

The Impact of Online Learning Platforms on the Nursing Competencies in Their Clinical Application: Basis for Pedagogical Development

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ABSTRACT

This study examined the competencies of nursing students in both academic and clinical settings. It specifically assessed competencies in terms of skills, knowledge, and values, as well as clinical performance in skills laboratory and clinical duty. It also determined whether significant differences exist when respondents are grouped according to gender, year level, general weighted average (GWA), and learning modality. A descriptive-comparative research design was used, and data were analyzed using mean and inferential statistics. Findings revealed that nursing students are generally competent in all areas. In academic competencies, skills and knowledge were rated as "Agree," while values obtained the highest rating of "Strongly Agree," indicating strong professionalism and ethical behavior. In clinical competencies, both skills laboratory and clinical duty were rated as "Agree," showing that students are capable of performing nursing tasks in both simulated and actual clinical environments. Results further showed that there are no significant differences in competencies when grouped according to demographic profile, leading to the acceptance of the null hypothesis. The study concludes that nursing students demonstrate consistent and satisfactory competency levels across academic and clinical domains. However, there is a need to further enhance independence and performance in skills laboratory activities. The findings suggest that current teaching strategies and learning modalities are effective in promoting uniform competency development among students. Based on the results, it is recommended that nursing programs strengthen simulation-based learning, improve blended learning strategies, and integrate more real-life clinical scenarios. These interventions aim to further enhance students' readiness for professional nursing practice and ensure continuous improvement in nursing

Keywords: nursing competencies, academic performance, clinical skills, values formation, blended learning, nursing education, clinical practice

INTRODUCTION

Online learning and Open and Distance e-Learning (ODEL) have expanded access to global higher education, providing flexible digital tools and virtual simulations that enhance critical thinking in safe environments. However, the sudden transition to flexible learning in the Philippines highlighted challenges like technical barriers and limited face-to-face interaction, leaving many nursing students feeling unprepared for hands-on hospital duties. By addressing a critical gap in how digital platforms affect practical clinical skills, this study aims to examine the impact of e-learning on nursing competencies to help develop more balanced pedagogical strategies

Statement of the Problem

This study aimed to determine the impact of online learning platforms on the development of nursing competencies and their clinical application, serving as a basis for pedagogical development.

Specifically, it sought to answer the following questions:

1. What is the demographic profile of the respondents in terms of;
2. What is the degree of nursing students' competencies in the academe in terms of;
3. What is the level of clinical competencies of the nursing students in the application of online platforms
4. Are there significant differences in the nursing students' competencies in the academe and Clinical competencies when grouped according to demographic profile?
5. Based on the findings, what pedagogical approaches can be developed?

Scope and Delimitations

This study examined the academic and clinical competencies of third-year nursing students at Saint Mary's College of Tagum, Inc., during the 2025–2026 academic year. Clinical competencies were assessed through performance in skills laboratories and application in clinical duties. The study also examined whether competencies differed by gender, year level, general weighted average (GWA), and learning modality. A total of 130 male and female third-year nursing students participated in the study. The research was limited to academic and clinical competency development and excluded faculty evaluations, hospital patient outcomes, graduates, professional nurses, and factors such as emotional stress, financial status, and family background.

Review of Related Literatures

The COVID-19 pandemic accelerated the global integration of e-learning strategies like virtual simulations and blended learning into nursing education to ensure flexibility and scalability during disruptions. Research indicates that these technology-based interventions significantly improve knowledge proficiency, critical competencies, and learning satisfaction compared to conventional teaching approaches. In response to this shift, Philippine nursing institutions like the University of the Philippines Manila rapidly transitioned to flexible learning models by retraining faculty and redesigning core curricula for online delivery.

Theoretical Framework

This research utilizes David Kolb's Experiential Learning Theory and Constructivist Learning Theory to emphasize that learning is an active process rooted in hands-on experience and critical engagement. Together, these frameworks illustrate how students actively construct knowledge through a four-stage experiential cycle, while underscoring that virtual simulations often fail to replicate the physical and emotional demands of actual clinical care. Ultimately, these theories support modern educational evidence showing that student-centered learning significantly improves critical thinking, knowledge retention, and clinical decision-making within nursing practice.

Conceptual Framework

This study is anchored on the Input-Process-Output (IPO) model to systematically organize variables and achieve its research objectives. The input consists of the respondents' demographic profiles, including sex, year level, previous general weighted average (GWA), and preferred learning modalities. The process involves collecting, organizing, and analyzing data through questionnaires, using statistical tools to assess nursing competencies and determine significant differences across demographic groups. Ultimately, the output delivers tailored pedagogical strategies designed to enhance nursing competencies and improve clinical application among students.

METHODOLOGY

Research Design

This study used a descriptive-comparative research design to evaluate the impact of online learning platforms on nursing students' competencies and clinical applications. Specifically, it outlined their skills, knowledge, values, and clinical performance, while detailing demographic factors such as sex, year level, academic average, and preferred learning modality.

Research Steps

Data collection began with securing ethical clearance and formal institutional approval to protect participant rights. Next, participants were briefed on the study's purpose and voluntary nature to obtain their informed consent prior to involvement. Finally, face-to-face or online surveys were administered, emphasizing strict ethical practices and clear communication to ensure the validity and reliability of the gathered data.

Data Collection and Sample Selection

This study utilized purposive sampling to select 130 third-year nursing students with sufficient clinical experience from Saint Mary's College of Tagum, Inc. during the 2025–2026 academic year. Following administrative approval, validated print and online questionnaires were administered, though the final sample size yielded a low statistical power of approximately 36.8% at an alpha level of 0.05.

Data Analysis Methods

Once verified, complete quantitative data were encoded and analyzed using SPSS to generate descriptive and inferential statistics based on best research practices. These statistical findings were then presented in tables and figures to clearly depict participant demographics, identify relationships between variables, and address the primary research aims.

Research Hypotheses and Validation

This study used *t*-tests and Analysis of Variance (ANOVA) at a 0.05 level of significance to test if nursing competencies differed across demographic profiles. The null hypothesis was accepted if the *p*-value exceeded 0.05, indicating no significant difference, and rejected if it fell below 0.05, confirming a statistically significant difference between groups.

Study Limitations and ethical considerations

Focused on a single institution, this study evaluated the immediate impact of online learning platforms on nursing competencies but lacked long-term, post-graduation assessments. Ethical integrity was maintained through voluntary participation, administrative approval, guaranteed confidentiality, and the explicit right for respondents to withdraw without penalty.

RESULTS AND DISCUSSION

SOP1 1. What is the demographic profile of the respondents in terms of sex, year level, GWA from the previous Sem and Preferred Learning Modalities?

The study's 130 respondents are predominantly female (60%) and demonstrate solid academic standing, with 84% maintaining a General Weighted Average between 1.51 and 2.50. Blended learning emerged as the dominant preferred instructional modality (47.69%), reflecting a broader post-pandemic global shift toward flexible, hybrid education. These

findings underscore the reliability of the student sample and highlight the critical need for institutions to develop adaptable instructional strategies and digital tools tailored to diverse learning preferences.

SOP 2. What is the degree of nursing students' competencies in the academe in terms of skills, knowledge, and values

Nursing students demonstrated high academic competency across skills, knowledge, and values, with overall weighted mean scores ranging from 4.17 to 4.32. While they expressed strong confidence in practical procedures, ethical values, and evidence-based practice, a neutral rating (3.40) revealed a gap in their clear understanding of core conceptual nursing concepts. To bridge this gap, the study suggests that nursing programs must strategically integrate interactive teaching methods, blended learning, and enhanced simulations to prepare students to become analytical, practice-ready professionals.

SOP 3. What is the level of clinical competencies of the nursing students in the application of online platforms in terms of skills laboratory and clinical duty?

Online learning platforms and virtual simulations successfully enhance nursing students' procedural knowledge and safety adherence but fall short of fostering full psychomotor mastery. While students demonstrate strong competencies during guided procedures in both laboratory and clinical settings, they struggle significantly with independent, unsupervised skill execution. To bridge this persistent gap between theoretical understanding and autonomous performance, educators must implement a blended approach that pairs digital modules with hands-on, face-to-face practice and supervised clinical exposure.

SOP 4. Are there significant differences in nursing student competencies in the academe and Clinical competencies when grouped according to demographic profile

Because nursing students' academic and clinical competencies showed no statistically significant differences across demographic profiles with p-values ranging from 0.60 to 0.83, the null hypothesis was accepted. This indicates that the program delivers equitable instruction, allowing educators to focus on universal instructional strategies and independent practical performance rather than demographic-specific interventions.

SUMMARY

The study reveals that the predominantly female, blended-learning student sample maintains solid academic standings and demonstrates strong competencies, with professional values scoring highest and skills laboratory performance showing room for improvement. Ultimately, all calculated *p*-values exceeded 0.05, leading to the acceptance of the null hypothesis and confirming that demographics and learning modalities do not significantly affect academic or clinical outcomes.

CONCLUSIONS

The study concludes that nursing students demonstrate a high level of academic and clinical competency, with professional values receiving the highest rating. While students are capable of understanding concepts and executing required tasks, they require further enhancement to develop independence during skills laboratory performance. Ultimately, the lack of significant differences across demographic profiles indicates that the program's instructional strategies and online platforms provide equitable, effective learning opportunities for all students.

RECOMMENDATIONS

Based on the conclusions drawn from the study, the following recommendations are proposed:

1. Enhance teaching strategies by integrating more simulation-based and hands-on activities to improve students' confidence and independence in performing clinical skills.
2. Strengthen blended learning approaches by ensuring a balance between online instruction and face-to-face laboratory experiences to maximize learning outcomes.
3. Encourage active participation in both online and practical learning activities to further develop competencies in skills, knowledge, and values.
4. Incorporate more competency-based assessments and real-life clinical scenarios to bridge the gap between theory and practice.
5. Conduct similar studies with a larger sample size or in different institutions to validate the findings and explore other factors that may influence nursing competencies.

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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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