

Preferences and Experiences of Maternity and Medical Surgical Nursing Students Regarding Traditional, Blended and E-Learning during COVID-19 Pandemic

Hala Mohamed Abdelhamed⁽¹⁾, Eman A. Fadel⁽²⁾, Shaymaa Elsayed Mosaad⁽³⁾

(1,3) Medical Surgical Nursing, Faculty of Nursing, Mansoura University, Egypt.

(2) Woman's Health and Midwifery Nursing, Faculty of Nursing, Mansoura University, Egypt.

Corresponding Author Email: e_a@mans.edu.eg

Abstract

Background: The COVID-19 outbreak had a tremendous impact on the world of education. **Aim:** To assess maternity and medical surgical nursing students' preferences and experiences regarding traditional, blended and e-learning during COVID-19 pandemic in the Faculty of Nursing, Mansoura University. **Tools:** Three tools were used for data collection; the first tool was a student demographic questionnaire; the second and third tools were questionnaires to assess the students' preferences and experiences regarding the three methods of learning. **Results:** 60.8% of the studied students preferred blended learning. 87.8% of the studied students had previous negative experiences regarding traditional learning, 58.2% of them had a negative experience regarding e-learning, and 67.1% of them had a positive experience regarding blended learning. **Conclusion:** Concerning the students' preferences, just over three-fifths of the studied students preferred blended learning, around one-third preferred traditional learning and a minority of them preferred e-learning. Regarding the students' experiences, the majority of the studied students had a negative experience regarding traditional learning, around three-fifths of them had a negative experience regarding e-learning and more than two-thirds of them had a positive experience regarding blended learning. In general, the studied students preferred and had a positive experience regarding blended learning. **Recommendation:** Continuing following blended learning in the higher education faculties and institutions according to students' preferences and positive experiences in learning and not being dependent on traditional learning or e-learning delivered separately.

Keywords: Blended learning, E-learning, Experience, Preferences, Traditional Learning.

Introduction

The COVID-19 pandemic has caused a large disruption in education systems, affecting nearly 1.6 billion learners in more than 200 countries. Closures of institutions, schools and other places of learning have impacted more than 94% of the world's student population (Pokhrel & Chhetri, 2021). Restrictive movement policies and social distancing have disturbed traditional educational practices significantly. Many schools, faculties and universities have discontinued face-to-face teaching and the need to apply alternative educational methods has arisen (Kaur et al., 2020).

In this context, the educational institution inclined to employ web technology in the educational ground. With this new educational system the term e-learning appeared. E-learning is defined as an educational strategy in which the learner is geographically far from the teacher, and the entire educational process is conducted across the internet and communication networks (Singh,

Steele, & Singh, 2021). In e-learning the teacher is the observer and provider of information, a learner simultaneously and a guide to the learning process. Therefore, the teacher has to train the students on how to use the electronic platform. This help to increase the level of cooperation between the teacher and the students' families (Mishra, Gupta, & Shree, 2020). Electronic learning lead to enhancements in the teaching process, better connections between teachers and students, independently of time and place and faster availability of knowledge. E-learning makes it possible to adapt educational content to fit the learning styles of students (Dalmolin et al., 2018).

All over the world, all faculties adopted the e-learning platform after the COVID-19 pandemic either in the teaching process or in the evaluation process. Meanwhile, electronic learning environments present some weaknesses such as impeding the socialization process of individuals resulting from the lack of face-to-face communication. Therefore, the need to develop a

new educational environment arose that combines classical learning environments with electronic learning. It has been described as blended learning, mixed learning or hybrid learning (**Kacetl & Semradova, 2020**). The main goal of the blended instruction was to overcome the disadvantages of purely online instruction. Since both pure e-learning and traditional learning involve some strengths and weaknesses, it is better to combine the strengths of both learning environments to create a new method of delivery termed blended learning (**Berga et al., 2021**).

Blended learning enhances the utilization of the benefits of both online and traditional learning. Using multiple communication channels can significantly enhance the learning experience. Depending on online learning practices, students are unable to have the satisfactory benefit of practicing lab skills, while blended learning offers an effective teaching method for students with different self-regulation skills and learning styles (**Keskin & Yurdugül, 2019**). Most educational institutions swiftly converted to totally online learning to keep students learning for success and to safeguard students from illness outbreaks throughout the world (**Dhawan, 2020**).

At Mansoura University, the online platform that is usually used to produce electronic environment is called MOODLE which is an acronym for Modular Object-Oriented Dynamic Learning Environment. Moodle is a free open tool of (LMS) learning management system, which is controlled by Mansoura University (**Fadel, Elbilgahy, Ibrahim, & Elmashad, 2019**). This platform already was utilized even before the COVID-19 pandemic. All academic departments had either one or more electronic course which was produced by the teacher with the assistance of the central and faculty information technology units. After the pandemic, as a response to the risk of transmission of the COVID -19 outbreaks, the government has anticipated the implementation of work from home (**Mostafa, Fouad, Samy & Fadel, 2021**).

Significance of the study:

The emergence of the COVID-19 pandemic resulted in a sudden transition to remote learning. These circumstances presented many challenges for higher education faculties and students around the world but especially for nursing education programs (**Wallace et al.,**

2021). Due to the increasing number of students in nursing education, the need to support traditional education and to provide blended or distance learning have incited the trend of utilizing e-learning in training nurses. The more attention to interaction, particularly in practical courses, and using materials enriching the course content that may positively influence students' preferences and experiences during learning nursing courses (**Olum et al., 2020**). So, the current study will clarify the preferences and experiences of nursing students especially on maternity and medical surgical learning to recommend the most appropriate method of learning in undergraduate nursing education based on their needs and preferences after experiencing the different learning strategies.

Aim of the study

The current study was conducted to assess the maternity and medical surgical nursing students' preferences and experiences regarding traditional, blended and e-learning during COVID-19 pandemic.

Research question

What are the maternity and medical surgical nursing students' preferences and experiences regarding traditional, blended and e-learning during COVID-19 pandemic?

Operational definition:

Traditional learning: the alternative term of the traditional learning is face-to-face learning, in which the students meet with the teacher in the lecture room and relying on the teacher.

E-learning: The learning and the teaching process are taken entirely over the internet via the electronic platform. The teacher and students do not meet face to face. All course content is handled via forums, virtual meeting, electronic quizzes or exams. In which all the course content either theoretical or practical is provided online only. The theoretical content is illustrated via Microsoft teams meeting, in which the lecturer explains the theoretical content and answer the students' questions during the virtual session. The practical content was recorded as a video by Mansoura University information and technology center

and uploaded via the university you tube channel. In addition the drive link of the recorded theoretical content and the university you tube link of the practical videos were upload on the electronic platform.

Blended learning: It is a mixture of traditional and e-learning. In the current study the blended learning takes the form of a combination between the traditional classroom (face-to-face for the clinical skills practices) and the online learning for theoretical content of the course.

Maternity and medical surgical nursing students: Students that studied or still studying the nursing courses related to maternity or medical surgical nursing department and had been taught by traditional, blended and E-learning.

Subjects and Methods

Research design

A descriptive cross-sectional study was utilized. It is an observational study in which the students' preferences and experiences regarding traditional, blended and e-learning during the period of the beginning of June 2021 to the end of September 2021 in the Faculty of Nursing, Mansoura University were collated. The cross-sectional study design is best used when the researchers are interested to gather information at one point in time; it provides a snapshot of the population.

Study Setting

The study was conducted at Faculty of Nursing, Mansoura University. The faculty consists of 4 floors. The ground floor consists of two amphitheatres, activities' room for student's welfare, students' affairs offices and other offices for accounts and faculty staff affairs, and bathroom. The first floor consists of one amphitheater, two computer laboratories, one conference hall, and bathroom. The second floor consists of Dean's office, two exam control rooms, digital library, book library, office for vice dean for community health and environmental affairs, faculty secretary office, quality and accreditation unit, faculty council hall, public health unit and two bathrooms. The third floor consists of seven nursing skill labs, office for vice dean for

students affairs, postgraduate affairs office, and bath room. The fourth floor consists of two language laboratories, meeting room, office for vice dean of post graduate studies, staff offices, ethical committee office, legal affairs office, and bathroom.

Sampling

A non-probabilistic purposive sampling technique was used in the study. Based on the flow rate of students admitted to the Faculty of Nursing at Mansoura University within different levels of study, it was found that 1865 students were admitted to the Faculty of Nursing in the years 2020–2021, with a statistical power analysis of 80% and a confidence level of 95%. A total sample of 237 students, who studied previously on the maternity and medical surgical courses with traditional, blended and e-learning methods was included in the study. First level students were excluded as they didn't experience yet the three learning methods at university.

Sample Size: Based on data from literature (*Weldy et al., 2018*), considering level of significance = 5%, Power = 80%, Type of test = two-sided, the following formula is used for calculation of sample size: $n = [2(Z\alpha/2 + Z\beta)^2 \times p(1-p)] / (p_1 - p_2)^2$, where, p is the pooled proportion while $Z\alpha/2$ and $Z\beta$ are 1.96 and 0.84 respectively. Thus, $n = [2(1.96 + 0.84)^2 \times 0.76(1-0.76)] / (0.11)^2 = 236.4$. Based on above formula the sample size required is 237.

Data Collection Tools: Three tools were used in the current study. They were designed in Google Forms and provided online to collect data.

The first tool was the student's demographic questionnaire: It was developed by the researchers in the Arabic language to collate the following: the demographic characteristics of students such as age, gender, marital status, level of study, residence, etc.

The second tool was a preference questionnaire regarding the three types of learning:

Preference Scale to address traditional, blended and e-learning: The scale consists of 12 items; it was adapted from *Amir et al. (2020)* and modified by the researchers to

assess the preference aspects of students for traditional, blended and e-learning.

Scoring system:

The preference scale to address traditional, blended and e-learning consisted of 12 questions; the questionnaire items were scored 4, 3, 2, and 1 for the responses “strongly agree, agree, disagree, and strongly disagree” for each item. The responses strongly agree and agree were considered to indicate a preference for the particular learning method in the comparative item.

The third tool was the student experiences questionnaire: The scale was adapted from Anderson (2012). It was translated from English to Arabic and re-translated into English by a bilingual expert. It contains three parts:

(Part one) Experience Scale of Traditional Learning:

The scale consists of 38 items to assess the traditional learning experience aspect.

Scoring system:

The Experience Scale of Traditional Learning consisted of 38 questions; the questionnaire items were scored 4, 3, 2, and 1 for the responses “strongly agree, agree, disagree, and strongly disagree” for each area. These scores were converted into a percentage score. Total possible score = 152, the total score was considered positive if the percentage score was 60% or more and negative if less than 60% (less than 91).

(Part two) Experience Scale of Blended Learning:

The scale consists of 42 items to assess blended learning experience aspect.

Scoring system:

The Experience Scale of Blended Learning consisted of 42 questions; the questionnaire items were scored 4, 3, 2, and 1 for the responses “strongly agree, agree, disagree, and strongly disagree” for each area. These scores were converted into a percentage score. Total score = 168; the total scores were considered positive if the percentage score was 60% or

more and negative if less than 60% (less than 101).

(Part 3) Experience Scale of E-Learning:

The scale consists of 42 items to assess the e-learning experience aspect.

Scoring system:

The Experience Scale of e-learning consisted of 42 questions; the questionnaire items were scored 4, 3, 2, and 1 for the responses “strongly agree, agree, disagree, and strongly disagree” for each area. These scores were converted into a percentage score. Total score =168; the total scores were considered positive if the percentage score was 60% or more and negative if less than 60% (less than 101).

Validity

The validity of the tool will be evaluated by a panel of five nursing experts in the field of woman’s health and midwifery nursing and medical surgical nursing. Their suggestions will be made.

Test reliability

Testing the reliability of the proposed tools was done by Cronbach's alpha test, the preference scale reliability was (0.63), and the experience scale reliability was (0.75).

Pilot Study: A pilot study was applied on 24 students (10%) within the selected criteria to test the applicability of the tools. Then those who participated in the pilot study were excluded from the main study sample. Modifications of tools were done accordingly.

Ethical consideration:

Data collection was started after obtaining a formal authorization from ethical committee, Faculty of Nursing, Mansoura University, Egypt. The researchers sent the link of questionnaire to all students enrolled at the Faculty of Nursing, Mansoura University, as the fourth researcher is manager of Faculty E-learning unit via the official student channel for each level after clarifying the purpose of the study. Then, written consent was obtained via Google forms. Participation in the study was voluntary. Moreover, the students were assured of confidentiality and anonymity of collected

data as well as were informed of their right to withdraw from the study.

Research process:

The current study was conducted from the beginning of June 2021 to the end of September 2021. Based on the review of the literature, the data collection tools were developed, adapted, and prepared in a Google form. Official permission was obtained from the Ethical Committee, Faculty of Nursing, Mansoura University, Egypt. The online questionnaires were available during the period of data collection.

Data entry and analysis

The researchers exported the data from the collected questionnaire into Microsoft Excel (Microsoft Office 2013; Microsoft Corporation, Redmond, WA). The data were coded and then analyzed using SPSS (version 21; IBM Corp., Armonk, NY, USA). The normality of data was first tested using the one-sample Kolmogorov–Smirnov test.

Qualitative data were described using numbers and percentages. Continuous variables were presented as mean \pm standard deviation. The two groups were compared using the Student's t-test, whereas comparisons between more than two groups were tested using

analysis of variance. The results were considered significant when the probability of error was less than 5% ($p \leq 0.05$). The smaller the p -value obtained, the more significant the results.

Results

Table 7. shows that 93.2%, 93.2%, and 91.1% of the studied students had a positive experience regarding e-learning as they reported that the e-learning balanced practical and theoretical experience, this method of learning made the subject matter easier to learn and had more time to review all of the learning materials after the e-class. Meanwhile, 94.5%, 94.5%, 92.8%, 92.4%, 92.4%, 92.0%, 92.0%, and 92.0%, respectively, had a negative experience regarding e-learning as they reported that this method did not enhance teaching and learning, did not consider the individual differences between students, was not flexible with respect to time and place, they did not have time to prepare learning materials before online group discussion, made students feel isolated, the disadvantages of this method outweigh the advantages, and they would not like other subjects to be taught using this method, as they did not have time to prepare learning materials before the online group discussion.

Table (1): Demographic characteristics of studied nursing students (N = 237 students)

Items of Demographic Characteristics	NO.	%
Age (Years)		
Less than 20	179	75.5
More than 20	58	24.5
Mean \pmSD	19.8 \pm 0.8	
Gender		
Male	72	30.4
Female	165	69.6
Educational Level		
Second Level	106	44.7
Third Level	73	30.8
Fourth Level	58	24.5
Residence		
Urban	87	36.7
Rural	150	63.3
Marital Status		
Single	226	95.4
Married	11	4.6

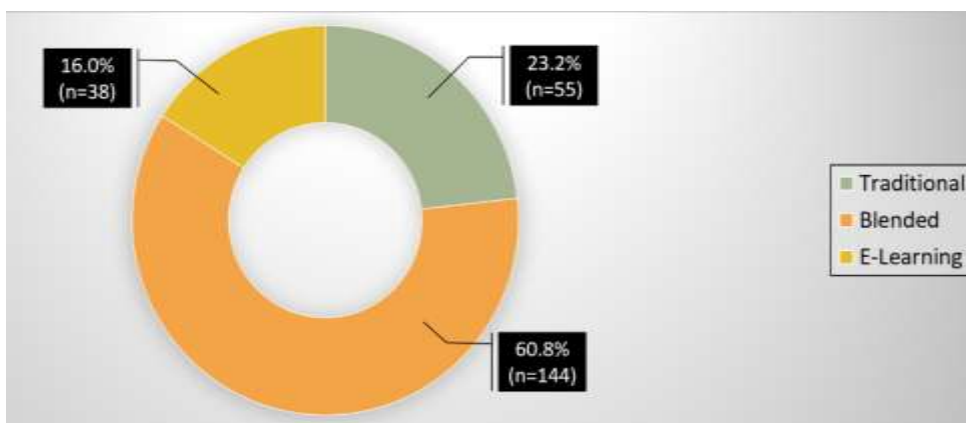


Figure 1. Distribution of preferred learning type among the studied students (N = 237 students)

Table (2): Preference Scale for Traditional Learning for the studied nursing students (N = 237 students)

Items of Traditional Learning Preference Scale	Strongly Disagree		Disagree		Neutral		Agree	
	NO.	%	NO.	%	NO.	%	NO.	%
Suitable for Lecture	31	13.1	199	84.0	4	1.7	3	1.3
Suitable for Exam	205	86.5	10	4.2	8	3.4	14	5.9
Fewer Constraints	131	55.3	66	27.8	32	13.5	8	3.4
Not Stressful	23	9.7	130	54.9	43	18.1	41	17.3
Sufficient Learning Time	46	19.4	117	49.4	31	13.1	43	18.1
Sufficient Review Time	110	46.4	105	44.3	11	4.6	11	4.6
Good Communication	0	0.0	95	40.1	101	42.6	41	17.3
Likable	202	85.2	22	9.3	6	2.5	7	3.0
Sustainable	23	9.7	214	90.3	0	0.0	0	0.0
Efficient	30	12.7	189	79.7	10	4.2	8	3.4
Satisfaction	52	21.9	158	66.7	27	11.4	0	0.0
Motivation	24	10.1	202	85.2	11	4.6	0	0.0

Table (3): Preference Scale for Blended Learning score for studied nursing students studied (N = 237 students)

Items of Blended Learning Preference Scale	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No.	%	No.	%	No.	%	No.	%	No.	%
Suitable for Lecture	6	2.5	2	0.8	5	2.1	214	90.3	10	4.2
Suitable for Exam	6	2.5	5	2.1	6	2.5	16	6.8	204	86.1
Fewer Constraints	8	3.4	10	4.2	4	1.7	18	7.6	197	83.1
Not Stressful	5	2.1	7	3.0	4	1.7	31	13.1	190	80.2
Sufficient Learning Time	7	3.0	6	2.5	7	3.0	181	76.4	36	15.2
Sufficient Review Time	4	1.7	5	2.1	6	2.5	28	11.8	194	81.9
Good Communication	0	0.0	8	3.4	196	82.7	21	8.9	12	5.1
Likable	5	2.1	4	1.7	4	1.7	23	9.7	201	84.8
Sustainable	4	1.7	5	2.1	6	2.5	204	86.1	18	7.6
Efficient	5	2.1	5	2.1	4	1.7	210	88.6	13	5.5
Satisfaction	7	3.0	4	1.7	5	2.1	10	4.2	211	89.0
Motivation	5	2.1	5	2.1	11	4.6	15	6.3	201	84.8

Table (4): Preference Scale for E-Learning score for studied nursing students (N = 237 students)

Items of E-learning Preference Scale	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No.	%	No.	%	No.	%	No.	%	No.	%
Suitable for Lecture	4	1.7	3	1.3	220	92.8	10	4.2	0	0.0
Suitable for Exam	0	0.0	13	5.5	214	90.3	7	3.0	3	1.3
Fewer Constraints	0	0.0	200	84.4	17	7.2	10	4.2	10	4.2
Not Stressful	16	6.8	15	6.3	200	84.4	4	1.7	2	.8
Sufficient Learning Time	0	0.0	225	94.9	12	5.1	0	0.0	0	0.0
Sufficient Review Time	5	2.1	7	3.0	13	5.5	212	89.5	0	0.0
Good Communication	216	91.1	13	5.5	0	0.0	5	2.1	3	1.3
Likable	3	1.3	12	5.1	214	90.3	3	1.3	5	2.1
Sustainable	4	1.7	213	89.9	12	5.1	3	1.3	5	2.1
Efficient	0	0.0	7	3.0	215	90.7	10	4.2	5	2.1
Satisfaction	5	2.1	30	12.7	188	79.3	7	3.0	7	3.0
Motivation	6	2.5	26	11.0	192	81.0	5	2.1	8	3.4

Table (5): Experience Scale for Traditional Learning score for nursing students studied (N = 237 students)

Items of Traditional Learning Experience Scale	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
I do not experience any problems	6	2.5	186	78.5	25	10.5	11	4.6	9	3.8
I do not experience stress	13	5.5	193	81.4	13	5.5	12	5.1	6	2.5
I have more time to prepare learning materials before group discussion	9	3.8	14	5.9	29	12.2	177	74.7	8	3.4
I have more time to review all of the learning materials after class	6	2.5	14	5.9	19	8.0	193	81.4	5	2.1
This learning method gives similar learning satisfaction to other learning methods	0	0.0	210	88.6	13	5.5	8	3.4	6	2.5
This learning method gives motivation for self-directed learning and eagerness to prepare learning materials before group discussion	4	1.7	216	91.1	8	3.4	4	1.7	5	2.1
Communication with lecturers is easy to access	12	5.1	14	5.9	9	3.8	197	83.1	5	2.1
I study more efficiently with this method	6	2.5	208	87.8	10	4.2	9	3.8	4	1.7
This method of learning increases the achievement	0	0.0	219	92.4	5	2.1	6	2.5	7	3.0
This method enhances both teaching and learning	4	1.7	216	91.1	7	3.0	4	1.7	6	2.5
This method of learning considers the individual differences between students	4	1.7	214	90.3	8	3.4	7	3.0	4	1.7
Using this method makes me feel isolated	6	2.5	10	4.2	213	89.9	3	1.3	5	2.1
This method gives me more room to express myself	4	1.7	216	91.1	5	2.1	7	3.0	5	2.1
I would like other subjects to be taught using this method	9	3.8	213	89.9	8	3.4	4	1.7	3	1.3
This method makes me feel self-confident	7	3.0	211	89.0	6	2.5	6	2.5	7	3.0
This method of learning makes the subject matter easier to learn	5	2.1	217	91.6	5	2.1	5	2.1	5	2.1
The advantages of this method outweigh the disadvantages	5	2.1	222	93.7	5	2.1	2	0.8	3	1.3
Learning by this method saves me plenty of time	5	2.1	218	92.0	7	3.0	4	1.7	3	1.3
This method is flexible with respect to time and place	5	2.1	5	2.1	4	1.7	219	92.4	4	1.7
Balance of practical and theoretical experience	0	0.0	0	0.0	237	100.0	0	0.0	0	0.0

Table (6): Experience Scale to Blended Learning score for studied nursing students N = 237 students)

Items of Blended Learning Experience Scale	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Items of Experience Scale for Blended Learning										
I do not experience any problems	5	2.1	5	2.1	7	3.0	215	90.7	5	2.1
I do not experience stress	5	2.1	7	3.0	8	3.4	214	90.3	3	1.3
I have more time to prepare learning materials before group discussion	3	1.3	2	0.8	3	1.3	224	94.5	5	2.1
I have more time to review all of the learning materials after class	8	3.4	9	3.8	8	3.4	206	86.9	6	2.5
This learning method gives similar learning satisfaction to other learning methods	6	2.5	4	1.7	4	1.7	212	89.5	11	4.6
This learning method gives motivation for self-directed learning and eagerness to prepare learning materials before group discussion	5	2.1	5	2.1	7	3.0	207	87.3	13	5.5
Communication with lecturers and fellow students is easy to access	7	3.0	5	2.1	6	2.5	210	88.6	9	3.8
I study more efficiently with this method	6	2.5	7	3.0	7	3.0	203	85.7	14	5.9
This method of learning increases achievement	0	0.0	0	0.0	0	0.0	237	100.0	0	0.0
This method enhances both teaching and learning	8	3.4	4	1.7	6	2.5	206	86.9	13	5.5
This method of learning takes into account the individual differences between students	5	2.1	4	1.7	5	2.1	215	90.7	8	3.4
The disadvantages of this method outweigh the advantages	213	89.9	10	4.2	8	3.4	2	0.8	4	1.7
This method gives me more room to express myself	6	2.5	3	1.3	4	1.7	217	91.6	7	3.0
I would like other subjects to be taught using this method	4	1.7	5	2.1	9	3.8	205	86.5	14	5.9
This method makes me feel self-confident	5	2.1	7	3.0	5	2.1	213	89.9	7	3.0
This method of learning makes the subject matter easier to learn	2	0.8	2	0.8	4	1.7	223	94.1	6	2.5
Using this method makes me feel isolated	6	2.5	5	2.1	3	1.3	212	89.5	11	4.6
Learning by this method saves me plenty of time	3	1.3	4	1.7	0	0.0	219	92.4	11	4.6
This method is flexible with respect to time and place	219	92.4	9	3.8	2	0.8	3	1.3	4	1.7
Balancing of practical and theoretical experience	4	1.7	3	1.3	4	1.7	218	92.0	8	3.4

Table (7): Experience Scale for E-Learning score for studied nursing students N = 237 students)

Items of Students' E-learning Experience Scale	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
I do not experience any problems	5	2.1	215	90.7	9	3.8	8	3.4	0	0.0
I do not experience stress	8	3.4	212	89.5	10	4.2	7	3.0	0	0.0
I have more time to prepare learning materials before online group discussion	5	2.1	218	92.0	10	4.2	4	1.7	0	0.0
I have more time to review all of the learning materials after the online class	4	1.7	5	2.1	0	0.0	216	91.1	12	5.1
I am more satisfied about this learning method than other types	6	2.5	215	90.7	7	3.0	5	2.1	4	1.7
This learning method gives motivation for self-directed learning and eagerness to prepare learning materials before group discussion	0	0.0	213	89.9	8	3.4	9	3.8	7	3.0
Communication with teachers is easy to access	0	0.0	218	92.0	11	4.6	3	1.3	5	2.1
I study more efficiently with this method	5	2.1	216	91.1	4	1.7	7	3.0	5	2.1
This method of learning increases achievement	5	2.1	215	90.7	7	3.0	10	4.2	0	0.0
This method enhances both teaching and learning	4	1.7	224	94.5	3	1.3	3	1.3	3	1.3
This method of learning considers the individual differences between students	0	0.0	224	94.5	3	1.3	5	2.1	5	2.1
The advantages of this method outweigh the disadvantages	0	0.0	218	92.0	5	2.1	8	3.4	6	2.5
This method gives me more room to express myself	3	1.3	224	94.5	2	0.8	3	1.3	5	2.1
I would like other subjects to be taught using this method	7	3.0	218	92.0	3	1.3	4	1.7	5	2.1
This method makes me feel self-confident	5	2.1	219	92.4	4	1.7	4	1.7	5	2.1
This method of learning makes the subject matter easier to learn	8	3.4	0	0.0	5	2.1	221	93.2	3	1.3
Using this method makes me feel isolated	0	0.0	4	1.7	5	2.1	219	92.4	9	3.8
Learning by this method saves me plenty of time	4	1.7	219	92.4	4	1.7	5	2.1	5	2.1
This method is flexible with respect to time and place	10	4.2	220	92.8	0	0.0	3	1.3	4	1.7
This method balances practical and theoretical experience	2	0.8	3	1.3	0	0.0	221	93.2	11	4.6

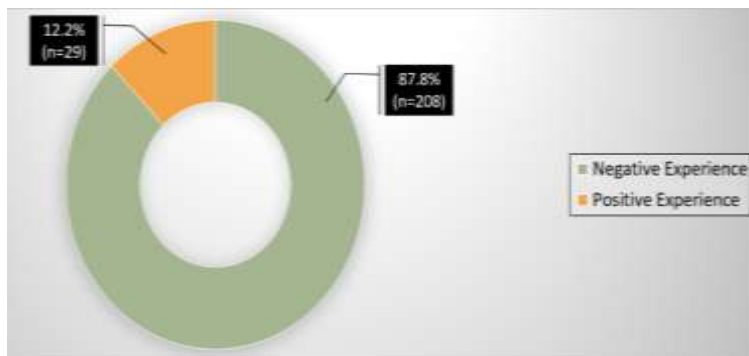


Figure 2. Total Experience Scores for Traditional Learning

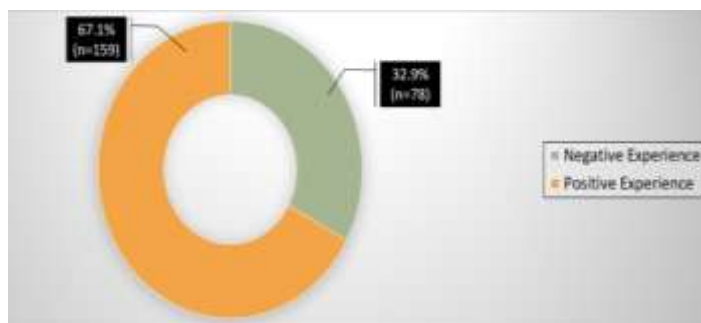


Figure 3. Total Experience Scores for Blended Learning

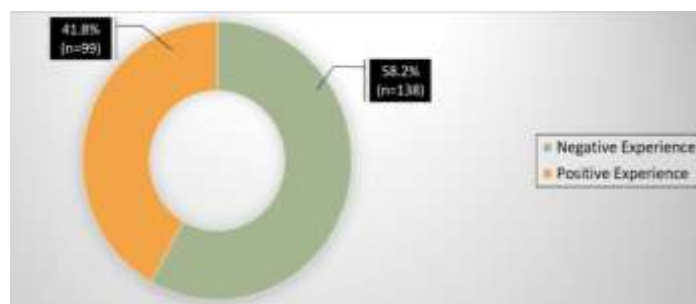


Figure 4. Distribution of E-Learning Learning Experience score

Discussion

The current study aimed to assess maternity and medical surgical nursing students' preferences and experiences regarding traditional, blended and e-learning. The current study question was answered. Regarding the first part of the question, the current study findings revealed that slightly above three-fifths of the students studied preferred blended learning, over one-third preferred traditional learning and a minority of them preferred e-learning. Concerning the second part of the study question, the current study findings revealed that the majority of the studied students had a negative experience regarding traditional learning, around three-fifths of them had a negative experience regarding e-learning while more than two-thirds of them had a positive experience regarding blended learning.

The current study finding indicated that a minority of the studied students' preferred traditional learning as it has sufficient learning time, has good communication between the lecturer and the students and it is not a stressful learning method. While, a majority of them do not prefer traditional learning as it is not

sustainable, not suitable for exams, not likable, not a motivational method, and not suitable for lectures. In the same line, **Naved et al., (2017)** who conducted a study in Saudi Arabia to identify critical success factors and validate them for successful implementation of the e-learning experience in education, reported that traditional learning had no flexibility, necessitated traveling for learning, and had a high cost in comparison to e-learning.

The current study findings revealed that most of the studied students preferred blended learning as it is suitable for lectures, efficient, sustainable and suitable for exams. The majority of them preferred blended learning as it is a satisfying, likable and motivational learning method. Incongruent with the current study findings, the results of a study conducted by **Nashir and Laili, (2021)** to explain blended learning as an adaptation form of traditional learning during the COVID-19 era indicated that blended learning improves students achievement and was a more attractive and effective learning method.

The current study findings revealed that the majority of the studied students preferred the e-learning as it has sufficient review time,

while in general, most of them did not prefer e-learning as it has no sufficient learning time, has bad communication, and is not a sustainable learning method. Incongruent with the current study findings, a study conducted by **Beunoyer, Dupéré, and Guitton (2020)** to explore the reciprocal impacts of the COVID-19 crisis and digital inequalities demonstrated that e-learning had some disadvantages, such as inequities in accessing technology or learning computer skills, and a lack of physical space between the teacher and the learner so, it is not sufficient or sustainable learning method

In addition, the current study findings revealed that the majority of the students who had positive experience regarding traditional learning reported that traditional learning was flexible concerning time and place, communication was easier, and more time was available to review all of the learning materials after the class. While most of the studied students who had a negative experience regarding traditional learning reported that the disadvantages of this method outweigh the advantages, traditional learning did not increase the achievement, did not save time, did not give motivation for self-directed learning or for eagerness to prepare learning materials before group discussion, did not enhance teaching and learning, and did not consider the individual differences between students.

Along the same lines, a randomized controlled trial conducted by **McCutcheon et al. (2018)** found that traditional learning is less motivational and had lesser achievement than blended or e-learning. On the opposite side, a Canadian quasi-experimental study was conducted by **Berga et al. (2021)** on 187 nursing students to explore the differences in students' perceptions of blended learning compared to traditional learning. They found that there was no difference between blended learning and traditional learning in academic achievement outcomes. This difference may be attributed to unmeasured differences in instructional approach and teaching style, which may impact the results.

In addition, the current study revealed that most of the studied students had positive

experience regarding blended learning as they reported that the blended learning increased their achievement, provided a time to prepare the learning materials before group discussion, the blended learning made the subject matter easier to learn, learning by this method saved plenty of time, and the blended learning balanced the practical and theoretical experience.

At the same time, a longitudinal study in California conducted by **McCarthy and Schauer, (2020)** reported that blended learning increases the students' engagement in the learning process and improves their academic achievement. Another supported study conducted by **Leidl et al. (2020)** provided a comprehensive scoping review of the use of blended learning in undergraduate nursing education. They expanded the definition of blended learning to include decentralized, hybrid, and flexible learning. In addition, a randomized controlled trial was conducted by **Moon and Hyun (2019)** to investigate the nursing students' attitudes toward blended learning. In their conclusion, nursing students receiving blended education reported a more positive experience than those in the control group who received a traditional education. Most of them had a negative experience regarding e-learning as they reported that this method did not enhance teaching and learning, did not consider the individual differences between students, was not flexible concerning time and place, did not allow time to prepare learning materials before the online group discussion, made students feel isolated, the disadvantages of this method outweigh the advantages, they would not like other subjects to be taught using this method, and they did not have time to prepare learning materials before the online group discussion.

These study findings were incongruent with a descriptive study conducted in Pakistan by **Khan and Jumani (2012)** to investigate the use and effectiveness of e-learning and traditional learning at the higher education level. Participating students reported that e-learning is not a suitable mode of learning. Another supported study conducted by **Saha, Dutta and Sifat (2021)**, reported that using e-learning initially is not simple for all students as it increases the feeling of being lonely and

powerless while studying, and creates problems which exceed the advantages.

Based on an analysis of 15 national scientific articles obtained from 2020–2022 using the keyword ‘impact of the COVID-19 virus outbreaks on learning,’ it shows that online-based distance learning has many underlying weaknesses so that this method is considered less effective for use in the learning process (Ameli, Hasanah, Rahman, and Putra, 2020).

Thus, the aim of the current study was achieved through the study findings which revealed that blended learning was the preferred learning method followed by traditional learning and a minority of students preferred e-learning. In addition, a majority of the students had a negative experience regarding traditional learning, around three-fifths of them had a negative experience regarding e-learning and more than two-thirds of them had a positive experience regarding blended learning.

Conclusions

Depending on the study findings, the study questions were answered. Concerning the students’ preferences, around three-fifths of the studied students preferred blended learning, around one-third preferred traditional learning and a minority of them preferred e-learning. Regarding the students’ experiences, the majority had a negative experience regarding traditional learning, around three-fifths had a negative experience regarding e-learning and more than two-thirds had a positive experience regarding blended learning. In general, the studied students preferred and had a positive experience regarding blended learning.

Recommendation

Continuing following blended learning in the higher education faculties and institutions according to students’ preferences and positive experiences in learning and not being dependent on traditional learning or e-learning delivered separately.

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