Evaluation of the Current Challenges of Nursing Students about Online Nursing Education at Kurdistan Region in Iraq

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الخلاصة:

خلفية البحث: معظم الجامعات والمؤسسات التعليمية حول العالم أغلقت أبوابها أثناء جائحة فيروس كورونا المستجد واعتمدت نظام التعليم الالكتروني كأفضل بديل متوفر لطرق التعليم التقليدية، وبالنتيجة فقد برزت الى الساحة الأكاديمية الكثير من التحديات والصعوبات كون هذه الطريقة التعليمية لم تكن شائعة في الجامعات العراقية، وكليات التمريض ليست استثناءاً، لذا أدعت الضرورة لتقويم التعليم التمريضي الالكتروني غاية في معرفة التحديات التي تواجه الطلبة ومن ثم التوصل الى افضل طريقة تدريس الكترونية ممكنة لطلبة التمريض.

الهدف: لتقويم التحديات الحالية لطلبة التمريض حول التعليم التمريضي الالكتروني في اقليم كردستان العراق، من خلال الصفوف الالكترونية، والامتحانات الفصلية واليومية.

المنهجية: أجريت هذه الدراسة الوصفية باستخدام طريقة التقويم للفترة من 25 / ايلول / 2020 الى 11 / نيسان /2021، وشملت كليتين من كليات التمريض في الجامعات العراقية في اقليم كردستان، من كل كلية تم اختيار 40 مشارك، بما مجموعه 80 طالباً وطالبة. استخدمت لجمع البيانات استبانة مطورة ومبنية اعتماداً على الدراسات السابقة، وتتكون هذه الاستبانة من جزئيين، تضمن الجزء الاول المعلومات الديموغرافية للطالب، والجزء الثاني التحديات الحالية لطلبة التمريض حول التعليم التمريضي الالكتروني. وتم اجراء دراسة مصغرة لتقييم مدى ثباتية ومصداقية هذه الاستبانة قبل استخدامها في جمع البيانات.

النتائج: بيّنت النتائج بأن نسبة الطلاب الذين يواجهون تحديات وصعوبات تساوي خمسَي العينة الإجمالية بينما يظهر بعض الطلاب فقط استعدادهم واهتمامهم بالتعليم التمريضي الالكتروني.

الاستنتاجات: يُظهر غالبية طلبة التمريض مستويات مختلفة من التحديات والصعوبات حول التعليم التمريضي الالكتروني، وتختلف هذه التحديات من كلية إلى أخرى.

التوصيات: إن التعليم التمريضي الالكتروني بحاجة للمتابعة المكثفة والجادة بما فيه مصلحة كليات التمريض والتدريسيين والطلبة. اضافة الى ذلك، انه من الهام توفير الدعم اللوجستي للتدريسيين والطلبة بشكل عام.

الكلمات المفتاحية: تقييم، تمريض، تعليم الكتروني، تحديات، عقبات.

ABSTRACT

Background: During the COVID-19 Pandemic, the vast majority of educational organizations have been closed and faced different levels of challenges when online education is adopted as an alternative teaching approach, in this context an urgent nursing-specific E-Pedagogy method is required.

Objective: Evaluate the current challenges of nursing students about online nursing education through web-based courses, programs, online examinations, and quizzes.

Methodology: A descriptive study, using an evaluation approach, conducted from 25 \ September \ 2020 to 11 \ April \ 2021. and carried out at two Colleges of Nursing in Kurdistan Region of Iraq, a sample of (80) undergraduate nursing students is recruited from the aforementioned colleges using the non-probability sampling approach to gather a convenient sample. A self-report questionnaire is

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developed from the literature, for the evaluation process.

Results: Indicate that the proportion of students who show difficulties is equal to two-fifths of the total sample while only some of the students demonstrate preparedness and interest in online education.

Conclusion: The majority of the participants show various degrees of challenges and difficulties about online nursing education, and these challenges vary from one college to another.

Recommendation: The faculty members should be well trained for the implementation of online nursing education for the benefit of students learning improvement.

Keyword: Evaluation, Nursing, Online education, Challenges, Obstacles.

INTRODUCTION

Online education is considered as an alternative to on-campus education during the COVID-19 pandemic, as a result, inequalities concerning educational systems emerged between countries, and this influenced nursing education at a global scale [1]. According to [2] mentioned in [3], a nursing-specific e-pedagogy is urgently required. However, evaluating how online education programs fulfilling the requirements of nursing students, is a significant trend for researchers, with evidence concluded by many studies that online classes have successful outcomes [4].

When looking at online education and traditional education, it is easy to discover that they depend on different methods of teaching, and this difference is huge. Online education needs multiple skills that enable the teacher to present the educational materials and ensure that the students had understood them. Instructors who are responsible for teaching the curriculum face significant challenges. Many students may not have access to the high-speed internet service that online education usually requires; others lack skills and technical knowledge of smart devices [5].

Many other challenging aspects as well, detected in the literature; first: lack of information base at the planning step could contribute to the improper online education process. Second: the sense of social isolation is another issue with online nursing education; as a result, a probable consequence may be the absence of a societal learning process. Third: the educational content in online teaching, consuming time, effort, and requiring skills to be prepared and explained to students. Finally, online education requires financial investments, supported by efficient research-based evidence [6].

While many schools lack technological infrastructure and trained staff, academicians who used to teach traditionally for decades claim that the online education model is challenging [7]. Other studies evidenced that online nursing education has reputable outcomes about social interaction, mentorship, and academic success, and these outcomes found to be relatively the same when comparing online nursing education to campus-based nursing education, and this explains the fast openness toward this model of learning [8].

AIMS OF THE STUDY

Evaluate the current challenges of nursing students about online nursing education through web-based courses, programs, online examinations, and quizzes.

METHODOLOGY

A descriptive study, using an evaluation approach, is conducted to evaluate the current challenges about online nursing education at Kurdistan Region in Iraq from September 25, 2020, to April 11, 2021. The study is carried out at two Colleges of Nursing in Iraqi Universities. A sample of (80) undergraduate nursing students is recruited from

the aforementioned colleges using the non-probability sampling approach to gather a convenient sample. The sample is comprised of (40) students from each college of nursing.

A self-report questionnaire is developed from the literature, for evaluating the current challenges of online nursing education. The instrument consists of two parts, which include students' demographic data and the current challenges of online nursing education domains. A pilot study is conducted for the determination of the study instrument's internal consistency reliability and content validity.

Data are collected using the developed self-report questionnaire from undergraduate nursing students out of early stated colleges. Online and paperwork styles are used as means for data collection. The collected data are analyzed through the application of the following approaches: Descriptive statistical data analysis approach and inferential statistical data analysis approach. Formal ethical approval for the study is obtained from the Scientific Research Ethical Committee in the College of Nursing University of Baghdad. All participants have signed a consent form for their agreement to participate in the study.

RESULTS

This section presents the results of the study after the data have been managed and results are tabulated and organized with respect to the objectives of the study as follows:

Table (1): Overall Evaluation of Current Challenges of Online Nursing Education in Kurdistan Region of Iraq

Poor (74-123.3)	Fair (123.4-171.6)	Good (172.7-222)
35(43.75%)	42(52.5%)	3(3.75%)

Table 1 shows difficulties is equal to two-fifths of the total sample while only some of the students showing preparedness and interest in online education.

Table (2): Mean of Scores on Items of Learning, Understanding and Comprehension Domain at Colleges of Nursing in Kurdistan Region of Iraq

L.	Learning, Understanding, and Comprehension Domain	Always	Sometimes	Never	M.S	E.
1	I learn easily with online education.	9	43	28	1.76	Low
2	I get a benefit from what I learned in online education courses.	10	40	30	1.75	Low
3	The assignments help acquire a better understanding of course content.	8	43	29	1.74	Low
4	The tests in the online class are directly related to assignments, discussions, and other planned activities.	14	39	27	1.84	Low
5	Online education increases the quality of knowledge attained.	14	36	30	1.8	Low
6	Online education will provide me with better learning opportunities than traditional means of learning.	10	28	42	1.6	Low

		Always	Sometimes	Never	M.S	E.
7	I can manage my study time efficiently to complete assignments on time.	24	38	18	2.08	High
8	Online education provides an opportunity for students to review educational materials at any time without being restricted by the time of the lecture.	22	39	19	2.04	High
9	I learn best when class material is presented in a variety of formats (lectures, videos, podcasts, online discussion/ conferencing).	25	37	18	2.09	High
10	I feel comfortable reading a textbook or articles on a computer screen than a physical textbook or paper.	6	24	50	1.45	Low
11	I have the chance to work with my peers during online education.	13	42	25	1.85	Low
12	Student responsibilities (being prepared, participation, group projects, etc.) are well defined in online education.	10	47	23	1.84	Low
13	I believe that using online education technologies will improve my learning performance.	14	31	35	1.74	Low

MS: Mean of Scores, E.: Evaluation, Low: MS < 2, High: MS > 2

Table 2 shows that half of the students experienced problems and challenges of learning, understanding, and comprehension as a domain of online nursing education, and nearly two-fifths of them revealed a poor view of this domain.

Table (3): Mean of Scores on Items of Software and Online education Tools Domain at Colleges of Nursing in Kurdistan Region of Iraq

L.	Software and Online education Tools Domain	Always	Sometimes	Never	M.S	E.
1	I am comfortable and proficient at creating, saving, locating, downloading, surfing the Internet, conducting searches, setting bookmarks, and opening different types of files on a computer.	16	38	26	1.88	Low
2	I am willing to use e-mail and other online tools to ask my classmates and instructors questions.	22	32	26	1.95	Low
3	I can confidently write and format documents using a word processing program.	27	34	19	2.1	High
4	I have access to a webcam and microphone for simple multimedia participation.	16	34	30	1.83	Low
5	It will be easy for me to become skillful in the use of online education tools.	16	46	18	1.98	Low
6	I prefer using a computer to prepare my lessons.	11	36	33	1.73	Low
7	Supporting learners in an online education environment is very easy.	14	37	29	1.81	Low
8	It is easy to get help when facing computer problems.	12	36	32	1.75	Low

MS: Mean of Scores, E.: Evaluation, Low: MS < 2, High: MS >

Table 3 shows that approximately less than half of the students experienced a rational level of the current challenges of software and online education tools as a domain of online nursing education. As they stated as low

multiple items; like creating files, conducting searches, surfing the internet, and locating files skills, while only the confidentiality item of using word processing program for documents writing and formatting marked as high.

Table (4): Mean of Scores on Items of Instructors' Skills and Experiences Domain at Colleges of Nursing in Kurdistan Region of Iraq

L.	Instructors' Skills and Experiences Domain	Always	Sometimes	Never	M.S	E.
1	The instructor expresses ideas clearly.	17	49	14	2.04	High
2	Encourages students to feel free to ask questions.	36	32	12	2.28	High
3	Carefully answers questions raised by students.	35	34	11	2.3	High
4	Treated students with respect when communicating with various electronic means of communication.	26	35	19	2.09	High
5	Uses various teaching methods and techniques that helped me understand the practical applications of the course content.	18	39	23	1.94	Low
6	The instructor is helpful and collaborates with the students.	22	35	23	1.99	Low
7	Feedback and evaluation of papers, tests, and other assignments are given promptly.	17	39	24	1.91	Low
8	The instructor is well organized and prepared.	24	37	19	2.06	High
9	Competent with computer use during the course.	16	41	23	1.91	Low
10	Accessible and available during the online education course.	15	45	20	1.94	Low
11	Communicated important due dates/time frames for learning activities.	19	41	20	1.99	Low
12	Define and apply clear grading scales.	21	40	19	2.03	High
13	Provide accurate, complete, clear, and accessible content.	16	43	21	1.94	Low
14	Offer multiple opportunities for interaction among learners, between learners and the instructor, and between learners and content.	7	47	26	1.76	Low
15	Integrate face-to-face interactions and participation in social networks.	9	37	34	1.69	Low
16	Provides detailed instructions and guidelines for completing assignments and discussions.	17	42	21	1.95	Low
17	Course objectives in online education are provided at the beginning of the course and clearly described.	25	35	20	2.06	High

MS: Mean of Scores, E.: Evaluation, Low: MS < 2, High: MS > 2

Table 4 shows that also half of the students have experienced conflicts and difficulties with instructors' skills and experiences as a domain of online nursing education. This can be explained as they ranked as high the items of; instructor's idea-expression clarity; motivating the students to express concerns and ambiguity, and answering students' questions. Comparatively, students acknowledged the other items as low, as applied to the utilization of different educational approaches for helping students to apprehend and practice the content; assisting and/or collaborating with the students; assignments evaluation and timely fashion feedback; and computer skills competency.

Table (5): Mean of Scores on Items of Class Discussion and Student-Faculty Communication Domain at Colleges of Nursing in Kurdistan Region of Iraq

L.	Class Discussion and Student-Faculty Communication Domain	Always	Sometimes	Never	M.S	E.
1	The frequency of student and instructor interactions is adequate.	20	40	20	2.0	High
2	I feel comfortable participating in online course discussions.	12	30	38	1.68	Low
3	The face-to-face method is more learner-centered than the online education methods.	49	19	12	2.46	High
4	There is more interaction between all involved parties in online courses compared to a traditional face-to-face class.	14	22	44	1.63	Low
5	Communicating through e-mails is comfortable.	7	33	40	1.59	Low
6	I am comfortable interacting with others in online communication.	9	35	36	1.66	Low
7	Online education allows me to communicate with students and instructors at different times.	17	36	27	1.88	Low

MS: Mean of Scores, E.: Evaluation, Low: MS < 2, High: MS > 2

Table 5 results present that more than half of the students have experienced struggles concerning class discussion and student-faculty communication as a domain of online nursing education.

Table (6): Mean of scores on Items of Course Design and Content Material Domain at Colleges of Nursing in Kurdistan Region of Iraq

L.	Course Design and Content Material Domain	Always	Sometimes	Never	M.S	E.
1	The content is organized and easy to follow.	21	44	15	2.08	High
2	All the images and texts in the online courses are visible.	26	40	14	2.15	High
3	Any sounds in the course are audible.	21	45	14	2.09	High
4	Adequate resources and materials for this online course are easily accessible during the course.	10	47	23	1.84	Low
5	All documents (e.g., pdf, doc, and ppt) are accessible via screen readers. (This includes tables and graphs).	25	44	11	2.18	High
6	Educational videos are an essential part of Online education.	31	34	15	2.2	High
7	Video/audio files can be captioned.	24	41	15	2.11	High
8	The course contain various assessment methods (e.g. discussion, assignments (individual or group), and quizzes).	24	41	15	2.11	High
9	There is a course schedule that shows activities and due dates.	21	48	11	2.13	High

MS: Mean of Scores, E.: Evaluation, Low: MS < 2, High: MS > 2

Table 6 shows that more than half of the students have experienced a rational degree of current challenges of course design and content material as domain online nursing education.

Table (7): Mean of Scores for Items of Psychosocial Circumstances Domain at Colleges of Nursing in Kurdistan Region of Iraq

L.	Psycho-social Circumstances Domain	Always	Sometimes	Never	M.S	E.
1	The test(s) in the online course is accurate and fair.	15	33	32	1.6	Low
2	Online education treats class members equitably and respectfully.	19	38	23	1.95	Low
3	Online education decreases learners' social isolation.	13	43	24	1.86	Low
4	Learning through online education is interesting.	13	29	38	1.69	Low
5	I am comfortable with online learning technology.	18	26	36	1.78	Low
6	I am comfortable working and learning independently.	29	30	21	2.1	High
7	I am satisfied with my final grade in the online course.	14	43	23	1.89	Low
8	Conducting the course via the Internet makes it easier than other traditional nursing courses I have taken.	11	35	34	1.71	Low
9	I get support and assistance throughout the online education process.	11	40	29	1.78	Low
10	The level of test anxiety in the electronic test is less compared to the traditional test inside university halls.	20	25	35	1.81	Low
11	Online education is less expensive for students than in traditional education.	28	30	22	2.08	High

MS: Mean of Scores, E.: Evaluation, Low: MS < 2, High: MS > 2

Table 7 shows more than half of the students have experienced weaknesses of psychosocial circumstances as domain online nursing education.

DISCUSSION

The overall outcome of Kurdistan Region states that the proportion of students who show difficulties is equal to two-fifths of the total sample while only some of the students showing preparedness and interest in online education (Table 1). Half of the students experienced problems and challenges of learning, understanding, and comprehension as a domain of online nursing education, and nearly two-fifths of them revealed a poor view of this domain. The mean of scores are reporting that they are facing difficulties and marked as low each of the learning process easiness, and student's benefit from online learning. In contrast, the students mentioned only (3) items of this domain as high, which are effective study time management and the ability of assignments completion on due dates; the capability of educational materials revision anytime and anywhere; and the learning enhancement with multiple class content formats like videos, slide presentation, and podcasts (Table 2).

These outcomes come in contrast with the findings [4] that studied students' learning performance in online education and found that the students earned better grades than in traditional education, and their understanding levels appeared higher. In conclusion, it is observed that students can learn better with online education. In the same context, a study [9] is conducted in Iran, aimed to identify the difference between online education and traditional education relative to learning outcomes,

the sample was undergraduate nursing students learning maternal and child health course. Students' learning outcomes, opinions, and engagement were measured in both approaches. The final results recognized that there are no significant differences between the two teaching models, in relation to students' learning outcomes.

Approximately less than half of the students experienced a rational level of the current challenges of software and online education tools as a domain of online nursing education. As they stated as low multiple items; like creating files, conducting searches, surfing the internet, and locating files skills. While only the confidentiality item of using word processing program for documents writing and formatting marked as high (Table 3).

The present study comes in agreement with the findings [10] who analyzed that most of the nursing students are exhibiting competency in computer and software skills, in terms of surfing the web, using e-mail, and chatting via social communication applications. And despite that they are undertaking computer-based exams recently; they recognized it as effective as paper-based ones. Correspondingly, [11] pointed out that technological support is representing a basic student need while universities hosting online education, and this issue needs to be addressed by evaluating students' computer skills and information technology literacy.

Also, half of the students have experienced conflicts and difficulties with instructors' skills and experiences as a domain of online nursing education. This can be explained as they ranked as high the items of; instructor's idea-expression clarity; motivating the students to express concerns and ambiguity, and answering students' questions. Comparatively, students acknowledged the other items as low, as applied to the utilization of different educational approaches for helping students to apprehend and practice the content; assisting and/or collaborating with the students; assignments

evaluation and timely fashion feedback; and computer skills competency (Table 4).

Ali et al. (2020) confirmed different results from this domain, stating that teachers announced exam dates and other deadlines to give students enough time for revision and preparation and that the exam questions are similar to what the teacher discussed and explained of the content during the online classes. Many researchers have found a connection between academic achievement and course rubrics, syllabuses, and timely guidance from teachers in this regard [12]. Along with the findings of Ali et al. (2020) teachers respectfully treated the students, and in general, they answered students' questions and explained the important concerns for them, and they were available during all the week's days. In another context, researches showed that the teacher's availability during the examination period is important for the students, in case the student faced confusion, particularly with automated grading forms. In turn, this may affect students' attitudes and perceptions toward online education [13].

Results present that more than half of the students have experienced struggles concerning class discussion and student-faculty communication as a domain of online nursing education. The mean of scores of this domain depicts that the students marked as high only (2) items which they are the adequate interaction between the teacher and the student; and if the face-to-face method is more learner-centered than the online approach. The remaining items marked as low for instance, students' comfortableness in participating in an online discussion; and the level of interaction in online education in comparison with that of traditional education (Table 5).

Conversely with findings of Mehrdad et al. (2011) who stated that the level of interaction experienced by the students is high and they showed more involvement in planned activities than in traditional courses. According to Hudson (2014),

online interaction, collaboration, and participation basically can be enhanced with questions and specific assignments included within the curriculum and educational materials, not mainly by asking the students to participate. Also, the researcher noted that many students felt frustrated because their participation in the discussion board did not gain interest or feedback from the instructor, while others mentioned that they have a sense of connectedness with the different class parties including the teachers [14].

Moreover, more than half of the students have experienced a rational degree of current challenges of course design and content material as domain online nursing education. As they ranked all the domain's items as high, except that of course resources and materials accessibility, Involving content's ease of following; images' clarity; sounds clarity; documents accessibility across electronic devices; and the essentiality of video files as a part of online courses (Table 6).

This domain's observations are closely related to the findings of Ali et al. (2020) who stated that the students rated the course content, which included photographs, PowerPoint presentations, videos, audios, and other media, as being of high clarity and consistency, which aided them in developing a more engaging and learning-assistive environment. Additionally, more than half of the students reported that videos could be supportive in achieving the learning objectives in time.

Furthermore, more than half of the students have experienced weaknesses of psychosocial circumstances as domain online nursing education. The mean of scores depicts that the students rated only (2) items as high involving the comfort ability of independent working in online courses, and affordability of online education for students in comparison with the campus-based education. Whereas they marked (9) of (11) items as low like the tests accuracy and fairness in online courses; the

treatment of class members with equality and respect; the social presence aspect; and test anxiety levels in comparison to campus-based test (Table 7).

Many researchers, in agreement with the results of this study, have stated that online courses are cost-effective for students and universities [15]. Online education is often known as a self-directed approach that allows students to learn on their own time [15]. However, one of the characteristics of online programs is student satisfaction, which is strongly associated with students' technical skills (9). Likewise, female nursing students reported higher levels of satisfaction with online nursing education than male nursing students [16].

Responses to many items of the current domain came in contrast to the results of Ali et al. (2020), who observed that the students found the online examinations fair, despite that they faced test anxiety and revision difficulties during online exams. Additionally, the researcher mentioned students' sense of social isolation as one of the weaknesses of online education and the need for solutions implications to relieve students' discomfort that accompanying online teaching models. While in the current study most of the students evaluated the online assessments as unfair and inaccurate. As well as, students reported lower levels of anxiety in online tests, as they marked the anxiety levels in traditional exams higher than in online ones.

CONCLUSION

The majority of the participants show various degrees of challenges and difficulties about online nursing education, and these challenges vary from one college to another.

RECOMMENDATIONS

The faculty members should be well trained for the implementation of online nursing education for the benefit of students learning improvement. Essential infrastructure for online nursing education programs

should be feasible to all faculty members and students. Further research can be done on large and different sample sizes and different settings.

REFERENCES:

1. Agu, C. F., Stewart, J., McFarlane-Stewart, N., & Rae, T. (2021). COVID-19 pandemic effects on nursing education: looking through the lens of a developing country. *International nursing review*, 10.1111/inr.12663. Advance online publication. https://doi.org/10.1111/inr.12663.

2. Koch L. F. (2014). The nursing educator's role in e-learning: a literature review. *Nurse education today*, 34(11),1382–1387. https://doi.org/10.1016/j.nedt.2014.04.002.

3. McDonald, E. W., Boulton, J. L., & Davis, J. L. (2018). E-learning and nursing assessment skills and knowledge–An integrative review, *Nurse Education Today*, 66, 166-174. https://doi.org/10.1016/j.nedt.2018.03.011.

4. Hampton, D., Pearce, P. F., & Moser, D. K. (2017). Preferred Methods of Learning for Nursing Students in an On-Line Degree Program, *Journal of professional nursing*: *official journal of the American Association of Colleges of Nursing*, 33(1), 27–37. https://doi.org/10.1016/j.profnurs.2016.08.004.

5. Olugbenga, M. (2020). Prospects and Challenges of Online Education in Secondary Schools in Northern Nigeria M. Ed Educational Administration and Planning Great Panaf Schools, Nigeria Abstract Introduction, *Journal of American Academic Research*. 8(1). Retrieved from: https://bit.ly/322pWS5.

6. Du, S., Liu, Z., Liu, S., Yin, H., Xu, G., Zhang, H., & Wang, A. (2013). Web-based distance learning for nurse education: a systematic review, *International nursing review*, 60(2), 167–177. https://doi.org/10.1111/inr.12015.

7. Nikadambaeva, K. B. (2020). Possibilities for Using E-Sources of Educational Methodology in Online Education during Quarantine. *The American Journal of Social Science and Education Innovations*, 02(08), 164–173. https://doi.org/10.37547/tajssei/volume02issue08-25.

8. Karaman, S. (2011). Nurses' perceptions of online continuing education, *BMC Medical Education*, 11(1), 86. https://doi.org/10.1186/1472-6920-11-86.

9. Mehrdad, N., Zolfaghari, M., Bahrani, N., & Eybpoosh, S. (2011). Learning outcomes in two different teaching approaches in nursing education in Iran: e-learning versus lecture, *Acta Medica Iranica*, 49(5), 296–301. Retrieved from: https://pubmed.ncbi.nlm.nih.gov/21713747/.

10. Ali, K. A. G., Khalil, H. E. M., & El-Sharkawy, F. M. (2020). Impacts of Online Remote Education on the Learning Process among Nursing Students. *Open Journal of Nursing*, 10(9), 810-830. https://www.scirp.org/journal/paperinformation.aspx?paperid=102859.

11. Siemens, G., Gasevic, D., & Dawson, S. (2015). Preparing for the digital university: A review of the history and current state of distance, blended, and online learning, Retrieved from: http://linkresearchlab.org/PreparingDigitalUniversity.pdf.

12. Carless, D. (2015). Exploring learning-oriented assessment processes. Higher Education, 69(6), 963–976. https://doi.org/10.1007/s10734-014-9816-z.

13. Riera Guasp, J., Ardid Ramirez, M., Gomez-Tejedor, J.-A., Vidaurre, A., & Meseguer Dueñas, J. M. (2018). Students' perception of auto-scored online exams in blended assessment: feedback for improvement. Education, 21(2), 79–103. http://doi.org/10.5944/educXX1.19559.

14. Hudson, K. A. (2014). Teaching nursing concepts through an online discussion board. *Journal of Nursing Education*, 53(9), 531–536. https://doi.org/10.3928/01484834-20140820-01.

15. Harerimana, A., & Mtshali, N. G. (2020). Conceptualization of e-learning in nursing education

in the context of Rwanda. *Journal of Nursing Education and Practice*, 10(6), 26. https://doi.org/10.5430/jnep.v10n6p26.

16. Akimanimpaye, F., & Fakude, L. P. (2015). Attitudes of undergraduate nursing students towards e-learning at the University of the Western Cape, South Africa: teaching and learning in health care professions, *African Journal for Physical Health Education, Recreation and Dance*. 21(sup-1), 418-433. Retrieved from: https://core.ac.uk/download/pdf/62636195.pdf.