

Online Learning Modalities In Undergraduate Nursing Education: Competencies, Challenges, and Opportunities Among Nursing Students

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ABSTRACT

Online learning has reshaped nursing education, requiring evaluation of students' competencies, challenges, opportunities, preparedness, and readiness for professional clinical practice. The study used a quantitative descriptive-correlational and comparative design among 214 Level 2–4 nursing students selected through stratified random sampling from a nursing institution in Sampaloc, Manila. Data were gathered using a researcher-developed, three-part questionnaire with a four-point Likert scale covering demographics, 11 core competencies, and online learning challenges and opportunities. Students strongly demonstrated all 11 core competencies, with overall medians of 4.00. Online learning challenges were generally rated as significant, particularly technological barriers, motivation, resource availability, and academic performance. Participation and motivation were significantly related to resource management and communication, while academic-performance impact related to legal, ethical, and communication competencies. Selected differences emerged across age, sex, device use, and socioeconomic status overall. Online learning effectively supported cognitive, digital, ethical, research, communication, and collaborative competencies, but could not fully replace laboratory and clinical instruction. A competency-based blended approach is therefore necessary to sustain strengths while effectively addressing technological, motivational, academic, and clinical limitations. Nursing institutions should enhance mobile-responsive learning, virtual simulations, telehealth activities, electronic documentation, interactive teaching, timely feedback, technical support, peer mentoring, and supervised face-to-face clinical practice for equitable competency development outcomes.

Keywords: nursing competencies, challenges, opportunities, online learning modalities, nursing institution

INTRODUCTION

Medication administration is a major nursing responsibility requiring accuracy. Online learning has transformed nursing education by providing flexible instruction despite limited classrooms and global disruptions. However, concerns remain regarding students' development of 11 core competencies, particularly those requiring clinical practice. Technological barriers, inadequate devices, limited interaction, reduced motivation, and insufficient resources may affect learning outcomes. Philippine studies rarely examine competencies, challenges, opportunities, and demographic differences simultaneously. Therefore, this study assesses nursing students' competencies and online learning experiences

to inform blended learning policies, instructional strategies, institutional support, clinical preparation, and future nursing education research.

Statement of the Problem

This study aims to assess nursing students' competencies in online learning modalities in relation to the 11 core nursing competencies, as well as to determine the challenges and opportunities they encounter.

Scope and Delimitations

The study will assess the 11 core competencies, challenges, and opportunities of Level 2–4 nursing students in a selected Sampaloc institution using a quantitative descriptive-correlational-comparative design and a researcher-made questionnaire. Its limitations include a single locale, self-reported responses, exclusion of Level 1 students, and a limited set of variables affecting generalizability.

Review of Related Literature

Online learning in nursing education supports theoretical knowledge, digital literacy, communication, research, and professional development when instruction is interactive and well organized (Pullan et al., 2023). However, unstable internet access, limited devices, reduced interaction, and inadequate clinical exposure may weaken engagement and skills development (Oducado & Estoque, 2021). Blended learning improves accessibility and supports varied instructional strategies (Camacho et al., 2024), yet online modalities cannot fully replace hands-on clinical training required for comprehensive nursing competency development (Abbasi et al., 2024).

Theoretical Framework

Patricia Benner's Novice to Expert Theory (1984) supported the assessment of how nursing students developed the 11 core competencies through continued education, practice, and exposure to online learning modalities. The theory explained how technological barriers, participation, resource availability, and year-level experiences could influence students' progression from novice toward competent nursing practice.

Dorothea Orem's Self-Care Deficit Nursing Theory (1959) supported the study by explaining how nursing students managed their own learning responsibilities in virtual environments. The theory was relevant to understanding how self-direction, motivation, independence, access to technology, and available support affected students' ability to participate effectively in online learning and to strengthen their nursing competencies.

METHODOLOGY

A quantitative research method was used to assess nursing students' competencies in online learning modalities and to determine the challenges and opportunities they encountered at a selected nursing institution in Sampaloc, Manila.

Research Design

This study utilized a descriptive-correlational and comparative research design. The descriptive design was appropriate for presenting the respondents' demographic profile and assessing their competencies across the 11 core nursing competencies. The correlational design examined the relationships between competency levels and online learning challenges, while the comparative design identified differences by year level, age, sex, electronic device used, and socio-economic status.

Research Steps

The study commenced with a comprehensive review of the literature on online nursing education, core nursing competencies, technological barriers, student participation and motivation, learning resources, academic performance, and blended learning strategies. The researcher then developed the questionnaire, secured expert validation and institutional approval, identified the respondents through stratified random sampling, administered the instrument, organized the collected data, conducted the appropriate statistical analyses, and formulated proposed enhancements to teaching and learning modalities based on the findings.

Data Collection and Sample Selection

Data were collected using a validated, researcher-developed questionnaire comprising three parts: respondents' demographic profiles, competencies aligned with the 11 core nursing competencies, and challenges and opportunities in online learning modalities. A four-point Likert scale was used to obtain definitive responses from the participants.

Data Analysis Methods

Frequency and percentage distribution were used to describe the respondents' demographic profile. The median and interquartile range were used to assess competency levels and online learning challenges because the data were ordinal and not normally distributed. Spearman's rho was used to examine significant relationships between competencies and challenges. The Kruskal–Wallis H test was used to detect differences among three or more independent groups, while the Mann–Whitney U test was used for comparisons between two groups. Bonferroni-adjusted pairwise post hoc comparisons were conducted when significant Kruskal–Wallis results were obtained. All hypotheses were tested at the .05 level of significance.

Research Hypothesis and Validation

At the 0.05 significance level, the study tested whether competencies, challenges, and opportunities were significantly related or differed when nursing students were grouped according to demographic profile.

Study Limitations and Ethical Considerations

The study was limited to Level 2 to Level 4 nursing students from one selected nursing institution in Sampaloc, Manila; therefore, the findings may not fully represent nursing students from other institutions or locations. The use of self-reported responses may also have resulted in social-desirability or response bias. The study observed informed consent, voluntary

participation, autonomy, beneficence, nonmaleficence, justice, privacy, anonymity, and confidentiality.

RESULTS AND DISCUSSION

Question 1. What is the demographic profile of the respondents?

The findings revealed that most respondents were Level 3 nursing students, aged 20 to 21 years, female, and smartphone users. Most also belonged to low-income and lower-middle-income households.

Question 2. What is the level of competencies of nursing students in online learning modalities in terms of the 11 core competencies?

The findings showed that nursing students strongly demonstrated all 11 core competencies, including safe and quality nursing care, resource management, health education, legal and ethical responsibility, professional development, quality improvement, research, record management, communication, and teamwork.

Question 3. What is the level of challenges and opportunities experienced by nursing students in online learning modalities?

The findings revealed that technological barriers, participation and motivation, support and resource availability, and the impact on academic performance were generally experienced as challenging. Students encountered unstable internet connectivity, reduced interaction, limited learning resources, delayed instructor support, distractions, and difficulty understanding lessons requiring demonstrations and clinical application.

Question 4. Is there a significant relationship between nursing students' competency levels and the challenges and opportunities they experience?

The findings showed that technological barriers, support, and resource availability were not significantly related to any of the 11 competencies. However, challenges in participation and motivation were significantly and negatively related to resource management and communication.

Question 5. Are there significant differences in nursing students' competencies, challenges, and opportunities when grouped according to demographic profile?

The findings revealed no significant differences according to year level. Age significantly differentiated safe and quality nursing care, research, communication, and teamwork, with students aged 24 years and above generally obtaining higher scores in specific comparisons. Sex significantly differentiated personal and professional development and technological barriers.

Question 6. Based on the findings, what teaching and learning modalities can be enhanced?

The findings support enhancing competency-based blended learning by combining mobile-responsive online instruction with laboratory and clinical practice.

SUMMARY

The findings demonstrated that nursing students generally possessed strong competencies across the 11 core nursing areas despite experiencing technological, motivational, academic, and resource-related challenges in online learning. The results further showed that selected competencies varied by age, sex, electronic device use, and socio-

economic status, highlighting the need for inclusive, interactive, mobile-responsive, and competency-based blended learning modalities.

CONCLUSIONS

- Nursing students strongly demonstrated competencies in safe and quality nursing care, management of resources and environment, health education, legal responsibility, ethico-moral responsibility, personal and professional development, quality improvement, research, record management, communication, and collaboration and teamwork.
- Age significantly differentiated safe and quality nursing care, research, communication, and collaboration and teamwork, with respondents aged 24 years and above generally obtaining higher scores in the significant comparisons.
- Sex significantly differentiated personal and professional development and technological barriers, with female students obtaining higher mean ranks in both areas.
- Electronic device use produced an overall significant difference in legal responsibility, although the post hoc comparison did not identify a specific pair of device groups with a statistically significant difference.
- Socio-economic status produced an overall significant difference in collaboration and teamwork, although the post hoc comparison did not identify a statistically significant difference between specific income groups.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are suggested:

- Nursing institutions should adopt a competency-based blended-learning model that combines online theoretical instruction with face-to-face laboratory practice, high-fidelity simulation, return demonstrations, and supervised clinical exposure.
- Student nurses should strengthen their self-directed learning by using digital calendars, study plans, task checklists, progress trackers, and time-management strategies to improve workload planning and task completion.
- Professional-development opportunities such as webinars, virtual seminars, continuing-education activities, professional-association programs, and digital portfolios should be integrated into nursing courses to promote lifelong learning.
- Online group activities should include clearly assigned roles, individual accountability, asynchronous contribution options, flexible schedules, and peer assessment to ensure equitable collaboration among students from different socio-economic backgrounds.

ACKNOWLEDGMENTS

The researcher sincerely thanks Dr. Amparo Miguel, Mrs. Renee Rose Corbano-Reyes, Mrs. Luv Suzette So, family, friends, and husband Mark Louis Faustino for their guidance, support, encouragement, and inspiration.

AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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