randomly chosen average of 382 individuals from official university records. The findings demonstrated the significance of applying an e-learning strategy in higher education institutions to improve students' academic achievements.

The academic achievement of students at Universiti Teknologi MARA Cawangan Pulau Pinang (UiTM CPP) was examined by (Libasin et al. 2021) in a research comparing compare the effect of different learning styles (synchronous and asynchronous education) during the COVID-19 crisis. Their study showed indicated a significant difference between the averages of the two online learning approaches. Therefore, it was determined that the online education strategy produced higher results in terms of the academic performance of the students.

The study of Lestari et. al (2022), assessed the views of dental students at the International Islamic University of Malaysia (IIUM) on the implementation of online learning during the Corona pandemic and its impact on academic performance. Academic performance was assessed by comparing professional test scores before and after online learning. Among the 249 IIUM dental students a significant improvement (p -value < 0.05) was observed in exam scores in oral biology, microbiology, and pharmacology, while dental subjects showed a decline in performance. The other subjects did not show a significant difference ($P > 0.05$) in the mean scores before and after online learning. The researcher concluded that the students had a positive response to online learning management. Based on the analysis of test results, only two subjects in

the second and third years were negatively affected by online learning during the Corona pandemic.

From what had been availed from previous studies and sources, it was very noticeable that there is a lack of specialized Libyan studies on the subject of the impact of e-learning on the students' academic achievement at the University of Tripoli. Therefore, this study will present the effect of e-learning on student achievement during the Corona pandemic at the Faculty of Nursing, University of Tripoli.

Research Hypotheses

Null Hypothesis (Ho1): There is no considerable difference in the academic achievement of students between e-learning and face-to-face learning.

Materials and Method

This study carried out a quantitative form of research design through a retrospective study design of undergraduate nursing students enrolled in a selected nursing course in the faculty of nursing at the University of Tripoli. The students under study either received online lessons during the Corona pandemic or face-to-face lessons before the outbreak of the Corona pandemic. The Fundamentals of Nursing 2 course (NU113) was the course selected for this study. The second semester of the academic year 2019-2020 and the first semester of the academic year 2020-2021 otherwise the before and during the use of the e-learning method. The secondary type of data was collected from the final results of the student in the selected course from the College's Study and Examination Office. This course was chosen as it includes a variety of learning methods, including lectures and laboratory work, ensuring that the various methods are represented in the results. Descriptive and comparative statistics were generated using a t-test to determine the results.

Population and Sample

The study's research community revolves around nursing students from the faculty of nursing at the University of Tripoli. They are those who met the following criteria: first, Semester 2 students officially enrolled in the NU113 course. Second, were enrolled and performed academically in both the 2019-2020 and 2020-2021 semesters. Third, rolled in e-learning classes during the Corona pandemic and face-to-face education before the Corona pandemic for the course. From a total population of 88 and 60 students in the before and during Corona pandemic respectively, all population sampling was 148 to represent all groups for t-test statistics.

Local of the Study

The study was conducted in the faculty of nursing at the University of Tripoli, where the participants of the study officially enrolled in the 2022.

Research Instrument

The study tool was the secondary data obtained from the Study and Examination Office of the Faculty of Nursing.

Data Gathering Procedure

A permit to gather and conduct research studies in the faculty of nursing was requested and approved by the dean of the faculty of nursing. The academic achievement was the cumulative mark of the students in the form of a midterm grade of 40% and a final grade of 60% for the selected course. It was then compiled and analyzed as appropriate.

Data Analysis

The hypotheses of the study was tested and clarified that there is no statistically significant differences in the academic achievement of

students in the second semester of 2019-2020 in the case of traditional face-to-face education before the Corona pandemic and academic achievement in the fall semester of 2020-2021 in the case of implementing e-learning during the Corona pandemic. Quantitative data were analyzed using software SPSS statistics version 24, an independent t-test model was used to compare the impact of e-learning on the academic achievement of students of the Faculty of Nursing at the University of Tripoli during the Corona pandemic versus the face-to-face learning. Significance levels were set at $\alpha \leq 0.05$ was considered as statistically significant for all analyses. The data collected during the study was organized, classified, grouped and analyzed on the basis of descriptive and comparative statistics such as mean, standard deviation and t-test.

Ethical Consideration

Ethical considerations on sample anonymity (name of student of the lists). Only the registration number and the final result for students, with great care not to cause harm but benefit to the samples was observed.

Results

As seen in Table 1, the means of scores in students in face-to-face education before the Corona pandemic (56.76) with a standard deviation of (14.849) is higher than that of the mean of scores in students in e-learning during the Corona pandemic (56.23) with a standard deviation of (21.217). This indicates the superiority of face-to-face education by a small amount over e-learning. To avoid misconceptions in descriptive statistics, were performed inferential statistics (independent t-test) to reveal any statistically significant differences.

Group Statistics

before-during		N	Mean	Std. Deviation	Std. Error Mean
Academic achievement	before pandemic	88	56.76	14.849	1.583
	during pandemic	60	56.23	21.217	2.739

Table 1 indicates that the of before Corona pandemic scores are higher than that of the during Corona pandemic

It follows from the results that the average value for the class that studied before Corona pandemic was 56.76, while the average value for during Corona pandemic class was 56.23 (see Table 1). This indicates that students' academic achievement before the Corona pandemic was a little higher than during the Corona pandemic.

However, statistical significance obtained from (Table 2) states that, no statistically significant difference in academic achievement between students who studied e-learning and face-to-face education in Fundamentals of Nursing 2 course before and during the Corona pandemic.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Academic achievement	Equal variances assumed	7.643	0.006	0.178	146	0.859	0.528	2.963	-5.329	6.385
	Equal variances not assumed			0.167	97.605	0.868	0.528	3.164	-5.750	6.806

Table 2 Independent Samples Test

Since $\alpha \leq 0.05$ was considered as statistically significant, Where was the level of significance for the t-test ($p=0.868$) $> \alpha$, so H_0 is accepted, which means that the transition to e-learning rather than face-to-face education had no negative impact on academic achievement, it was found that nursing students academic achievement is not negatively affected by the Corona pandemic.

Discussion

Based on the analysis, the means of scores for students in face-to-face education before the Corona pandemic were a little higher than the means of scores for students in e-learning education during the Corona pandemic. To avoid confusion, were used an independent t-test to compare average scores and discovered from Table 2 that there was no statistical difference

because the significance level for the t-test (p) was more than the significance level of the study hypothesis (α). It follows that there is no significant difference between the academic achievements of students before the Corona pandemic and during the Corona pandemic in the study of Fundamentals of Nursing 2 course since there was a similarity in their statistical scores. This could be because both modes of instruction were equally effective in enhancing student understanding.

So, the results showed that there is no statistically significant difference in academic achievement between students who studied e-learning and face-to-face education.

The results of the current study were in agreement with the results of a study done by (Kaymak et al. 2021), and (Lestari et. al 2022). It showed that there was no significant difference in students' achievement in the case of e-learning or

face-to-face education. These two methods have the same effectiveness in enhancing students' understanding of the topics as examined by (Kaymak et al. 2021). In general, students had a positive response to online learning management, despite facing some challenges (Lestari et. al 2022).

Conclusion

In this study, was concluded that there is no significant difference in students' academic achievement between face-to-face education before the Corona pandemic and e-learning during the Corona pandemic. The t-test scores and means of both groups indicated that there is no significant advantage of one method of teaching over the other, and this indicates that the students who studied by the e-learning method

learn as effectively as the students who studied by the face-to-face teaching method. Therefore, the transition to e-learning instead of face-to-face education did not affect the student's academic achievement scores. In this way, e-learning can be harnessed and developed to advance the nursing education agenda. However, were recommends that other factors affecting academic achievement should be evaluated in future studies. Also, were recommend the use of larger samples and higher levels of classes. On the other hand, this study is limited to evaluating the effect of e-learning on students' academic achievement in the Fundamentals of Nursing 2 course before and during the Corona epidemic. Further studies is recommended to the impact of e-learning on students' academic achievement on other courses.

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