

## Challenges Facing Undergraduate Nursing Students related to Blended Learning during COVID -19 Pandemic

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### 1.ABSTRACT

**Background:** Higher education institutions are now using blended learning. Through the use of technology and the internet, it combines in-person instruction with online learning to enhance student learning by making it more student-centered model. **Aim:** To assess the challenges faced by undergraduate nursing students related to blended learning during COVID-19 pandemic. **Subjects and Method:** Design: a descriptive design was utilized. Subjects: (344) participants from undergraduate students in their first and second level who were enrolled in the study and applied blended learning approach for one semester during the academic year 2021–2022. Tools: structured interview questionnaire was used to gather data consists of two parts (assessment data sheet and questionnaire of blended learning challenges). **Results:** (31.1%) of the first- level students and (57.6%) of the second level students use the mobile as device for e-learning. (33.4%) of the first level students and (55.3%) of second level students had internet facility at home. (25%) of the first level students and (41%) of the second level students did not have computing experience. **Conclusion:** the most obstacles facing the students were infrastructure and technology, students 'characteristics dimension. There is no significant difference noticed between challenges and both of gender, residence and marital status either first or second level group. **Recommendation:** in the light of the current study, the institution must support students with facilities such as internet access and trained instructors that help them to use e-learning applications easily and correctly.

**Keywords:** Blended Learning, Challenges, COVID-19Pandemic, Undergraduate nursing students.

### 2.Introduction

Universities and other educational institutions have been shut down entirely as a result of the COVID-19 epidemic's global reformation of the education sector. For the learning process to continue, educational institutions must implement the finest learning models. Implementing the e-learning learning model is one way educational institutions can ensure the teaching and learning process runs smoothly (Batubara, Riyanda, Rahmawati, Ambiyar & Samala, 2022).

There has been a fundamental shift in how instructors deliver excellent content on different online platforms. Despite the difficulties faced by both teachers and students, online learning, distant learning, and continuing education have emerged as the cure for this unanticipated global epidemic. Both students and teachers may experience a completely different learning environment when switching from traditional face-to-face learning to online classes, but they are forced to adapt because there aren't many other options. Due to the

pandemic, universities and other educational institutions were forced to close. Schools and universities found e-learning platforms to be enormously beneficial in promoting student learning. The educational system and its teachers have adopted "Education in Emergency," requiring them to use a system for which they are not prepared, through a variety of online techniques (Pokhrel, & Chhetri, 2021).

In a virtual classroom setting where both sides participate, online learning is a process. The teacher is the instructor and the participants are the students as the students, with the instructor attempting to employ various ways to deliver the proper quantity of input and the participants hoping to take in as much knowledge as possible (Amiti, 2020). The two types of online learning are synchronous and asynchronous. Synchronous learning environments provide for immediate feedback, live lectures, and real-time interactions between teachers and students, in contrast to

asynchronous learning environments, which are less organized. In such a learning environment, learning resources are accessible through a variety of learning platforms and forums as opposed to live lectures or seminars. Instant feedback and timely action are impossible in this situation (Dhawan, 2020).

Applying online learning is problematic in many ways. Numerous challenges and troubles with modern technology exist, including issues with login, installation, download, audio, and visual quality, among others. Online courses can occasionally be boring and repetitive for students. Students seldom ever have the time to engage in online learning since it requires so much flexibility and time. The lack of individualized attention in online learning is a serious problem. Although it could be challenging to implement, students want two-way contact. Students must put what they learn into practice in order to maximize learning success. Sometimes the only knowledge available online is theoretical, which makes it difficult for students to practice and understand. The feeling of loneliness among students is present. Students' inability to balance their academic and personal life with their work, families, and social obligations was found in an online learning environment (Dhawan, 2020).

There is less face-to-face communication since e-learning environments have some negatives, like keeping people from socializing. Blended learning, which combines online and in-person learning, is becoming more popular in higher education (Gherheş, Stoian, Fărcaşiu, & Stanici, 2021). A concept in education called blended learning (BL) facilitates the incorporation of any technologies into the traditional classroom. No specific theory is connected to the term Blended (Rachmadtullah et al., 2020).

The key objective of blended learning was to address the negative aspects of pure online instruction. Because blended learning is a novel delivery technique that combines the benefits of the two learning environments, pure e-learning and traditional learning both have advantages and disadvantages that should be considered. As a result, blended learning has seen a sharp rise in use. Teachers believe that a range of delivery modalities can increase students' satisfaction with both their learning outcomes and the learning experience (Ashfaq, 2023), yet students still encounter many problems in its implementation. In light of the COVID-19 outbreak, the goal of the current study is to evaluate the difficulties that undergraduate nursing students are having with blended learning.

## 2.1Significance of the study

Following the WHO's declaration of the COVID-19 pandemic, many Arab nations lifted their precautions, and some countries completely shut down their institutions and schools while adopting electronic learning. Applying electronic learning during this virus pandemic has revealed a number of drawbacks and limits (Sintema, 2020)

Since no one can predict when this pandemic will end completely, preserving continuity of the educational process is necessary to overcome the drawbacks and limitations of electronic learning. To prevent students from missing an academic year, the Ministry of Higher Education in Egypt recognized the value of integrating blended learning in public universities (Zaharah, Kirilova & Windarti, 2020)

As a result, at the University of Mansoura the Faculty of Nursing planned to utilize blended learning to complete delivering all of their courses. Consequently, the current study attempted to evaluate the difficulties with blended learning that undergraduate nursing students experience during COVID-19 pandemic.

## 2.2Aim of the study:

The study aimed to assess the challenges faced by undergraduate nursing students related to blended learning during COVID-19 pandemic.

## 2.3Research Questions:

1. What are the common challenges facing undergraduate nursing students when using blended learning?
2. What is the correlation between socio demographic characteristics of the nursing students and their obstacles they faced when using blended learning?

## 3.Methods:

After receiving authorization to conduct research from the Faculty of Nursing's Research Scientific Ethical Committee during the academic year 2021–2022, students from each of the two academic years (first and second study level) were chosen using a convenience sampling technique. The sample was comprised of 344 students (218 from second-level students and 126 from first-level students) from 2590 students registered in Faculty of Nursing at University of Mansoura. Who agreed to participate in the research study and applied blended learning. To achieve the objectives of the study, the tool used is Structured Interview questionnaire adapted from (Abdelrazeq Mahmoud & Abdallah Abdel-Mordy, 2021). Includes two parts :Part 1: The assessment datasheet: It contains

the following details: name, age, sex, residence, academic year, device for engaging in online learning, home internet access, and years of computer experience.

### **Part 2: Questionnaire of blended learning challenges:**

The questionnaire is intended to find out what challenges nursing students may confront when using a blended learning approach to combat the COVID-19 Pandemic. A 33-question Questionnaire covering the difficulties nursing students face when using a blended learning system was used. It included five dimensions: seven categories for student characteristics, six for management and technical assistance, six for infrastructure and technology upgrades, seven for curriculum characteristics, and seven for instructor characteristics.

#### **Scoring style:**

A three-point Likert scale was used to grade the participants' responses, with "1" indicating disagreement, "2" corresponding to neutral and "3" denoting agreement. To get the average score, the item values were added together, and the result has been divided by the overall number of items. The numbers will then be transformed into a percentage. When using the integrated learning method, hurdles were faced if you received a score of 60% or more; if you received a score of less than 60%, there were no barriers (Abdelrazeck Mahmoud & Abdallah Abdel-Mordy, 2021).

**Validity of the tool:** The current study was sent to five academic nursing professionals in the field of nursing to determine the content validity of the tools. All adjustments were made in accordance with the academic nursing specialists' assessment of the content clarity and relevance of the material.

**Reliability:** Cronbach's alpha coefficient was used to evaluate the instruments' internal consistency in order to determine their dependability. It was (= 0.83) for the integrated learning challenges tool. This shows that the study tools are very credible.

**Statistical Design:** All statistical tests were conducted using SPSS for windows version 25.0 (SPSS, Chicago, IL). The data are expressed in frequency and percentage (quantitative variable).

#### **Pilot Study:**

After adapting the tools and before the real data gathering begin, a pilot study was done. The

pilot study was conducted on 10% of the sample (34) students who were included in the main study sample despite not making any changes to the study materials.

### **4.Results:**

Table 1: Show distribution of nursing students (first &second level) according to their socio demographic data. It was noticed from this table that more than two-fifths (46.5%) of second-level students and more than a quarter (27.6%) of first-level students were female, with a mean age and standard deviation of (20.440 0.723 - 18.658.508) respectively. Less than half (48.8%) of second-level residents and less than one-third (29.7%) of first-level residents are from rural areas, respectively. The percentage of single students ranged from 36.6% to 60.5% for first- and second-level students.

Table (2) shows the comparison of nursing students (first &second levels) according to challenges domains based on academic level. It was noticed that four-fifths (80.2%) of first-level nursing students and nearly two thirds (63.8%) of second-level nursing students faced challenges of student characteristics, more than two thirds first- and second-level nursing students (69.8% & 70.2%) faced technical managerial challenges, four-fifths (80.2%) of first-level nursing students and approximately three quarter of the second-level nursing students (75.3%) faced infrastructure and technology issues, nearly two thirds (63.5%) of first-level nursing students and more than two thirds(67.9%) of second-level nursing students encountered challenges of curriculum material, more than three fifth of first- and second-level nursing students (61.9% &65.1%) had challenges of instructors characteristics. There was no statistically significance between first and second levels with all challenges faced by them except students characteristics ( $p=0.001^*$ ).

Table (3) shows that the relationship between challenges that the nursing students faced and their socio-demographic characteristics. According to table (3), there was no statistically significant association between challenges and either gender, place of residence, or married status for the first-level group ( $p = 0.338$ ,  $p = 0.913$ ,  $p = --$ ) or the second-level group ( $p = 0.665$ ,  $p = 0.185$ ,  $p = 0.739$ ), respectively.

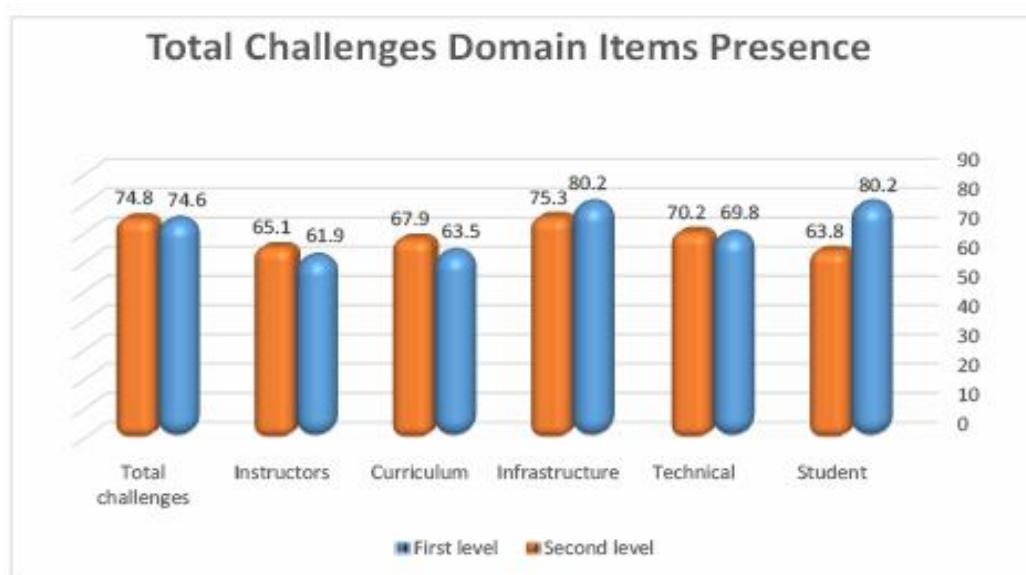
**Table 1: Distribution of Nursing Students According To Socio-Demographic Characteristics. (N=344).**

Items	The first level (n=126)		The second level (n=218)	
	No	%	No	%
<b>Mean age ± SD</b>	$18.658 \pm .508$		$20.440 \pm 0.723$	
<b>Gender</b>				
• Male	31	9	58	16.9
• Female	95	27.6	160	46.5
<b>Residence</b>				
• Rural	102	29.7	168	48.8
• Urban	24	7	50	14.5
<b>Marital status</b>				
• Single	126	36.6	208	60.5
• Married	0	0	10	2.9

**Table 2: Comparison of Nursing Students According to Challenges domains based on academic level. (N=344).**

Domains	The first level (n=126)				The second level (n=218)				Significance	
	Not exist		Exist		Not exist		Exist			
	No	%	No	%	No	%	No	%		
1. Students characteristics	25	19.8	101	80.2	79	36.2	139	63.8	$\chi^2=10.178$ $p=0.001^*$	
2. Technical managerial	38	30.2	88	69.8	65	29.8	153	70.2	$\chi^2=0.004$ $p=0.520$	
3. Infrastructure & technology	25	19.8	101	80.2	53	24.3	165	75.3	$\chi^2=0.910$ $p=0.207$	
4. Curriculum material	46	36.5	80	63.5	70	32.1	148	67.9	$\chi^2=0.691$ $p=0.237$	
5. Instructors characteristics	48	38.1	78	61.9	76	34.9	142	65.1	$\chi^2=0.362$ $p=0.313$	

**Figure (1):** show challenge domains for first- and second-year nursing students. Almost three quarter of first- and second-level nursing students (74.6%) (74.8%), respectively, faced all blended learning challenges

**Figure (1): Distribution of nursing students according to challenge domains that they faced.**

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**Table 3: The relation between challenges mean difference and socio-demographic characteristics for nursing students (first & second level).**

Items	First level Mean ± SD	Second level Mean ± SD
<b>Gender</b>		
• Male	$73.096 \pm 14.304$	$67.241 \pm 16.052$
• Female	$69.757 \pm 17.493$	$68.275 \pm 15.363$
<b>Significance</b>	$t=0.962$ , $p=0.338$	$t=0.975$ , $p=0.665$
<b>Residence</b>		
• Rural	$70.500 \pm 17.919$	$68.761 \pm 14.919$
• Urban	$70.761 \pm 13.912$	$65.440 \pm 17.299$
<b>Significance</b>	$t= -0.109$ , $p=0.913$	$t= 1.331$ , $p=0.185$
<b>Marital status</b>		
• Single	$70.579 \pm 16.772$	$67.923 \pm 15.551$
• Married	0	$69.600 \pm 15.543$
<b>Significance</b>	$t= ---$ , $p=---$	$t= -0.333$ , $p=0.739$

### 5.Discussion:

E-learning settings have a number of disadvantages, such as the inability of users to socialize, which limits face-to-face interaction (Kassymova, Vafazov, Pertiwi, Akhmetova, & Begimbetova, 2021). As a result, a new environment has emerged. This unique environment is known as blended learning. Blended learning, sometimes referred to as mixed learning or hybrid learning, is currently being used by higher education institutions as a novel teaching method for remote learning. The use of technology and the internet combines face-to-face instruction with online learning to improve student learning, inspire teachers to modify their pedagogical approaches, and ultimately shift learning towards a more student-centered model of instruction as opposed to a teacher-centered model (Othman, Elsayed, & Abdelkhalek, 2022). In light of this, this study attempted to evaluate the obstacles that undergraduate nursing students had with blended learning during the COVID-19.

The current study's findings revealed that the average age for the first level was 18.658.508 and the average age for the second level was 20.440 0.723. These conclusions are supported by the fact that the study's participants were selected from the first and second levels of the nursing faculty, with the second level receiving the bulk of the participants due to their older demographic. A study by (Ghazal, Al-Samarraie, and Aldowah, 2018) that found that most students were between the ages of 18 and 25 furthered these conclusions. However, there was disagreement with the findings of (Tangmunkongvorakul, Musumari, Tsubohara, Ayood, Srithanaviboonchai, et al 2020) who found that the respondents' mean age was from 16 to 17 years old.

The gender results of the current study showed more than one quarter of first level and more than two fifth of second level were female. This may be because more women than males prefer to register in nursing programs, which explains why there are more women on the faculty. These results are in line with those of (Othman, et al, 2022), who discovered that the majority of the study's participants were female. However, these were different from the study's findings (Li, & Che, 2022), which revealed that 40% of the students were female and 54% were male.

Regarding the common obstacles faced by nursing students during applying blended learning, The results of this study showed that the infrastructure and technology, student characteristics, technical support, and management support were the challenges that nursing students encountered most frequently, whereas the curriculum material and instructor traits were the least frequent.

According to the results of the current study, infrastructure, and technology were the first significant barriers. So that four-fifths of first-level nursing students and approximately three quarter of the second-level nursing students reported that they faced infrastructure and technology problems at the faculty of nursing such as inadequate guidance and training before using an e-learning platform and the use of online instructional materials is impeded by their home's inconsistent power supply. These might be because internet access encourages students to use blended learning effectively and achieve its educational goals, supporting the blended learning system. It is required for network connectivity for downloading applications and conducting contents and information of courses,

thus the availability of computers used and training for their use.

These finding supported by (Adeoye, Adanikin & Adanikin, 2020) who found that shortage in power supply have brought difficulty in powering of educational gadget such as smartphones, laptops and desktop computers needed for learning, capability of the lecturers in the development of the skills and training the learners on how to use platform effectively is a key challenge for implementing blended learning.

The second significant barrier found in the current study related to the characteristics of the students. It was found that four-fifths of first-level nursing students and nearly two thirds of second-level nursing students faced challenges of student characteristics such as inability to keep up with the pace of the course which may be a barrier to blended learning. This might be because, before the epidemic, students were more accustomed to learning traditionally and lacked the time management skills necessary for e-learning. These results are consistent with those of (Uzir, et al., 2020), who discovered the value of various time management and learning techniques to support efficient learning strategies to enhance self-regulation and academic performance for learners enrolled in an online learning environment.

Concerning the third significant barrier to blended learning is managerial and technical assistance barriers. According to the results of the current survey, more than two thirds of first- and second-level nursing students faced technical and managerial issues such as the network's speed makes it difficult to learn online. This finding might be explained by the fact that most students used mobile smartphones rather than high-bandwidth networks like Wi-Fi to access the internet. These results were in line with a study by (Windiarti, Fadilah, Dhermawati & Pratolo, 2019) who found that internet connection has an essential role, and it will give effect to the learning process.

Otherwise, the results show that the curriculum content and instructor qualities were the least problematic aspects of blended learning that were found in this study., nearly two thirds of first and second-level nursing students encountered problems concerning to curriculum material such as they reported that multimedia tools (flash animations, simulations, videos, audio, etc.) used to augment lecture notes may impede blended learning. This could be a result of the tools' uncommon use in the educational process as opposed to before. These findings are in

disagreement with those of (Sharma, et al., 2022), who discovered that two-thirds of the students preferred classroom learning together with notes and resources given through information communication platforms since they could utilize them to further develop their grasp of subjects.

The results of this study showed that, in terms of challenges posed by instructors' personalities, more than three fifth of first- and second-level nursing students reported that they have obstacles with instructors personalities such as it was not easy to communicate with their instructors when at home. This may be due to the social nature of humans, who learn best when teachers and students interact face-to-face rather than through distance learning. Teachers also play a significant role in curriculum development and course facilitation, providing feedback to students as needed. This finding is consistent with that of (Sharma, et al., 2022) who found that Off-line classes are preferred over online classes since student-teacher-peer interactions are better.

The findings of the current study indicated that there was no statistically significant difference between the first and second levels with all of the challenges faced by them, except student characteristics, based on the correlation between the study subjects' academic years and the difficulties they perceived with blended learning. This might be because each student has specific characteristics that will influence their readiness for utilizing blended learning and managing its difficulties. These findings were supported by (Shahmoradi, et al, 2018), who discovered that there was no discernible variation in the difficulties utilizing an e-learning system among the students who were studied during various academic years. However, (Abdelrazek Mahmoud & Abdallah Abdel Mordy, 2021) found that there were statistically significant variation between the studied students' academic years and their on line learning barriers. They weren't in agreement with this conclusion.

Regarding the correlation between socio demographic characteristics of the students and their obstacles they faced when using blended learning. The results of the current study showed that there was no evidence of a statistically significant relationship between the obstacles faced by the first or second-level groups of the students and their demographic features, such as residence, gender, and marital status. These results are reinforced by (Kutah, 2021), who discovered no statistically significant variations between the gender of nursing students in Jordanian universities

and their e-learning difficulties. However, (Martha, Junus, Santoso & Suhartanto, 2021) found that there were significant differences between male and female students as well as between students who lived in urban and rural areas in terms of their readiness for online learning and the challenges they faced.

### 6. Conclusion:

The most challenging factors for nursing students to overcome in order to enroll in their courses were found to be infrastructure and technology, student characteristics, and technical and administrative support. Additionally, there is no connection between the student's academic year and their challenges. The socio-demographic traits of the students, such as gender, place of residence, and marital status, have on relationship with the difficulties they face.

### 6. Recommendation:

#### A) Regarding the students:

1. Encourage students to share their thoughts about any problems they are having with blended learning.
2. Help students with time management by teaching them the skills that are necessary for blended learning to succeed.

#### B) For the institution and the administrative authorities :

1. Support from the administrative authority to address the challenges that hinder the implementation of blended learning.
2. Upgrade the faculty's hardware and network infrastructure, including connectivity, network speed, and device usage.
3. The faculty must provide students with resources like internet connectivity and qualified instructors who can guide them in using e-learning software correctly and easily to access their courses and get beyond their challenges. Consequently, for efficient blended learning system implementation .
4. Information communication technology courses should be included in the undergraduate curriculum, and all faculty members should adopt a positive attitude towards the use of information communication technology. This will increase the level of computer literacy and competency in information technology skills use.

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