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E-learning Education Problems Facing Nursing Students in Jordanian Universities During COVID-19 Pandemic Confinement

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Abstract---Background: E-learning is a relatively new and rapidly growing trend in nursing education, particularly in the aftermath of the COVID-19 epidemic. Thus, it is critical to accurately identify the problems and alternatives that obstruct and enforce the type of learning that intends to encourage and enable nursing students' usage of e-learning. Objective: This study examined the problems encountered by nursing students pursuing Baccalaureate degrees at four Jordanian public and private universities as they transitioned from face-to-face to e-learning education during the COVID-19 pandemic. Methods: The study enrolled 260 participants across four years from nursing faculties at four prominent public and private universities in Amman. They were asked to complete an electronic survey on a 30-item Likert scale. Result: While there are no statistically significant differences in the e-learning education problems encountered by nursing students at Jordanian universities according to gender or year level, this does not mean that the problems encountered by female and male students at various year levels are identical). There are statistically significant differences ($=0.05$) in the e-learning education problems faced by nursing students at Jordanian universities, with private universities outperforming public universities.

Keywords---education problems, e-learning, Jordan, nursing, problems.

Introduction

COVID-19 erupted globally in 2020. Many sectors have been affected in different ways during the COVID-19 pandemic, especially in health and education. Government policies have accomplished a shared aim to reduce the spread of coronaviruses by adopting measures to limit social interaction. In many

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countries, teaching and examinations were suspended face to face (Motiejūnaitė-Schulmeister & Crosier, 2020). The COVID-19 pandemic forced universities all over the world to move quickly to distance learning and to adopt electronic learning.

“Electronic (e) or online learning can be defined as the use of electronic technology and media to deliver, support and enhance both learning and teaching and involves communication between learners and teachers utilising online content”. E-learning offers students “easier and more effective access to a wider variety and greater quantity of information” (Mooney & Bligh, 1997). Numerous nursing faculties at universities must evaluate how to effectively continue their students' education. Professors, lecturers, and clinical instructors at nursing institutions have been forced to cope with e-learning overnight, despite the fact that not everyone was prepared. The same thing has happened with nursing students, who have been forced to transition from a paradigm focused on responsibilities and face-to-face learning to one that requires students participating actively in their education.

E-learning is not new to learners. On the other hand, COVID-19 is reviving interest in online teaching and learning possibilities, as well as related challenges. Luckily, wide range of e-learning problems brought about by the COVID-19 pandemic is met by deploying multiple educational solutions a range of modern tools (Rodrigues, Almeida, Figueiredo, & Lopes, 2019). Using these tools, it is easily conceivable to modify content previously taught face to face. Nevertheless, there are other critical activities involved in the learning process, such as clinical training and evaluation, can still be difficult without teachers being directly supervised. Especially that the presence of nursing students in centres of health (i.e hospitals, clinics) has been suspended in Jordan as well as in other countries (Jackson et al., 2020).

Consequently, to assist education and teaching authorities in allocating sufficient resources and reorienting university education for nursing students, understanding student experiences and expectations in the face of this important change is necessary. It is vital to draw lessons from those experiences and to determine one's strengths and weaknesses in order to manage this issue effectively in the near future. The focus of this study was to learn about the problems experienced by nursing students enrolled in Bachelor's nursing programs at four Jordanian public and private universities as a result of the abrupt switch from face-to-face to online education during the COVID-19 pandemic.

Literature Review

The ability to learn from anywhere is the clearest advantage of e-learning. Students will study at colleges and universities all over the world thanks to e-learning. Because of the Internet, distance learning can now take place in real time. Teachers can utilize live video conferencing to communicate with students who are unable to attend class due to scheduling or distance constraints. (Srichanyachon, 2014). Online education will help students as it is more adaptable, accessible, and convenient; they will have greater flexibility to work at

their own speed and on their own schedule. Students who study online will also save money on transportation. Furthermore, the average cost of online education could be lower than the cost of traditional on-site education (Distance Learning Plan, 2013). Administrators will be able to lower the cost of higher education (Dibiase, 2000). Institutions will save money and resources, and teachers will be able to update and revise their courses more easily (Hopey & Ginsburg, 1996; Owston, 1997).

Despite clear benefits of e-learning, transitioning from traditional to e-learning is not without challenges. Time and demand for students and educators are increasingly rising, leading sectors to develop new approaches for offering a more customized, self-directed learning experience (O'Doherty et al., 2018). Additionally, one of the most often stated difficulties is a lack of live, face-to-face interaction between students and instructors (Berge, 1998; Clay, 1999; Kirby, 1999).

Several variables might affect the success or failure of a e-learning curriculum from student-led factors to managerial factors (Greenhalgh, 2001; Bediang et al. 2013). "Cultural opposition" between employees, for instance, was at some point established as a barrier to the commitment of students to technology-based training; hence, the implementation of effective e-learning programmes may be crucial for personnel-orientated initiatives (Greenhalgh, 2001). Additional problems, such as time, technical matters and organizational values, were conveyed in previous studies (Fish & Gill, 2009; Hartmann, Braae, Pedersen & Khalid, 2017).

Following extensive analyses of literature associated with problems of e-Learning, it seemed that various specialists classified e-Learning problems into four distinct metrics or subjects, namely problems associated with students, problems associated with teachers, problems associated with infrastructure and technology, and problems associated with institutional management (Quadri, Muhammed, Sanobar, Qureshi, & Shah, 2017). Yet, the problems discussed in this study are restricted to students' problems using E-Learning.

Best to of the researchers' knowledge, there has been a dearth of research that have addressed e-learning problems faced by students. Only e-learning problems encountered by faculty or instructors have been discussed in local studies. Research, conducted by Aljaraideh and Bataineh (2019), addresses students' impressions of e-learning issues at Jerash University. The findings suggest that infrastructure is a significant impediment to the usage of e-learning at Jerash University. Furthermore, there are statistically substantial variations in the problems that students face when using e-learning based on gender and year level variables, with females and first-year students benefiting the most.

Previous research findings on local e-learning topics have been contradictory and incoherent (Almarabeh, 2014). Almarabeh (2014) investigated students' perspectives on e-learning at the University of Jordan. The research exposed some intriguing issues involving Jordanian students. To begin, Jordanian students are well-prepared to use an e-learning system because they are conscious of its advantages. The findings also show that perceived utility variables have a direct

influence on students' views regarding utilizing e-learning systems and their purported ease of use.

Mashhour and Saleh's (2010) research on e-learning in Jordanian universities, conversely, revealed widespread acceptance of e-learning in universities. However, several issues posed a threat to potential development. Inadequate infrastructure and a shortage of appropriate government and higher education administration support are among these concerns.

Al Adwan and Smedley (2012) also explored the aspects that might have an impact on e-learning at two Jordanian universities. According to the results, the most important issues are the organizational framework and the level of student technical skills. According to the report's results, development and training are necessary before successfully supporting the essential process of transitioning from traditional to e-learning.

Justification of study

This study offers future theoretical framework to elucidate e-learning education problems encountered by Jordanian nursing students during the COVID-19 pandemic, as well as to provide stakeholders at Jordanian universities with these problems so that preventive, directing, and remedial strategies can be developed to address them.

Research questions

- What are the e-learning education problems that nursing students in Jordanian universities faced during the COVID-19 pandemic confinement in terms of lectures, exams, clinical training, faculty members, curricula, textbooks & technological gadgets for online education?
- Is there any statistically significant difference in e-learning education problems based on university sector, gender, or year level?

Study objective

The purpose of this research is to gain an understanding of the e-learning problems and interactions encountered by nursing students enrolled in Baccalaureate degrees at four Jordanian public and private universities during the transition from face-to-face to e-learning education during the COVID-19 pandemic.

Methodology

A descriptive cross-sectional approach has been conducted from February 7 to 21, 2021 as it thought to be compatible with the objectives of this study. Through electronic survey in Google Forms (Google LLC, Mountain View, California).

Procedure and Method

The survey link was disseminated via social media (Twitter, Facebook, and Instagram), and the researcher contacted participating universities to request that they share the link with their students. The survey was accessible to students in the first through fourth years of their studies. Participation was voluntary, confidentiality was assured, and consent was acquired before to the survey's start.

Participants and sampling

A stratified simple random selection technique was used to choose participants (n = 260) from nursing faculties spanning four years at four large public and private universities in Amman. Nursing faculty members and administrators were excluded from the sample.

Measurement

The goal of this research was to provide insight on problems experienced by nursing students in Jordanian universities during the COVID-19 pandemic. The researcher created the questioner for this research. An initial 42 items were developed after conducting a review of relevant literature.

Instrument validity

To validate the research questionnaire and to ensure that it was culturally appropriate for Jordanians, it was given to a group of nursing lecturers. Experts evaluated the questionnaire's content validity index. They were tasked with evaluating the items' relevance to the objectives and providing feedback on the questionnaire. The questionnaire's applicability for the aim of this study was assessed by the experts.

The revised questionnaire consisted of two sections A & B. Section A is intended to collect demographic information about participants. Section B included the following: six subsections to measure the following aspects:

- First aspect: problems related to lectures.
- Second aspect: problems related to exams.
- Third aspect: problems related to clinical training.
- Fourth aspect: problems related to faculty members.
- Fifth aspect: problems related to curricula.
- Sixth aspect: problems related to textbooks & technological gadgets for online education.

Each subsection's components were quantified using a 30-item Likert scale survey. Each issue had five responses: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (2). (1). The findings were transformed to a three-point rating system to reflect the arithmetic averages' values (low/medium/high), as seen in (Table 1).

Reliability

Tests were conducted on 30 students from outside the study's sample, with a two-week time gap, to ensure the study's reliability. This study's Pearson correlation coefficient was 0.88 after data was collected and student responses were analysed.

Results classification

The findings were translated to a three-point rating system to characterize the arithmetic averages' values (low/medium / high), as shown in Table 1:

Table 1
The classification scale to describe the mean values

Value	Description
1 - 2.33	Low
2.34 - 3.66	Medium
3.67 - 5	High

The previous classification categories were reached according to the equation shown below:

Class Width = Range (Maximum – Minimum) / Number of classes

Class Width = $(5-1)/3=1.33$

Data analysis

The data were analysed descriptively; suitable measures of central tendency and dispersion were utilized based on the distribution. Proportions and percentages are used to summarize the findings of Likert style questions. Student's t-test, analysis of variance (ANOVA), or chi-square test were used to determine differences between groups, depending on the measurement level and underlying distribution. The level of significance was set at 0.05. The Statistical Package for Social Sciences (SPSS) version (27) was used to examine the data collected from the participants, to determine percentages, means, standard deviations, F-test (Analysis of Variance), and Chi-square.

Limitations

This research only covers e-learning problems from nursing students' point of view during the COVID-19 pandemic confinement. Moreover, the research results might be biased to some degree because students with no internet access may not have received our survey, perhaps those seriously affected by the pandemic. During the study period, social distancing initiatives were implemented to avoid the distribution of questionnaires in person. The technical resource deficit reported is thus likely to be underestimated. Self-reporting prejudices may also have influenced the responses of students. Also, there may be selection bias, as participation was voluntary. Students with strongly positive or negative

interactions would be easier to join the band wagon, which might eliminate more neutral opinions.

Demographic characteristics

The questions in Section A of the questionnaire were designed to elicit sociodemographic data from participants in order to ascertain if they were a homogeneous or diverse group of Jordanian nursing students based on a variety of characteristics. These factors were educational sector (Privet, Public), gender (Male, Female), & study year level (first, second, third, fourth) as it shown in Table (2) below.

Table 2
The demographics

Characteristics	Variables	Number	Percentage
University Sector	Privet	180	69.2
	Public	80	30.8
Gender	Male	115	44.2
	Female	145	55.8
Year level	1 st year	57	22
	2 nd year	76	29
	3 rd year	60	23
	4 th year	67	26
Total		260	100%

The sociodemographic data provides a snapshot of Jordanian nursing students who consented to participate because of a specific interest in the study area or because they believed they might make a major contribution to the study's topic. Females made up the majority of participants (55.8%), while males made up 44.2%. 69.2% of the participants study in public educational sector while 30.8% of subjects study in privet educational sector. 22% of participants are in the 1st year level, 29% study in 2nd year level, 23% in 3rd year level and 26% 4th year level (Table 2).

Results and Discussion

To answer the first question:

(What is the e-learning education problems faced by nursing students in Jordanian universities during COVID-19 pandemic confinement related to lectures, exams, clinical training, faculty members, curricula, and textbooks & technological gadgets for online education?)

The means and standard deviations of the participants' responses on the items in each of the six aspects were calculated, and the results are shown below in tables 3,4,5,6,7,8.

Table 3
Problems related to lectures

#	First aspect: problems related to lectures.	Mean	Standard deviation	Rank
1	Poor internet access and connectivity.	4.39	0.68	high
2	Lack of technical support.	4.39	0.68	high
3	Lack of computer literacy.	3.52	1.02	medium
4	Lack of discussions and interaction that stimulate students' thinking.	3.51	1.04	medium
	Total	4.00	0.98	high

The mean and standard deviation of responses to questionnaire items concerning lecture problems encountered by Jordanian university students are displayed in Table No (3). Given the total approximate mean value, it is clear that the problems associated with lectures ranked high (4.00). The averages ranged from 4.00 to 3.51. This indicates that items of the first study aspect all considered problems related to lectures form the research participants' point of view. Item No. (1) "Poor internet access and connectivity." was ranked first, with a mean value of (4.40), while Item No. (4) "lack of discussions and interaction that stimulate students' thinking" was ranked last, with a mean value of (3.51). In total, in this group two items reached high ranks, while the other two were medium.

Table 4
Problems related to exams.

#	Second aspect: problems related to exams.	Mean	Standard deviation	rate
1	Exam questions or instructions are ambiguous or confusing.	4.31	0.72	high
2	Insufficient time allocated to thoughtfully complete the exam.	4.29	0.74	high
3	Lack of confidentiality and security as for the content and exams.	4.29	0.78	high
4	Frequent network malfunctions while performing the exam.	4.27	0.72	high
5	Suffering from anxiety or stereotype.	4.20	0.66	high
	Total	3.56	0.52	high

Table No. (4) displays the mean and standard deviation values for participants' responses to questionnaire items related to exam problems that Jordanian university students may face. Given the overall estimated mean value, exam-related problems ranked high (3.56). The averages ranged from 4.31 to 4.20. This indicates that the second aspect items were all considered exam-related problems. Item No. (1) "exam questions or instructions are ambiguous or confusing" was

ranked first, with a mean value of (4.31), while Item No. (5) “suffering from anxiety or stereotype” was ranked last, with a mean value of (4.20). In total, all five items achieved high ranks in this category.

Table 5
Problems related to clinical training

#	Third aspect: problems related to clinical training.	Mean	Standard Deviation	Rank
1	Suspension of nursing students' participation in health-care facilities (such as hospitals and clinics).	3.90	0.72	high
2	Face-to-face monitoring and coaching are unlikely due to clinical training supervisors from nursing schools being denied access to clinical sites.	3.89	0.68	high
3	Increased risk of acquiring COVID-19 as a care provider is significant.	3.89	0.68	high
4	Lack of the hospital staff interest in explaining the student's weaknesses and encouraging him/her to develop them.	3.89	0.65	high
5	Increase of clinical placement anxiety level.	3.85	0.73	high
6	Insufficient time allocation for students' supervision by hospital staff.	3.81	0.72	high
7	Number or percent of trainees assigned to each department is limited.	3.81	0.72	High
	Total	3.86	0.60	High

Table No. (5) displays the mean and standard deviation values for participants' responses to questionnaire items related to clinical training problems that Jordanian university students may face. Given the overall estimated mean value, it is clear that clinical training-related problems ranked high (3.86). The averages ranged from 3.90 to 3.81. This indicates that the third aspect items were all considered clinical training-related problems. Item No. (1) “suspension of nursing students' participation in health-care facilities (such as hospitals and clinics)” was ranked first, with a mean value of (3.90), while Item No. (7) “number or percent of trainees assigned to each department is limited” was ranked last, with a mean value of (3.81). In total, all seven items achieved high ranks in this category.

Table 6
Problems related to faculty members

#	Fourth aspect: problems related to faculty members.	Mean	Standard Deviation	Rank
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1	Inability to address course's intended learning outcomes.	2.64	0.72	Medium
2	Inability to motivate students' participation during lectures.	2.61	0.66	Medium
3	Inability to track students' progress effectively during their studies.	2.60	0.79	Medium
4	Some lecturers are not convinced of e-learning value and benefits.	2.55	0.76	Medium
5	Lack of computer literacy.	2.53	0.62	Medium
	Total	2.60	0.50	Medium

The mean and standard deviation values for participants' responses to questionnaire items related to faculty members' problems that Jordanian university students might face are shown in Table No. (6). The problems associated with faculty members were specifically ranked medium, based on the average approximate mean value (2.60). The average values were between 2.64 and 2.53. The thing that suggests the fourth research aspect's items all were considered faculty members related problems. Item No. (1), "inability to discuss course's expected learning outcomes," was ranked first with a mean value of (2.64), while Item No. (5), "lack of computer literacy," was ranked last with a mean value of (2.53). In this aspect, all five items received a medium rating.

Table 7
Problems related to curricula

#	Fifth aspect: problems related to curricula.	Mean	Standard deviation	Rank
1	Difficulty implementing e-learning in certain subjects that necessitate clinical skills.	3.90	1.01	high
2	Curricula are traditional and lacks activities that develop students' creativity.	3.88	1.07	high
3	Integration between theoretical and clinical materials is not sufficient.	3.60	1.07	medium
4	Poor e-learning course design.	3.53	1.06	medium
	Total	3.70	0.97	High

The mean and standard deviation values for participants' responses to questionnaire items related to curricula problems that Jordanian university students my face are shown in Table No. (7). Given the overall average mean value, it is clear that lecture-related issues ranked high (3.70). The average values were between 3.90 and 3.53. The thing that suggests items from the fifth research aspect are all considered curricula-related problems form the research participants' point of view. With a mean value of 3.90, item No. (1) "difficulty incorporating e-learning in some subjects that necessitate clinical skills." Was ranked first, while item No. (4) "poor e-learning course design" was ranked last (3.53). In this group, two items received high rankings, while the other two

received medium rankings.

Table 8
Problems related to textbooks, technological gadgets for online education.

#	Sixth aspect: problems related to textbooks & technological gadgets for online education.	Mean	Standard Deviation	Rank
1	Infrastructure failure (software and hardware) and crashing systems.	4.35	0.73	High
2	Online access to recent references and textbooks is restricted.	4.31	0.72	High
3	E-library does not fulfil the academic needs of students.	4.29	0.78	High
4	Inadequate mechanisms for discovery and access of library e-material.	4.27	0.72	High
	Total	4.31	0.60	High

The mean and standard deviation values for participants' responses to questionnaire items related to textbooks, technological gadgets for online education problems that Jordanian university students may face are shown in Table No. (8). The problems associated with textbooks and technical gadgets for online education were clearly rated high, as shown by the overall estimated mean value (4.31). The average values were between 4.35 and 4.27. The thing that suggests items from the sixth research aspect are all considered problems. With a mean value of 4.35, item No. (1) "Infrastructure failure (software and hardware) and crashing systems" was ranked first, while item No. (4) "inadequate structures for discovery and access of library e-material" was ranked last (4.27). In this category, all four things earned high marks.

To answer the second question: (Is there any statistically significant difference in e-learning education problems based on University sector, gender, or year level?) the means and standard deviations were statistically calculated for the variables of university sector, gender, and year level as shown in table 9 below.

Table 9
Means, standard deviations and number of cases for the problems of e-learning education from students' perspective according to university sector, gender, year level variables.

Characteristics	Variables	Number	Mean	Standard Deviation
University Sector	Privet	180	3.32	0.61
	Public	80	3.64	0.48
Gender	Male	115	3.52	0.55
	Female	145	3.47	0.63
Year level	1 st year	57	3.44	0.51
	2 nd year	76	3.40	0.68
	3 rd year	60	3.62	0.55
	4 th year	67		
Total				260

Table 9 shows a slight variance in the means of the e-learning education problems facing nursing students in Jordanian universities according to university sector, gender & year level variables, to find out whether there are statistically significant differences in these means, 3 way ANOVA statistic was conducted and the results are shown in Table 10.

Table 10
Three-Way-ANOVA results of problems of e-learning education related to

Source of Variation	Sum of Square	df	Mean Square	F	Sig
University Sector	3.43	1	3.43	9.80	10.0*
Gender	0.27	1	0.27	0.77	0.35
Year Level	0.50	2	0.25	0.71	0.44
Error	90.44	255	0.35		
Total	65.60	259			

* *Statistically significant at the level of statistical significance ($\alpha=0.05$)

The results of the study of variance analysis are shown in Table 10. Although there are no statistically significant differences in the e-learning education problems faced by nursing students by gender or year level (indicating that the problem faced by female and male students at their respective year levels is identical), there are statistically significant differences in the e-learning education problems faced by nursing students regarding the university sector variable in favour of the privet universities. These findings indicate that the public university students faced greater e-learning education problems compared to the privet university students. However, many students attend lectures at public universities, which may be a factor.

In their study titled "Study of Contact Barriers to Distance Education: A Review Study" Dabaj and Yetkin (2011) grouped the barriers into two major categories: the unhidden problems such as lack of technical knowledge, high costs of connectivity and access to sites; and the hidden problems of resilience to emerging technologies, technological fear, and a strong belief in conventional education. The current study findings indicate that Jordanian nursing students' perception of the e-learning education problems was very high. Technical problems are the most frequent in the online communication, such as lack of technological infrastructure, lack of security and privacy concerns students perceive them most, a result that agrees with the argument by many studies highlighted this issue for example a study by Zolghadri and Mallahi (2013) which suggested that the most significant issues related to e-learning infrastructural problems were low-speed internet network, connectivity problems and difficulty access.

Panda and Mishra (2007) conducted a study to identify issues that faculty members consider when deciding whether or not to use e-learning in open universities, and to decide that restricted Internet access, a lack of computer proficiency, and a lack of preparation are essential problems. Johnson, Smith, Willis, Levine, and Haywood (2011) contended that inadequate infrastructure or

any other technological hindrance can obstruct the teaching-learning process. Psychological, cognitive, and societal barriers, on the other hand, are determined to be low, and students perceive less of them.

In addition, one of the problems that educators encounter in developing and implementing the e-learning was a lack of expertise, particularly technical skills (Niebuhr, Niebuhr, Trumble, & Urbani, 2014). Inadequate computer and typing skills (Dyrbye, Cumyn, Day, & Heflin, 2009), as well as a lack of infrastructure, can limit lecturers' willingness or capacity to participate in the advancement or providing of e-learning (Dyrbye, Cumyn, Day, & Heflin, 2009).

Furthermore, lecturers are under pressure to take enough time to handle teaching, investigate and keep personal relationships on a work-life balance. In this case, insufficient time may be considered a major obstacle to mastering, developing, and implementing e-learning resources. Perlman, Christner, Ross and Lypson (2014) emphasize time as a constraint that faculties use an ePortfolio method. The faculty members had to spend uncompensated educational time because the pilot nature of the software did not provide them safe administrative time. It was recognized that it was vital that educators be allowed time to familiarize themselves with this form of tool to guarantee the efficient usage of such a learning tool.

Conclusion

Efficient e-learning requires the technical, administrative, employee and student efforts. Higher education institutions should enhance e-learning by providing adequate training for both students and faculty members, provide financial support for upgrading technical labs, and promote curricula. In order to increase students' understanding of the value of e-learning, online orientation prior to their enrolment is required.

Jordan is only beginning to incorporate e-learning into its educational system; further study is needed to strengthen the integration of e-learning with conventional learning and to better depict the actuality of e-learning in higher education establishments. Indeed, this research acknowledged some of the students' problems and gave information on the process of e-learning at Jordan's private and public universities. This study demonstrated a relationship between the university sector variable and the number of problems faced by students. Students in the public sector had more problems with e-learning than their peers in the private sector.

Some of the problems that we have listed are temporary and can be solved in the context of the global health crisis. Others can continue or have long-term implications. These problems would not only impact the education and training of potential nurses without adequate action. Even the distribution of health services by the government may be interrupted on a broader scale. Many of these problems have become evident and there are differences between subgroups that are increased due to the pandemic, mostly to the benefit of those with more access to resources. This creates an inequitable, although unintentional, learning landscape and ensuring that this inequity does not persist is the biggest challenge

for stakeholders. Any actual or potential problems that might arise should be thoroughly investigated and tackled. Finally, global technological advances cannot be overlooked, as education cannot be separated from technology today.

Recommendations

E-learning has many problems in developed countries, much more so when it comes to COVID-19 pandemic health crisis, and these problems are multidimensional and interlinked. Hence, nursing student needs assessment to recognize people with e-learning problems such as minimal access to technological services and fundamental needs should be conducted. Open communication channels should be maintained among administrators, educators, and students. Positive interaction opportunities with faculty members and students must be set up. Evaluation criteria should be consistent with desired learning outcomes. Finally, even under normal conditions, students are likely to experience anxiety. Pre-clinical preparation, (digital) coaching, and support from preceptors and supervisors are critical for avoiding a negative impact on their learning outcomes.

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