

# E-Learning Experiences Among Nursing Students: A Scoping Review

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**Background:** Electronic learning (e-learning) is a broader approach to learning that opens up new avenues for studying and teaching in many sectors of education outside of the standard classroom setting. This paper might enhance cultural competence among nursing students and the perspective of the lecturer.

**Methods:** Literature databases of Cinahl "Ebsco", Pubmed, and Science Direct were searched, and 326 potentially relevant nursing research articles were reviewed between 2017 and 2022. Fourteen papers were found to meet the inclusion criteria.

**Results:** Fourteen articles were included for scoping review, themes include blended E-learning, nursing students' e-learning readiness, and The challenges with the E-learning system. First: Blended learning may be a beneficial educational strategy in nursing education but it also requires a cautious and carefully planned approach with sufficient time for each student. Second: E-readiness is an important component of academic success, and prospective e-learning users' capacity to use a new learning environment, as well as alternative technologies, is referred to as e-learning readiness. In addition, continuous readiness assessment is required to ensure the successful deployment of e-learning. Thirdly, Accessibility is the most significant challenge students experience; many other issues also challenge e-learning, such as Infrastructure, Ineffective Time Management, and a lack of Instant Communication.

**Conclusion:** E-learning, on the other hand, can provide an alternate mode of education, blended learning Proven to be effective as a modern learning method, students' e-learning readiness was a significant predictor of their satisfaction and motivation in the classroom, there are still concerns about the instructional veracity of e-Learning, as well as how to analyze and overcome hurdles and fears in e-Learning.

**Implications:** Specialized implications for practical ramifications include strategic management planning, curriculum enhancement, and raising standards at the lecturer level in several specific areas.

## Plain language summary:

- Blended learning has a significant impact on enhancing the learning process by combining instructional strategies to boost student outcomes and motivation.
- Success requires strategic planning, faculty development, and embracing digital resources. Access to the Internet, hardware, and regular training facilitate effective e-learning.
- The study emphasizes the significance of taking learning styles and student requirements into account during the course development process. Future research should investigate the cost-effectiveness of integrated nursing courses and broaden their application to all levels of nursing education.
- This review will contribute to the incorporation of blended learning, which facilitates the transition of nursing students to competency-based education and continuous learning, while technological proficiency becomes essential for maximizing the benefits of e-learning.

**Keywords:** nursing students, readiness, e-learning, blended E-learning, distance education, student perceptions

## Background

E-learning is a modern technology integrated into education as a new method that communicates information to the students through mechanisms that network multiple media that transmit both teachers and learners sound, image, and graphics data.

Internet portal technology has the great benefit of information delivery in the shortest time, with the least effort transportation through a small electronic screen that mixes information technology culture and electronic communication to exchange news and become an actual reality, which allowed quick access to libraries to be updated with new static facts, recent publications, and new discoveries. William Horton defined e-learning as “the use of information and computer technologies to create learning experiences”.<sup>1</sup>

Electronic learning utilizes web advances to transmit and receive information. E-learning advances offer learners the control over substance, groups, subject, time, and media that allows them to tailor their learning targets. Health education is widely disseminated, and the e-learning revolution is widely required and has become essential in the education of healthcare professionals exchanging roles. Particularly in Palestine, this need is critical for political border closure; the culture of educational excellence is nevertheless strong.<sup>2</sup>

## Nursing Education

In the creation of e-learning modules for general medical training and continuing education, there is a growing trend.<sup>3</sup> Some providers in nursing education see digital technology as revolutionary, arguing that it will increase the quality of teaching, empower graduate nurses with “practice readiness”, and eventually create a stronger workforce in health care.<sup>4</sup>

In nursing, online education programs are developing with an increasing number of affiliates. The faculty must be competent in nursing education programs, and have abilities specific to the online learning environment.<sup>5</sup> The government must have planned to develop the nursing profession and increase qualified nurses quality of via developing modifiable flexible learning approaches<sup>6</sup> and integrating e-learning technology into undergraduate, graduate, and continuing medical education, which would endorse and shift Healthcare Professional learning education. Educators become facilitators in higher education; they no longer serve as the main suppliers of material or information or assessors of skills.<sup>1</sup>

This study explores the experiences of nursing students’ perspectives to reach a deep understanding of what e-learning means to them as a new method and educational outcomes. This paper might enhance cultural competence among nursing students and the perspective of the lecturer. Furthermore, experts, scholars, and researchers may guide policymakers to initiate protocols that can be integrated more into the guild, keep in touch with new data, and become updated on new revaluations in the scientific research outcome that will help promote e-learning for educational institutions.

## Aim

Regardless of the fact that an increasing number of educational organizations assume an online approach to education and learning, the pre-requisite human and technological attributes required for academic achievement re in this environment have received little attention. The primary aim of this review is to examine scholarly papers on the issue of e-learning among nursing students. This study serves to answer the following questions:

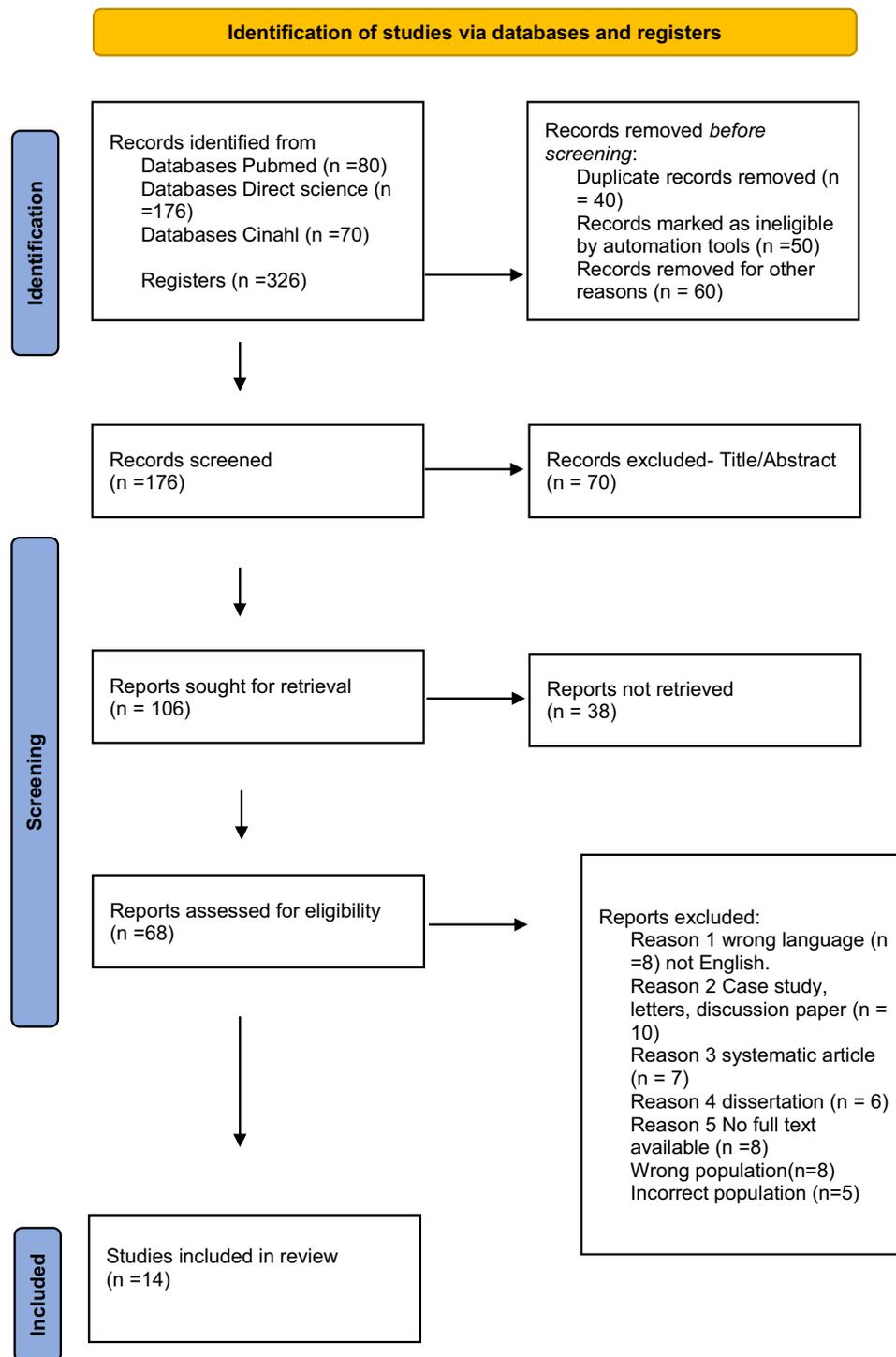
1. What are the experiences of nursing students with online education?
2. What is the level of readiness for e-learning in Palestinian universities?
3. What are the challenges facing the nursing students during the E-learning process?

## Methods

### Search Strategy

The database searches (Cinahl Ebsco, Pubmed, and Science Direct) were conducted for English-language studies published from 2017 through 2022. The primary search terms were e-learning (all synonyms) and education (all synonyms), using text word searching, which involves looking for a word or phrase anywhere in the text of the citation document. As a secondary search term (article title, journal name, author), and thesaurus (Mesh) searching such as “online learning” or e-learning AND “nursing student”, I removed the duplicate articles using EndNote X9.

A total of 326 articles were found using the search approach, with 40 of them being duplicates or disqualified for various reasons. Out of the 176 papers that were assessed, 70 were rejected based on title and abstract, and 38 were



**Figure 1** The research selection process using a standard PRISMA flowchart.

eliminated because they did not fit the inclusion criteria. Nineteen studies were read in full, a total of 14 papers were included in this analysis, with five out of the 19 being discarded owing to the incorrect population ( $n = 5$ ), [Figure 1](#). More details about the search strategy are described in the [Supplementary File 1](#).

## Inclusion and Exclusion Criteria

The inclusion criteria encompassed the utilization of e-learning among nursing students as well as the prerequisite that the works were published in English and subjected to peer review in esteemed scholarly publications subsequent to the year 2017. Further analysis and study were limited to research articles that met the specified parameters. Inclusion criteria also included studies that involved nursing students at any level from undergraduates to postgraduates, studies that included e-learning, online learning, or virtual teaching methods, and studies exploring attitudes, experiences, and perceptions.

## Exclusion Criteria

This study excluded nursing student articles that did not focus on e-learning. Non-e-learning articles, non-empirical secondary references, case studies, letters, and discussion papers were excluded. The analysis also omitted full-text papers and those published before 2017. The research used these criteria to pick relevant and recent nursing student e-learning articles. Articles published before 2017 were excluded because the field of online teaching is dynamic and rapidly changing, articles published before 2017 may not capture the current practices, state-of-the-art technologies, methodologies, or educational trends in e-learning.

## Data Quality Assessment

The methodological quality of the studies included in the review varied. Incomplete information in reporting sequence creation and allocation concealment were the primary causes for lower methodological quality as per the limitations of the studies. Furthermore, because none of the studies reported the application of procedures, the quality was degraded by missing information in selected outcome reporting. However, because it was anticipated that the published reports would cover all outcomes, this was rated as having a "low risk of bias."

The level of evidence overall was I to III- according to the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) rating scales.<sup>6</sup> The evidence included studies were three studies Quasi-experimental,<sup>7-9</sup> one study a systematic review, and one non-experimental design.

## Analysis

Fourteen studies were included in this scoping review after checking their references and were identified as relevant studies as they met the inclusion criteria set by the author, [Table 1](#). The process of extracting the selected studies was clarified earlier in this course in the search strategy document. The research studies were reviewed extensively; eleven of them used quantitative research methodology.<sup>7-16</sup> and two used qualitative methodologies,<sup>17,18</sup> and only one study used the mixed research methodology.<sup>19</sup> The included studies were conducted worldwide, and the participants were students.

## Studies Characteristics

Numerous studies were applied to nursing students in various clinical settings in European, Arabian, African, and Asian countries.

## Results

Three themes were found after an inclusive data review: blended E-learning, nursing students' e-learning readiness, and the challenges with the E-learning system.

## Blended E-Learning

In the field of e-learning, blended integrated learning has emerged in four articles. According to,<sup>19</sup> students were able to manage their learning. Blended learning was used by<sup>7</sup> in a project to increase learning flexibility and build health education competencies in nursing students. According to Choi, the blended learning strategy improved students' ability to educate patients and allowed more flexibility in student learning than in a standard traditional classroom,<sup>7</sup> using simulation films in a blended learning scenario, Coyne was able to observe best practices.

**Table 1** Summary of the Studies Included in the Review

Author/ Date	Research Question(s)	Methodology	Results
Choi, S. H, & Kim, Y. H. 2018 <sup>7</sup>	What are the effects of a smoking cessation intervention education program, based on blended learning, on nursing students' knowledge, attitudes, and self-efficacy regarding smoking cessation? Does the blended learning approach result in a higher smoking cessation rate among nursing students compared to traditional educational methods?	The study employed a quasi-experimental pretest-posttest design. Two groups were formed: an intervention group exposed to the smoking cessation program based on blended learning, and a control group receiving traditional educational methods.	The study found blended learning smoking cessation intervention significantly improved nursing students' knowledge, attitudes, and self-efficacy, resulting in higher cessation rates compared to the control group.
Coyne, E, Frommolt, V, Rands, H, Kain, V, & Mitchell, M. 2018 <sup>10</sup>	How does the integration of simulation videos within a blended learning platform impact the competency development of Australian nursing students?	A quasi-experimental design with a pre-test and post-test approach. Nursing students will be divided into two groups: an experimental group that will access simulation videos through a blended learning platform, and a control group that will receive traditional face-to-face instruction without access to simulation videos.	Research suggests integrating simulation videos in blended learning platforms can improve nursing students' competency, engagement, and confidence. Institutions should consider incorporating similar approaches and investing in simulation resources for enhanced learning experiences.
Alshawish, E, El-Banna, M. M, & Alrimawi, I. 2021 <sup>8</sup>	What is the difference in academic performance (measured through exam scores, grades, and completion rates) between undergraduate nursing students in blended learning and traditional classroom settings? How do undergraduate nursing students perceive their learning experiences in blended versus traditional classrooms? Are there differences in student satisfaction and engagement with the learning process?	The researchers will employ a quasi-experimental design, comparing two groups of undergraduate nursing students – one group exposed to blended learning and the other to traditional classroom instruction. Random assignment might be challenging.	Comprehensive results reveal statistical differences in academic performance, satisfaction, and engagement between two groups, highlighting strengths and limitations of each approach.
E. Ibili 2020 <sup>11</sup>	What is the level of readiness among Health Science university students for e-learning? Are there any significant differences in e-learning readiness between different Health Science disciplines? Does the level of prior experience with online learning impact students' readiness for e-learning? Are there any correlations between students' technology proficiency and their e-learning readiness?	The study utilized a cross-sectional survey design to assess the readiness of Health Science university students for e-learning. A structured questionnaire was used to assess students' readiness, online learning experience, and technology proficiency in various Health Science disciplines.	Health Science university students show moderate e-learning readiness, with variations among disciplines and prior online experience indicating higher readiness levels.

(Continued)

Table 1 (Continued).

Author/ Date	Research Question(s)	Methodology	Results
Kabir, H, Tonmon, T. T, Hasan, M, Biswas, L, Chowdhury, M, Hasnat, A, . & Mitra, D. K. 2019 <sup>12</sup>	What is the association between preference for e-learning and e-learning readiness among Bangladeshi female nursing students during the COVID-19 pandemic?	The study employed a cross-sectional research design to investigate the association between preference and e-learning readiness among Bangladeshi female nursing students during the COVID-19 pandemic. A convenient sampling method was used to select participants from various nursing colleges in Bangladesh.	Study reveals positive association between e-learning preference and readiness among Bangladeshi female nursing students, with higher preference and access to resources predicting readiness.
Aditya, K. S. and Jha, G. K. 2020 <sup>13</sup>	What are the students' perceptions of online education during the COVID-19 pandemic in India? What are the factors influencing students' preferences for online learning in this period? How do students' previous experiences with technology affect their perception and acceptance of online education?	The study uses a mixed-methods approach, combining quantitative and qualitative data collection methods. A survey and in-depth interviews will explore students' perceptions and preferences for online education in India	This research provides insights into India's evolving online education landscape, laying the groundwork for future studies and longitudinal tracking of attitudes.
Yilmaz, R 2017 <sup>14</sup>	What is the relationship between students' e-learning readiness and their satisfaction in a flipped classroom setting? Does students' e-learning readiness influence their motivation levels in a flipped classroom environment? Are there any significant differences in student satisfaction and motivation based on their e-learning readiness levels?	The study uses a mixed-methods research design to explore e-learning readiness's impact on student satisfaction and motivation in a flipped classroom. Quantitative data includes a survey questionnaire, while qualitative data includes in-depth interviews to understand students' experiences, perceptions, and attitudes. Thematic analysis is employed to identify common themes and patterns.	The study highlights the importance of e-learning readiness for educators and instructional designers. Tailoring flipped classroom strategies to students' preparedness can improve satisfaction and motivation, leading to better learning outcomes
Ergun, E, & Adibatmaz, F. B. K. 2020 <sup>15</sup>	What is the predictive role of e-learning readiness on student engagement? How does e-learning style influence student engagement? Is there a relationship between e-learning readiness and e-learning style in predicting student engagement?	The research used a quantitative approach to examine e-learning readiness and style's predictive impact on student engagement using a survey questionnaire.	E-learning readiness significantly predicts student engagement, with prepared students being more engaged in studies, and certain styles positively affecting engagement. Research shows e-learning readiness and style significantly impact student engagement in online courses, with higher readiness and style-awareness boosting engagement.

E. Aboagy, J. A. Yawson, K. N. Appiah 2021 <sup>16</sup>	How has the COVID-19 pandemic affected the learning experiences of students in tertiary institutions? What are the primary challenges faced by students during the transition to e-learning? Do students' prior experience and familiarity with technology influence their perception of e-learning during the pandemic?	The study uses mixed-methods research design, collecting quantitative data through online surveys and qualitative data through focus group discussions and interviews to understand students' experiences and challenges transitioning to e-learning during COVID-19.	The COVID-19 pandemic has significantly impacted tertiary students' learning experiences and well-being, revealing disparities in technology readiness and the need for institutional support and digital literacy training.
N.K. Elfaki, I. Abdurraheem, R. Abdulrahim 2019 <sup>9</sup>	How does e-learning compare to traditional learning in terms of students' academic performance and attitude?	Research uses quasi-experimental design, assessing e-learning and traditional methods' impact on participants.	The study finding significant improvements and positive attitudes. The findings suggest e-learning is more effective than traditional methods.
Furnes, M, Kvaal, K. S, & Høye, S. 2018 <sup>20</sup>	What is the perceived effectiveness of the blended learning training program among bachelor students studying mental health nursing? How does the blended learning approach impact students' communication skills in mental health nursing?	The study explores students' perceptions of blended learning training programs in mental health nursing programs using an exploratory approach. Qualitative methods, including focus group discussions and interviews, were used to gather insights. Thematic analysis was employed to identify recurring themes and patterns.	The study found that most bachelor students positively perceived the blended learning training program, reporting improved communication skills and confidence in mental health nursing scenarios. They appreciated the flexibility, accessibility, and integration of virtual simulations and face-to-face workshops.
N. Pather, P. Blyth, J. A. Chapman, M. R. Dayal, N. A. Flack, Q. A. Fogg, and M. D. Lazarus 2022 <sup>18</sup>	The article analyzes anatomy education programs' responses to the COVID-19 pandemic, focusing on online learning effectiveness, challenges faced by educators and students, and potential long-term impacts.	The study uses a qualitative research approach, analyzing responses from anatomy educators and students in Australia and New Zealand to remote learning. Results reveal strategies, challenges, and outcomes.	The COVID-19 pandemic caused a significant shift in anatomy education, requiring rapid adaptations by educational institutions. The study highlights resilience, innovative efforts, and the importance of flexibility in teaching practices
Venkatesh, S.; Rao, Y. K.; Nagaraja, H.; Woolley, T.; Alele, F. O.; Malau-Aduli, B. S. 2020 <sup>19</sup>	What factors influence medical students' experiences with blended integrated E-learning? 2. How do these factors affect medical students' satisfaction with blended integrated E-learning?	Mixed-methods research uses structured questionnaires and in-depth interviews to analyze students' experiences and perceptions of blended integrated E-learning.	Findings showed that the ease of use and usefulness of blended integrated e-learning platforms positively impacted satisfaction. Factors like internet connectivity, device compatibility, and technical support also impacted experiences. Challenges faced included improved content organization and timely feedback.

Blended learning combines traditional classroom techniques with online digital media to provide a dynamic and adaptable learning environment. This method combines in-person teaching with online education, allowing students to manage their own learning speed and direction. Blended learning promotes collaborative, constructive learning by integrating computer-assisted learning (CAI) to enhance accessibility and customization based on individual needs. Blended learning is acknowledged for its ability to merge the strengths of traditional and modern teaching methods, despite its complexity and organizational challenges. Success hinges on putting in significant effort, maintaining a positive mindset, having a suitable budget, and engaging motivated individuals. The variety of blended learning models demonstrates its versatility and potential to significantly improve the educational system across different levels and subjects.<sup>21</sup>

In a study conducted by Alshawish on forty-nine students enrolled in the blended teaching section and fifty-three students in the traditional teaching section, student and teacher perceptions of learning were significantly higher for students taught using the blended method than for students taught in traditional classroom settings.<sup>8</sup>

## Nursing Students Readiness for e-Learning

Ibili was doing a survey in 2020 to look at the e-readiness of university students studying health sciences in terms of several criteria. The link between e-readiness and academic performance was also looked into, and it was found that e-readiness is an important part of academic success.<sup>22</sup> Kabir also did a study among female nursing students to look at how they felt about their e-learning skills, and he found that 43.46% of the students preferred face-to-face instructions.<sup>12</sup>

Yilmaz conducted a study to explore the impact of students' e-learning readiness on student satisfaction and motivation in the flipped classroom model of instruction. Students' e-learning readiness was a major predictor of their happiness and motivation in the flipped classroom approach to education.<sup>14</sup>

Ergun (2020) While he studies the factors that affect student engagement in e-learning, the findings revealed that students who create a learning objective are better able to manage their time, put in the effort, and organize their learning to meet their requirements.<sup>15</sup>

## The Challenges with the E-Learning System

It has been proven that e-learning reduces the amount of integrated "hands-on" experiences.<sup>18</sup> Additionally, in a totally online learning environment, accessibility is the most significant challenge students experience, especially among students who are already acclimated to the traditional method.<sup>16</sup> Furthermore, one of the issues that information and communication technologies and e-learning programs face is the usage of technology, internet use, and accessing technology.<sup>23</sup> While there is a considerable difference in learning results between online and conventional learners, as well as positive attitudes, online learning can be a viable alternative learning technique for higher education.<sup>24</sup>

## Discussion

In this scoping review, 326 journal articles were screened; 14 were selected, and two of them contained qualitative information about the perceptions of a blended learning mental health nursing communication course.<sup>20</sup> There are challenges for the student while using an E-learning system,<sup>18</sup> which aligns with the larger body of quantitative research. For example, Alshawish found that students' and teachers' perceptions of learning were substantially higher among students who were taught utilizing the blended method than in traditional classroom settings.<sup>8</sup>

This review aimed to examine the E-learning Experiences among nursing students in terms of readiness for e-learning, comparison between the traditional method and virtual E-learning, and challenges with the E-learning system among nursing students in all aspects. The results provided a potential lead in health education and also guided our study's assumptions to enhance the higher education system. The preliminary evidence suggests that integration of blended learning into medical education at the undergraduate level might accelerate nursing students' transition to competency-based education and lifelong learning.<sup>7,10,19</sup>

Additionally, the effects of situated e-learning on the knowledge and performance of students' readiness in nursing were examined in five published outcome studies. The findings produced from these articles provide critical guidelines

for academics as well as institutions and companies providing health sciences services that seek to transition to distant education (<sup>11-13</sup>

This review helped to identify the challenges of e-learning, which concluded that accessibility concerns were the most significant obstacle for students studying online, followed by social difficulties, instructor issues, academic obstacles, and general factors to consider.<sup>16</sup> Six articles,<sup>7,8,10,18-20</sup> used blended approaches that combine traditional teaching methods with educational technology in nursing education. This is what Furnes confirmed: blended learning is an effective method for improving communication skills in preparation for a career in mental health nursing,<sup>20</sup> and the students were satisfied with the overall programmer blended teaching methods.

The majority of the publications analyzed combined technology with the face-to-face classroom environment, even though they imply that strategy necessitates a cautious and well-planned approach with enough time for each student to be visited.<sup>7</sup>

Six articles<sup>11,13,14,18,20,22</sup> were reviewed regarding the Examination of Students' Level to E-Readiness for the impact of learning and e-learning styles on student engagement, a significant predictor of their satisfaction and motivation to engage in e-learning. In the literature, characteristics such as gender, age, level, program delivery, and previous educational experience showed a significant relationship with readiness for self-directed learning.<sup>9,14</sup> The body of research from nursing suggests that self-directed learning readiness is a notion that piques people's curiosity and attention. Along with a high performance score, nursing students demonstrated a higher level of self-efficacy. Parallel intervention in motivating training refined their favorable attitude toward e-learning.<sup>12,25</sup> Similar to many studies, the result of this review indicates that when the group is under control, positioned e-learning significantly improves learner knowledge and performance.<sup>14,15</sup> Lastly, we assumed that there were many challenges with the E-learning system after reviewing 3 articles regarding the main issue from the perspective of the whole system and from the perspective of the students themselves. The primary impediment to e-learning is the poor quality of Internet services.<sup>26</sup> Equally important are issues related to training, working circumstances, technological background, skills, copyright protections, and professional growth which are always vital in the adoption of e-learning at universities.<sup>16</sup>

## Limitation

This review included cross-sectional, quasi-experimental, and qualitative studies with their well-known biases and limitations. Those limitations are inherent in the designs of each study type which such as the possibility of selection biases, inability to establish temporal precedence, confounding effects, and lack of random assignment. Even the most rigorous randomized studies will not be able to blind the participants from the nature of the intervention. Causal inferences are therefore challenging. Despite these limitations, this review still offers valuable insights on the impact of online learning on the educational experience.

## Recommendations and Implications

Blended learning optimizes the learning process by combining the benefits of in-person teaching with online educational techniques. This combination enables immediate, live interaction and individual engagement similar to traditional classrooms, while also providing the convenience, accessibility, and customized learning options of online platforms. Experts recommend that this combination enhances students' learning outcomes and motivation while also helping them achieve their learning goals. Highlighting the importance of involving students early on, engaging in community service, and customizing learning materials can greatly enhance the quality of digital resources, ensuring they meet student needs effectively. Moreover, this strategy emphasizes the significance of faculty training in mastering methods that support self-directed learning, ensuring that educators are prepared to effectively guide students in this blended setting. Blended learning combines the best of traditional classrooms with the flexibility and resources of online learning, creating a comprehensive approach that caters to various learning preferences and enhances the educational experience.

Students and faculty members must have access to the internet at the university, as well as adequate hardware to support e-learning. Regular online training and seminars are essential for supporting the use of e-learning by teaching staff in particular. Specific implications for nursing practice include strategic planning by management and curriculum

enhancement by the decision-makers, as well as boosting standards at the lecturer level on many specialized elements such as materials and activities.

This data may be utilized to assist decision-makers in selecting approaches that influence student motivation and knowledge level, as well as to encourage change in the classroom. Course makers must consider learning styles, learning needs, techniques, and internet connectivity throughout the design process, as well as logistical difficulties such as physical classrooms. In addition, strategies for educating student nurses must be developed and evaluated. It is also crucial that these studies be conducted to demonstrate their efficacy, and they should focus on a variety of different levels of findings. More research can explore the cost-effectiveness of blended nursing courses and assess the readiness of e-learning for nursing students. Future studies should broaden their reach to include licensed nursing, nurse practitioners, and all graduate-level nursing education programs to obtain a more thorough perspective of the blended learning methodologies employed in nursing education.

## Conclusion

The integral incorporation of blended learning into undergraduate medical education might accelerate nursing students' transition to competency-based education and life-long learning. Also, increased integration of blended learning into undergraduate medical education might accelerate nursing students' transition to competency-based education and life-long learning.

This is significant, demonstrating that blended learning methodologies are heavily used to solve challenges related to classroom material and concluding that e-learning would improve learners' satisfaction with blended learning. This scoping review illustrated nursing students' preference for e-learning and the substantial relationship between several subdomains of preparation in terms of technology availability, use, self-confidence, and acceptability. In addition, we revealed that students' preferences had a strong relationship with e-learning preparedness. Establishing a competitive atmosphere and policies is one of the fundamental features of an E-learning system. Computer equipment motivates students to study more effectively. Internet use and access to technology are some of the challenges that information and communication technologies and e-learning programs encounter.

As a result, we may assume Technology availability is vital to the success of the e-learning idea; without it, it would be a pipe dream. Finally, Students must improve their technological abilities in order to fully benefit from the opportunities afforded by e learning.

## Disclosure

The author reports no conflicts of interest in this work.

## References

1. Rice S, Gregor MN. E-Learning and the Academic Library: essays on Innovative Initiatives. *McFarland*. 2016;199.
2. Zaben M, Tayeh A, Khmour M, et al. The Impact of E-Learning in Postgraduate Health Education: experience from Palestine. Proceedings of The 3rd Annual Forum on E-Learning Excellence; 2010.
3. Xavier T, Kuriakose ML, Robin M, Agrawal D. Development and Implementation of an e-Learning Program on Glasgow Coma Scale. *Indian J Neurotrauma*. 2023;20(01):001–3. doi:10.1055/s-0041-1739480
4. McDonald EW, Boulton JL, Davis JL. E-learning and nursing assessment skills and knowledge – an integrative review. *Nurse Educ Today*. 2018;66:166–174. doi:10.1016/j.nedt.2018.03.011
5. Richter SL, Schuessler JB. Nursing Faculty Experiences and Perceptions of Online Teaching: a Descriptive Summary. *Teach Learn Nurs*. 2019;14(1):26–29. doi:10.1016/j.teln.2018.09.004
6. Ryan M, Gwinner K, Mallan K, Livock C. Preparing work-ready nurses: reflexive learning for diverse students in the Australian vocational education and training sector. *Stud Contin Educ*. 2017;39(3):268–285. doi:10.1080/0158037X.2017.1279136
7. Choi SH, Kim YH. Effects of Smoking Cessation Intervention Education Program Based on Blended Learning among Nursing Students in South Korea. *Osong Public Health Res Perspect*. 2018;9(4):185–191. doi:10.24171/j.phrp.2018.9.4.07
8. Alshawish E, El-Banna MM, Alrimawi I. Comparison of blended versus traditional classrooms among undergraduate nursing students: a quasi-experimental study. *Nurse Educ Today*. 2021;106:105049. doi:10.1016/j.nedt.2021.105049
9. Elfaki N, Ahmad I, Abdelrahim R. Impact of e-learning vs traditional learning on students' performance and attitude. *Int Med J*. 2019;1:13412051.
10. Coyne E, Frommolt V, Rands H, Kain V, Mitchell M. Simulation videos presented in a blended learning platform to improve Australian nursing students' knowledge of family assessment. *Nurse Educ Today*. 2018;66:96–102. doi:10.1016/j.nedt.2018.04.012
11. İbili E Examination Of Health Science University Students' Level Of Readiness For E-Learning; 2020. Available from: <http://acikerisim.afsu.edu.tr/xmlui/handle/20.500.12933/482>. Accessed April 29, 2024.

12. Kabir H, Tonmon TT, Hasan M, et al. Association between preference and e-learning readiness among the Bangladeshi female nursing students in the COVID-19 pandemic: a cross-sectional study. *Bull Natl Res Cent.* 2022;46(1):8. doi:10.1186/s42269-022-00697-0
13. Muthuprasad T, Aiswarya S, Aditya KS, Jha GK. Students' perception and preference for online education in India during COVID –19 pandemic. *Soc Sci Humanit Open.* 2021;3(1):100101. doi:10.1016/j.ssaho.2020.100101
14. Yilmaz R. Exploring the role of e-learning readiness on student satisfaction and motivation in flipped classroom. *Comput Hum Behav.* 2017;70:251–260. doi:10.1016/j.chb.2016.12.085
15. Ergun E, Adibatmaz FBK. Exploring the predictive role of e-learning readiness and e-learning style on student engagement. *Open Prax.* 2021;12(2):175–189. doi:10.5944/openpraxis.12.2.1072
16. Aboagye E, Yawson JA, Appiah KN. COVID-19 and E-Learning: the Challenges of Students in Tertiary Institutions. *Soc Educ Res.* 2021;1–8.
17. Frazer C Online Faculty Teaching Effectiveness and Quality Indicators. 2010-2016 Arch Posters; 2012. Available from: <https://scholarworks.waldenu.edu/archivedposters/23>. Accessed April 29, 2024.
18. Pather N, Blyth P, Chapman JA, et al. Forced Disruption of Anatomy Education in Australia and New Zealand: an Acute Response to the Covid-19 Pandemic. *Anat Sci Educ.* 2020;13(3):284–300. doi:10.1002/ase.1968
19. Venkatesh S, Rao YK, Nagaraja H, Woolley T, Alele FO, Malau-Aduli BS. Factors Influencing Medical Students' Experiences and Satisfaction with Blended Integrated E-Learning. *Med Princ Pract.* 2019;29(4):396–402. doi:10.1159/000505210
20. Furnes M, Kvaal KS, Høye S. Communication in mental health nursing - Bachelor Students' appraisal of a blended learning training programme - an exploratory study. *BMC Nurs.* 2018;17(1):20. doi:10.1186/s12912-018-0288-9
21. Lalima Dangwal KL. Blended Learning: an Innovative Approach. *Univers J Educ Res.* 2017;5(1):129–136. doi:10.13189/ujer.2017.050116
22. Ibili E Examination of health science university students' level of readiness for e-learning; 2020. Available from: <http://acikerisim.afsu.edu.tr/xmlui/handle/20.500.12933/482>. Accessed April 29, 2024.
23. Wirawan AW, Wahyudi W. E-LEARNING EQUIPMENT IN LEARNING PROCESSAT VOCATIONAL HIGH SCHOOL. *Soc Humanit Educ Stud SHES Conf Ser.* 2019;1(2):61–66.
24. Elfaki N, Ahmad I, Abdelrahim R. Impact of e-learning vs traditional learning on students' performance and attitude. *Int Med J.* 2019;24:225–233.
25. Rohwer A, Motaze NV, Rehfuess E, Young T. E-learning of evidence-based health care (EBHC) to increase EBHC competencies in healthcare professionals: a systematic review. *Campbell Syst Rev.* 2017;13(1):1–147. doi:10.4073/csr.2017.4
26. Affouneh SJ, Raba AAA. An Emerging Model of E-Learning in Palestine: the Case of An-Najah National University. *Creat Educ.* 2017;8(2):189–201. doi:10.4236/ce.2017.82016
27. Slater CE, Cusick A. Factors related to self-directed learning readiness of students in health professional programs: a scoping review. *Nurse Educ Today.* 2017;52:28–33. doi:10.1016/j.nedt.2017.02.011

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