



# Nursing Students' Readiness For E-Learning Experience Cross-Sectional Study

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## ARTICLE INFO

## ABSTRACT

**Background** The necessity of infusing e-learning into nursing education has grown in the world due to improvements in technology and shifting perspectives in education This study aims to assess e-learning preparedness among nursing students, considering demographic and academic factors.

**Design** A cross-sectional survey design was employed, involving 290 nursing students from the Faculty of Nursing at Arab American University, Palestine.

**Methods** Data were collected on technology access, online skills and relationships, motivation, online audio/video comfort, internet discussions, and the importance of online activities for success. Demographic factors, including gender, academic level, age, and GPA, were also examined. Descriptive statistics, ANOVA, and regression analyses were conducted to explore relationships and differences among variables.

**Results** The study revealed a balanced gender distribution among participants, with a significant representation of second-year students. Most students fell within the 18-23 age range, with diverse academic performance levels. On average, participants demonstrated reasonable technology access, competent online skills, and moderate motivation for e-learning. Gender-related differences were observed in motivation and online audio/video comfort, while academic level was associated with several dependent variables. GPA influenced the perceived importance of online activities for success.

**Conclusion** The study explores nursing students' academic and demographic characteristics, revealing that most are female, in their second year, aged 18-20. They show strong involvement in internet discussions, online skills, and technological access. However, gender disparities exist, and further research is needed to understand these factors.

**Keywords:** Nursing Education, Educational Technology, Technology Acceptance, e-learning, Academic Performance.

## Introduction

The necessity of infusing e-learning into nursing education has grown in the world due to improvements in technology and shifting perspectives in education. Nursing students worldwide are adjusting to this change, and one of the most important factors in determining their success is how qualified and prepared for e-learning (Ross et al., 2023). Effective e-learning technology is crucial in conflict settings, particularly when mobility is a major obstacle. Palestine is a country where e-learning is essential because of movement and access restrictions resulting from the Israeli-Palestinian conflict, political unrest and the public health crises. These e-learning technologies can provide nursing students alternative options in Conflict Situations, indicating that e-learning can be a useful tool in reducing the negative effects of conflict on education (Shraim, 2018) .

During the COVID-19 outbreak, the use of e-learning in Palestine has also been studied. These studies shed light on the difficulties associated with e-learning adoption. Although the pandemic context is different from the conflict situation, it highlights the obstacles to digital learning in Palestine. These obstacles included resources limitation, weak infrastructure, and lack of acceptance among Palestinian educators of utilizing e learning technologies in education (Mahamid et al., 2022). Taking note of these obstacles, programs such as

"Equip Palestine with e-Learning" seek to strengthen Palestinian university policies, capabilities, and research in blended and online learning. This all-encompassing strategy aims to develop a workable and inclusive e-learning system by addressing the requirements holistically. The establishment of a strong e-learning infrastructure that can support education during and after times of conflict depends on such initiatives (United Nation, 2021).

Therefore, there is a need for upgrading infrastructure, enhancing internet accessibility, preparing teachers, producing top-notch content, and formulating smart legislation in the Palestinian context. A customized strategy is also required to increase acceptance of e-learning technology. The necessity for flexible educational systems is highlighted by the epidemic and the current Israeli-Palestinian conflict. Based on all these contexts this research aims to assess e-learning preparedness among nursing students, considering demographic and academic factors.

## Methodology

### *Study Design and population*

A cross-sectional quantitative investigation was conducted. This study included a sample of 290 male and female nursing students from the Arab American University who were enrolled in the second semester of the academic year 2022–2023.

The sample size was calculated using G\*power with an alpha level of 0.05, an effect size of 0.5, and a power of 0.80, giving a total sample of 290 nursing students were recruited all of whom agreed to participate, response rate of 100 %. All students enrolled in online courses during the current academic year received an email recruitment message with a link to the online survey. No incentives were provided for research participation. To all nursing students registered in online courses in the 2022–2023 academic year, a detailed email explaining the goals, methods, and ethical issues of the study was sent along with a link to the Google Forms survey. participants' informed consent was obtained, and guarantees of data anonymity and confidentiality were given in the first correspondence and on the survey website.

IRP approval from Arab American University was obtained.

### *Inclusion Criteria*

All tiers of students enrolled in the nursing bachelor degree at the Jenin branch of Arab American University, with fixed or mobile Internet access, who are willing to share their thoughts and experiences regarding the matter, as well as male and female students who utilized e-learning and replied to the recruitment email.

### *Exclusion Criteria*

Nursing students who choose to exclude themselves by not filling out the survey, postgraduate nursing students, undergraduate nursing students who did not reply to my email, and nursing students who do not sign up for online courses.

### *Study tool*

The e-Learning readiness assessment, developed by Watkins et al., 2004 is a self-assessment tool validated for studying e learning preparedness among nursing students. It consists of 27 statements related to e-Learning success, grouped into six subscales: technology access, online skill and relationships, motivation, online audio/video, internet discussions, and importance to success. Participants rate their readiness on a 5-point Likert scale. The average of the e-Learning readiness includes 5 levels: the average from 1.00 to 1.49 is least, average from 1.50 to 2.49 is less, average from 2.50 to 3.49 is fair, the average from 3.50 to 4.49 is high, and average from 4.50 to 5 is the highest.

### *Ethical Considerations*

It was clarified that involvement in the research is entirely optional and anonymous. Before the assessment, the nurses gave their consent, and a written request and consent were received. The Institutional Review Board (IRB) at Arab American University gave its approval before the study, and the anonymity and confidentiality of participant data were preserved rigorously.

### *Data Analysis*

The data analysis was performed using version 26 of the Statistical Package for the Social Sciences (SPSS). The study sample characteristics were obtained using frequencies and percentages. ANOVA was conducted between the e-learning score and academic levels, and descriptive statistics, such as measures of central tendency and means, were computed for each subscale and the overall score of the e-learning readiness scale.

### *Results*

Table 1 presents the demographic and academic characteristic of the 290 study participants. The gender distribution of the participants showed that 176 students identified as female (60.7%) and 114 as male (39.3%). The majority were in their second year, including 112 students (38.6%), closely followed by those in their third year, comprising 78 students (26.9%). Of the participants, 74 individuals (25.5%) were first-year students, while 26 individuals (9.0%) belonged to the smaller group of fourth-year students.

### *Descriptive statistics*

The majority, 151 participants, or 52.1, belonged to the 18–20 age group. The age group that was next most common, with 133 participants (45.9%), was 21–23. Just 6 people (2.1%) out of the entire sample were in the 24 to 26-year-old age range.

Additionally, based on the participants' GPA categories, the majority of participants, or 206 (71.0%), had GPAs in the 1.50–2.49 range. A smaller but noteworthy subset of participants, 73 individuals, or 25.2, had GPAs between 2.50 and 3.49. Eleven individuals (3.8%) who were considered exceptional achievers had GPAs between 3.5 and 4.

Table 2 shows the mean score for each domain among participants. The technology access component had a mean score of 3.7 (SD= 0.06), indicating generally adequate technological access among participants. The results show that participants place a high value on their online abilities and relationships, with a mean score of 3.9 and a low standard deviation of 0.05. With an average score of 3.4 and a standard deviation of 0.07, participants' motivation levels are nevertheless somewhat lower. At a mean of 3.8 and an SD of 0.05, the online audio and video encounters was high,

With a mean score of 3.9 out of a possible 5, "Internet discussions" have been assessed as substantially influential and engaging. This high score indicates that people are very engaged in or satisfied with online discussions. Additionally, with a mean score of 3.9 (SD= 0.05), participants likewise evaluated the "importance of these discussions to their success" as highly significant. The responses' uniformity reveals that participants have a common understanding of how important online chats are to their success.

With a mean score of 3.8 (SD= 0.05), the survey's overall average shows that participants' levels of involvement, expertise, and perceived relevance are consistently high across all assessed domains. This high degree, along with the low response variability, shows that the studied group as a whole recognizes the importance and competency of digital interactions and competencies consistently. It shows not just a general proficiency with digital abilities but also a group assessment of these skills in the context of the participants' digital experiences.

Table 3 examines gender differences in e-learning components among 114 males and 176 females. A significance value of 0.046 indicates that the only area where there were significant gender disparities was in access to technology, where men (mean = 3.8) had more access than women (mean = 3.6). Other domains showed no significant gender in online audio video: males, importance to success.

#### *Multivariable static*

Table 4 shows present the beta Coefficients and p values of the domains by background characteristic (Gender, school year, GPA). In every domain, female's scores are a slightly lower than males. However, most of these differences are not statistically significant, as shown by p-values higher than the conventional significance level of 0.05. However, the p-value in the Overall domain is 0.033, indicating a statistically significant difference.

Regarding School Year, a statistically significant tendency of second-year students to score considerably lower than first-year students in Technology access, Online skills, Motivation, Online audio, and Internet discussions was observed. In certain domains, third-year students also exhibited lower results, though these discrepancies are typically less noticeable. In most categories, fourth-year students did not exhibit significant variations from first-year students. Regarding GPA, comparing the coefficients for various GPA ranges to the reference group (1.5 - 2.49 GPA), an absence of significant variations is noticed.

### **Discussion**

This study aims to assess e-learning preparedness among nursing students, considering demographic and academic factors. In many universities today, e-Learning is a standard form of instruction and training. However, even though there is a greater demand than there is supply for online learning possibilities, many professionals are starting to wonder if online learners are ready for the demands of an online learning environment (Edumadze et al., 2017) and for student-centered e-learning activities. This implies that the experiences that students have now influence their motivation to use e-learning platforms, and that to promote student-centered digital learning experiences, infrastructure improvements and faculty training must be taken into account (Koh & Kan, 2021).

The results of this study show both new and recurrent tendencies when compared to previous studies on nursing students' preparedness for e-learning. A potential disparity between having resources and being motivated to use them effectively is shown when 'Motivation' is compared to other high-scoring variables. For instance, despite having excellent ratings, "Technology Access" and "Online Skills and Relationships" might not be utilized to their full potential if there is not enough motivation to do so. According to Elshareif & Mohamed study, which demonstrated the expansion of e-learning platforms and the importance of motivation in enabling students to take charge of their own learning (Elshareif & Mohamed, 2021) .

Regarding the comparison between the genders in the use of technological means, the topics that were studied show that both genders have similar experiences and perspectives on numerous aspects of e-learning, except technology access. Our study is consistent with the study conducted by Cai, Z., Fan, X., & Du, J., which showed that men are generally more confident and have more favorable attitudes when it comes to using technology than women (Cai et al., 2017) .

For motivation, females have a coefficient of -0.424 with a p-value of 0.002. This indicates a statistically significant difference between females and males in this domain, with females scoring lower on motivation than males (the reference group). On the contrary, 43.46% of Bangladeshi female nursing students preferred online learning, and readiness was influenced by several variables including age, degree, place of residence,

parents' highest level of education, and eye issues. While it does not specifically address gender motivational differences, this shows that female nursing students are significantly prepared for e-learning (Kabir et al., 2022). In contrast, There were no gender differences in any of the subscales of another investigation on postgraduate students in a virtual medical education program that included nursing students. This could imply that, in some situations, gender differences in e-learning motivation and preparedness are negligible (Cadet, 2021).

Our study shows second-year students tend to score significantly lower in technology access compared to first-year students. On the contrary, in a study titled "Evaluating the Effectiveness of e-Learning Students of the College of Nursing," second-year students at the college had greater access to technology than first-year students do for e-learning (Shihab et al., 2022). Another study Generated Themes of E-learning to Exploration of Students' Challenges concludes that second-year nursing students have difficulties with high vs. low-stakes assignments, instructional immediacy, self-confidence, and creative navigation (Ramaiah et al., 2021). It appears that depending on personal and environmental conditions, second-year nursing students' experiences with and access to technology for e-learning can differ greatly. All of these studies point to a complex and varied landscape of nursing students' preparation for e-learning, with some having greater access and others facing major obstacles.

Our study shows Second-year students tend to score significantly lower in online skills compared to first-year students, To become confident and proficient in navigating online courses, the majority of nursing students had low domain-specific and overall online learning self-efficacy scores, according to Tiwari (Tiwari & Srivastava, 2021). This suggests that skill-based training is necessary. This was confirmed by a study that highlighted that just 50% of nursing students had sufficient eHealth literacy skills, especially when it comes to finding reliable health resources and applying this knowledge to make decisions about their health (Rathnayake & Senevirathna, 2019), suggesting that individual characteristics may have an impact on how well students adapt to online learning environments.

Our study shows Second-year students tend to score significantly lower in Motivation, Online audio, and Internet discussions compared to first-year students, this is consistent with a study by Abd-El-Aziz in e-learning environments, second-year nursing students in the study group scored less motivated than first-year students (Abdelaziz et al., 2011). Pramila (2016) noted e-learning environments, second-year nursing students performed worse on self-motivation tests than first-year students (Ravindranadhan, 2016).

Reasons for the lower preparedness among second-year students could be the increased workload during the second year resulting from the demanding curriculum with increased clinical rotations and coursework. This heavier workload could leave them with less time to adapt to the online learning environment compared to first-year students. The clinical practice training requires physical presence and is less suitable for e-learning than theoretical lectures. This implies that there is a need for innovations in the e-learning technologies to make them simulate the real experiences with greater fidelity. Innovations in the fields of virtual and augmented realities can be helpful in this regard.

### *Strengths of the study*

The study highlights a holistic investigation into e-learning preparedness, spanning variables such as technology access, motivation, and online skills. The sample is very varied, with equal representation of both genders and academic levels. This ensures a deep understanding of the demographic and improves the generalizability and applicability of the results. The application of a range of statistical analyses, including descriptive, ANOVA, and regression, demonstrates the analytical rigor and allows for a thorough examination and interpretation of the data and the correlations between the variables. Additionally, the study fills a clear vacuum in the literature by illuminating the previously unexplored topic of nursing students' preparedness for e-learning in Palestine. As a result, it presents insightful information that could influence future research and policy decisions in this field.

### *Limitations of the study*

The study on e-learning readiness has limitations, including a cross-sectional design, inherent biases in self-reported data, geographical limitations, and a limited exploration of demographic variables. The methodology involving email recruitment and data collection may also introduce non-response bias. The study's reliance on technology may exclude students with limited access or lower digital literacy, and the quantitative approach may limit a deeper qualitative investigation.

### *Conclusions*

The study examines the academic and demographic characteristics of nursing students and their preparedness for online learning. Most are female, in their second year, between the ages of 18 and 20. All domains exhibit strong levels of involvement and perceived relevance, according to the data; internet discussions, online skills, and technological access stand out. There are gender disparities, with men claiming slightly more access. Students in their second year score lower, indicating a need for focused assistance. The study highlights the value of ongoing development and assistance for various student populations. To fully understand the intricacies of these elements and how they affect e-learning tactics, more research is required.



## References

1. Abdelaziz, M., Samer Kamel, S., Karam, O., & Abdelrahman, A. (2011). Evaluation of E-learning program versus traditional lecture instruction for undergraduate nursing students in a faculty of nursing. *Teaching and Learning in Nursing*, 6(2), 50–58. <https://doi.org/10.1016/j.teln.2010.10.003>
2. Cadet, M. J. (2021). Examining the Learning Characteristics of Nursing Students: A Literature Review. *Journal of Nursing Education*, 60(4), 209–215. <https://doi.org/10.3928/01484834-20210322-05>
3. Cai, Z., Fan, X., & Du, J. (2017). Gender and attitudes toward technology use: A meta-analysis. *Computers & Education*, 105, 1–13. <https://doi.org/10.1016/j.compedu.2016.11.003>
4. Edumadze, J. K. E., Ogoe, J. I., Essilfie, G., Edumadze, G. E., Osei-Gyasi, A. A., & Graham, R. E. (2017). *E-Learning at the University of Cape Coast, Ghana-Are our Distance Education Students Technologically Ready?* <http://ir.ucc.edu.gh/jspui/handle/123456789/4179>
5. Elshareif, E., & Mohamed, E. A. (2021). The Effects of E-Learning on Students' Motivation to Learn in Higher Education. *Online Learning*, 25(3). <https://doi.org/10.24059/olj.v25i3.2336>
6. *Establishing the E-Learning Platforms in Palestine for higher education | Department of Economic and Social Affairs*. (n.d.). Retrieved December 13, 2023, from <https://sdgs.un.org/partnerships/establishing-e-learning-platforms-palestine-higher-education>
7. Kabir, H., Tonmon, T. T., Hasan, Md. K., Biswas, L., Chowdhury, Md. A. H., Islam, M. D., Rahman, M., & Mitra, D. K. (2022). Association between preference and e-learning readiness among the Bangladeshi female nursing students in the COVID-19 pandemic: A cross-sectional study. *Bulletin of the National Research Centre*, 46(1), 8. <https://doi.org/10.1186/s42269-022-00697-0>
8. Koh, J. H. L., & Kan, R. Y. P. (2021). Students' use of learning management systems and desired e-learning experiences: Are they ready for next generation digital learning environments? *Higher Education Research & Development*, 40(5), 995–1010. <https://doi.org/10.1080/07294360.2020.1799949>
9. Mahamid, F. A., Bdier, D., & Nour, A. I. (2022). Mental Health, E-learning, and Future of Education in Palestine After the COVID-19 Pandemic. In A. Hamdan, A. E. Hassanien, T. Mescon, & B. Alareeni (Eds.), *Technologies, Artificial Intelligence and the Future of Learning Post-COVID-19: The Crucial Role of International Accreditation* (pp. 255–266). Springer International Publishing. [https://doi.org/10.1007/978-3-030-93921-2\\_15](https://doi.org/10.1007/978-3-030-93921-2_15)
10. Ramaiah, P., Tayyib, N. A., Alsolami, F. J., Lindsay, G. M., Asfour, H. I., Alshmemri, M. S., & Alsulami, S. A. (2021). Generated Themes of E-learning: Exploration of Students' Challenges During Covid-19. *Indian Journal of Science and Technology*, 14(14), 1133–1138. <https://doi.org/10.17485/IJST/v14i14.425>
11. Rathnayake, S., & Senevirathna, A. (2019). Self-reported eHealth literacy skills among nursing students in Sri Lanka: A cross-sectional study. *Nurse Education Today*, 78, 50–56. <https://doi.org/10.1016/j.nedt.2019.04.006>
12. Ravindranadhan, P. (2016). Self Motivation among B. Sc Nursing Students: A Comparative Study. *International Journal of Nursing Education*, 8, 82. <https://doi.org/10.5958/0974-9357.2016.00097.0>
13. Ross, D., Fairley-Murdoch, M., Nicholson, H., & Hanlon, S. (2023). Enhancing dermatology nursing education in Scotland and Ireland: A multifaceted approach. *British Journal of Nursing*, 32(22), 1071–1077. <https://doi.org/10.12968/bjon.2023.32.22.1071>
14. Shihab, L. A., Kareem, A. F., Abbas, S. A., & Hussein, S. A. A. (2022). Evaluating the Effectiveness of e-Learning Students of the College of Nursing. *Webology*, Volume 19(No. 1), 4791–4798. <https://doi.org/10.14704/WEB/V19I1/WEB19321>
15. Shraim, K. (2018). Palestine (West Bank and Gaza Strip). In A. S. Weber & S. Hamlaoui (Eds.), *E-Learning in the Middle East and North Africa (MENA) Region* (pp. 309–332). Springer International Publishing. [https://doi.org/10.1007/978-3-319-68999-9\\_14](https://doi.org/10.1007/978-3-319-68999-9_14)
16. Tiwari, S. K., & Srivastava, S. P. (2021). Self-efficacy of online learning among nursing students during COVID-19 pandemic. *International Journal Of Community Medicine And Public Health*, 8(9), 4439–4445. <https://doi.org/10.18203/2394-6040.ijcmph20213549>