

THEORETICAL FOUNDATIONS AND CLINICAL PRACTICES AMONG NURSING STUDENTS IN SELECTED HIGHER EDUCATION IN BACOLOD CITY: A MIXED METHODS APPROACH

*Carina Jana F. Cardinal

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Corresponding Author: Carina Jana F. Cardinal; doi:10.46360/globus.met.320261005

Abstract

The persistent theory-practice gap in nursing education challenges the development of clinical competence among graduating students. Despite the implementation of Outcomes-Based Education (OBE) frameworks in the Philippines, discrepancies between classroom instruction and clinical application remain evident. This study examined the relationship between theoretical foundations and clinical practices among fourth-year nursing students in selected higher education institutions in Bacolod City during the academic year 2024–2025. A convergent parallel mixed-methods design was employed. Quantitative data were collected from 166 graduating nursing students using structured questionnaires measuring theoretical foundations (foundational knowledge and critical thinking, ethical practice, leadership, lifelong learning, and technology use) and clinical practices based on Kolb's Experiential Learning dimensions. Descriptive and correlational analyses were performed. Qualitative data from semi-structured interviews with purposively selected participants were analyzed thematically. Integration was conducted through joint display analysis. Students demonstrated high levels of theoretical preparation and clinical competence. Significant positive correlations were found between theoretical foundations and clinical practices ($p < .05$). Strongest associations were noted between critical thinking and active experimentation, and between ethical foundations and reflective observation. Qualitative findings revealed three major themes: (1) translation challenges in high-pressure environments, (2) value of reflective mentorship, and (3) adaptive learning in resource-limited settings. Integration confirmed convergence between quantitative strength ratings and narrative experiences, while divergences highlighted emergency preparedness gaps. Strong theoretical preparation significantly enhances clinical performance; however, structured mentorship, simulation enhancement, and reflective integration mechanisms are necessary to close persistent gaps. A Nursing Theory–Practice Integration Enhancement Framework (NTPIEF) is proposed to strengthen curriculum alignment.

Keywords: Nursing Education, Theory-Practice Gap, Experiential Learning, Clinical Competence, Outcomes-Based Education, Philippines.

Introduction

The integration of theoretical knowledge and clinical practice remains a foundational challenge in nursing education globally. While nursing curricula emphasize evidence-based frameworks and competency-based outcomes, students frequently report difficulty applying theoretical concepts in dynamic healthcare environments.

In the Philippine context, the Commission on Higher Education (CHED) mandates Outcomes-Based Education (OBE) for nursing programs. Despite this policy direction, inconsistencies persist between classroom instruction and hospital-based Related Learning Experiences (RLE). Students often master theoretical models such as adaptation and caring theories but report limited application during clinical exposure.

Kolb's Experiential Learning Theory (1984) provides a relevant framework for understanding this gap. The theory proposes that effective learning occurs through a four-stage cycle: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. Nursing education ideally progresses through these stages; however, the depth of integration varies across institutions and clinical settings.

Although international studies confirm the existence of the theory–practice gap, limited research has explored how specific theoretical domains directly relate to experiential clinical dimensions within Philippine nursing education. This study addresses that gap.

Objectives

This study aimed to:

1. Describe students' theoretical foundations in:
 - Foundational knowledge and critical thinking
 - Professional and ethical practice
 - Leadership and collaboration
 - Lifelong learning and innovation
 - Technology in healthcare
2. Describe clinical practices in terms of:
 - Concrete experience
 - Reflective observation
 - Abstract conceptualization

- Active experimentation
- 3. Determine the relationship between theoretical foundations and clinical practices.
- 4. Explore students' lived experiences in integrating theory into practice.
- 5. Develop an enhancement framework to strengthen alignment.

Methods

Research Design

A convergent parallel mixed-methods design was used. Quantitative and qualitative strands were conducted simultaneously, analyzed independently, and integrated during interpretation.

Setting and Participants

The study was conducted in four CHED-recognized nursing institutions in Bacolod City. The quantitative sample consisted of 166 fourth-year BSN students selected through convenience sampling from a population of 853.

For the qualitative strand, 6-8 participants were purposively selected from survey respondents who demonstrated reflective insight and varied clinical exposure.

Instruments

A structured questionnaire was utilized to measure the primary variables of the study. The instrument assessed students' theoretical foundations across five domains: foundational knowledge and critical thinking, professional and ethical nursing practice, leadership and collaboration, lifelong learning and innovation, and technology in healthcare. It also evaluated clinical practice based on four experiential learning dimensions derived from Kolb's model, namely concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Prior to implementation, the questionnaire underwent content validation by experts in nursing education to ensure clarity, relevance, and alignment with the study objectives. Pilot testing was conducted to assess reliability and internal consistency, and necessary revisions were made before full-scale administration.

For the qualitative component, data were gathered through semi-structured interviews designed to explore students' lived experiences in integrating theory into practice. The interview guide focused on key areas including challenges encountered in applying theoretical knowledge, emotional and cognitive transitions during clinical exposure, mentorship experiences, and reflective learning practices. This approach allowed participants to

provide in-depth insights while maintaining alignment with the research objectives.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics, including means and frequency distributions, were computed to summarize respondent characteristics and variable ratings. Pearson correlation coefficients were calculated to determine the strength and direction of relationships between theoretical foundations and clinical practice dimensions. Comparative subgroup analyses were also conducted to examine potential differences based on demographic characteristics.

Qualitative data were analyzed using thematic analysis, following systematic coding, categorization, and theme development procedures. Patterns and recurring insights were identified to capture the essence of participants' experiences. Integration of quantitative and qualitative findings was achieved through joint display comparison, enabling the identification of areas of convergence and divergence between numerical trends and narrative accounts.

Ethical Considerations

Institutional permissions were secured. Participation was voluntary with informed consent. Confidentiality was strictly maintained.

Results

Quantitative Findings

The quantitative results revealed that fourth-year nursing students demonstrated a generally high level of theoretical preparedness across the five measured domains. Among these, lifelong learning and innovation and professional and ethical nursing practice obtained the highest composite mean scores, indicating that students perceived themselves as well-grounded in ethical standards, accountability, and continuous professional development. These findings align with studies suggesting that outcomes-based nursing curricula strengthen ethical reasoning and professional identity formation among graduating students (Perez & Martinez, 2024; Al-Mutairi et al., 2023). The strong ratings in technology in healthcare further reflect the increasing integration of digital tools, simulation platforms, and electronic health systems in contemporary nursing education, which have been shown to enhance knowledge retention and decision-making accuracy (Garcia et al., 2022).

Foundational knowledge and critical thinking also received high ratings, suggesting that students feel confident in their theoretical comprehension and analytical abilities. This supports Parker et al. (2021), who emphasized that structured theoretical

grounding enhances clinical reasoning and improves patient safety outcomes. However, slightly lower mean scores were observed in domains requiring rapid clinical decision-making, particularly those linked to emergency responsiveness and pharmacologic application. This finding is consistent with Brown (2019), who noted that while theoretical instruction may be comprehensive, students often struggle when required to apply knowledge in unpredictable or high-pressure situations.

In terms of clinical practice, students reported strong performance in reflective observation and concrete experience. The high mean score in reflective observation suggests that students actively engage in self-evaluation and post-duty analysis of their actions, an essential process in professional growth (Tiwari et al., 2021). Concrete experience also scored highly, indicating substantial exposure to direct patient care and procedural tasks during Related Learning Experiences (RLE). These results affirm Kolb's (1984) assertion that experiential exposure forms the basis of meaningful professional learning.

However, comparatively lower scores were noted in active experimentation. Although still within a positive range, this dimension reflected relative hesitation in independently modifying care approaches or initiating clinical innovations. This pattern may indicate partial progression through Kolb's experiential cycle—where students effectively experience and reflect but may not fully transition into confident adaptive experimentation. Similar findings were reported by Singh et al. (2022), who found that nursing students demonstrate strong knowledge and reflection but require structured mentorship to develop autonomous experimentation skills.

Correlation analysis further confirmed statistically significant positive relationships between theoretical foundations and clinical practice dimensions ($p < .05$). The strongest correlations were found between critical thinking and active experimentation, and between professional and ethical practice and reflective observation.

These findings suggest that analytical depth enhances adaptive clinical behavior, while ethical grounding strengthens reflective learning processes. This relationship supports experiential learning theory and reinforces existing literature indicating that strong conceptual preparation enhances practical performance (Kim et al., 2021; Perez & Martinez, 2024). The results empirically validate that theory and practice are not isolated constructs but function interdependently within nursing education.

Qualitative Findings

The qualitative analysis yielded deeper contextual understanding of how students experience the theory–practice interface. Three overarching themes emerged:

- (1) navigating theory under clinical pressure,
- (2) mentorship as a transformative bridge, and
- (3) adaptive professional identity formation.

1. Navigating Theory Under Clinical Pressure

Participants consistently described difficulty applying structured theoretical frameworks in fast-paced or resource-limited environments. While they understood procedural steps conceptually, emergency situations often required rapid prioritization rather than stepwise theoretical adherence. Students explained that real-world settings demanded flexibility beyond classroom algorithms. This echoes Salifu et al. (2018), who observed that theoretical ideals frequently clash with institutional constraints such as staffing shortages, patient overload, and time pressure.

Students also expressed emotional stress when theory did not align seamlessly with practice. Feelings of anxiety and self-doubt emerged particularly during high-acuity situations. These emotional transitions reflect the cognitive dissonance often experienced in early professional identity development (Lee & Samuel, 2022). Importantly, participants did not interpret these gaps as failure but as growth opportunities requiring guidance and reflection.

2. Mentorship as a Transformative Bridge

Clinical instructors played a critical role in facilitating integration. Participants emphasized that structured debriefing sessions and guided reflection strengthened their ability to connect theoretical principles with patient outcomes. Mentorship that encouraged questioning, reasoning, and self-analysis was described as essential in reinforcing confidence.

This finding aligns with Nguyen and Tran (2024), who reported that reflective supervision significantly enhances clinical reasoning and emotional resilience. Students who experienced active mentorship progressed more effectively through reflective observation toward abstract conceptualization and experimentation. This supports Kolb's framework, where reflection is the mechanism that transforms experience into learning.

3. Adaptive Professional Identity Formation

Students described developing a more pragmatic understanding of nursing theory over time. Rather than abandoning theory, they learned to adapt principles to contextual realities. Participants

reported growing empathy, leadership awareness, and accountability through repeated exposure to clinical challenges.

This adaptive transformation reflects professional socialization, wherein theoretical constructs evolve into lived practice (Ramirez et al., 2024). Rather than representing a breakdown of theory, these adjustments illustrate cognitive maturation and clinical judgment development.

Integration of Quantitative and Qualitative Findings

The integration of quantitative and qualitative data revealed meaningful patterns of convergence, divergence, and expansion.

Convergence

There was strong convergence between high quantitative ratings in ethical practice and qualitative narratives emphasizing professionalism and accountability. Students consistently described ethical awareness as deeply internalized, reinforcing the statistical strength observed in that domain. Similarly, the high quantitative score in reflective observation converged with qualitative accounts of regular self-assessment and debriefing.

This convergence strengthens the internal validity of the findings and confirms that reflective learning processes are effectively embedded in the curriculum.

Divergence

A notable divergence emerged in active experimentation. While quantitative results suggested relatively strong performance, qualitative narratives revealed lingering hesitation in emergency contexts. Students reported that although they understood what to do theoretically, confidence sometimes faltered during unpredictable events.

This divergence suggests that self-reported Likert-scale confidence may not fully capture situational anxiety. It highlights the importance of qualitative exploration in revealing nuanced experiential gaps. Such divergence underscores Fetters and Creswell's (2013) assertion that mixed methods allow for deeper insight when numerical and narrative findings partially contradict.

Expansion

Qualitative findings expanded quantitative data by explaining why certain domains scored differently. For example, lower quantitative ratings in pharmacologic responsiveness were contextualized by participants' descriptions of high cognitive load during medication administration in complex cases. Additionally, while technology use received high quantitative ratings, interviews clarified that digital

systems enhanced documentation accuracy but did not necessarily reduce emergency-related anxiety.

This expansion illustrates how narrative data deepen interpretation of statistical relationships, transforming correlation into contextual understanding.

Synthesis

Integration confirmed that theoretical strength enhances clinical performance, but complete experiential mastery requires structured reflective cycles and mentorship reinforcement. The findings collectively support Kolb's experiential model, demonstrating that learning progresses most effectively when experience, reflection, conceptualization, and experimentation function as a continuous loop.

The persistence of minor theory–practice gaps does not reflect curricular failure but rather highlights developmental transitions in professional competence. Structured simulation enhancement, emergency-based scenario immersion, and guided debriefing protocols may strengthen progression from abstraction to experimentation.

By combining statistical validation with lived experience, this study provides a comprehensive understanding of how nursing students negotiate the complex interplay between classroom knowledge and clinical realities. The evidence suggests that closing the theory–practice gap requires not only curricular alignment but also emotional, cognitive, and mentorship scaffolding within experiential learning environments.

This study confirms that theoretical knowledge significantly predicts clinical competence. Findings align with experiential learning theory, reinforcing that knowledge must cycle through experience and reflection to become operational skill.

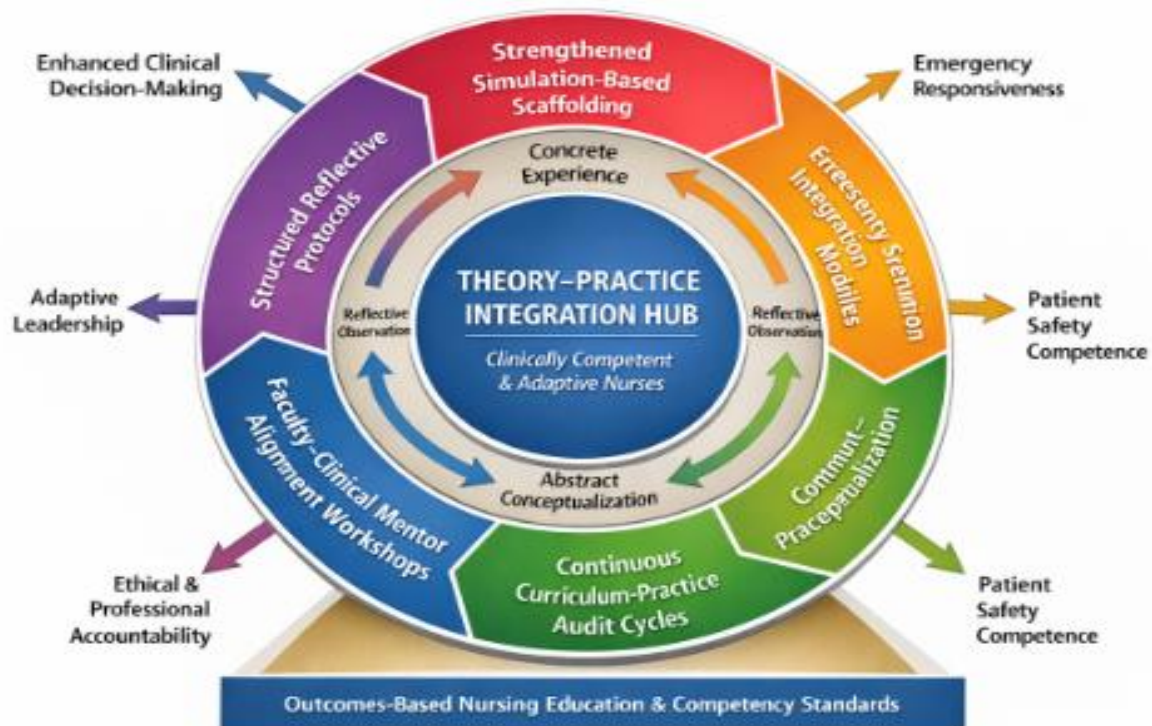
However, the persistence of emergency application gaps suggests incomplete progression through Kolb's cycle—particularly in the transition from abstraction to experimentation.

Simulation-based training, structured debriefing, and faculty-clinical alignment mechanisms are necessary to strengthen this progression.

The findings also reinforce OBE principles by demonstrating measurable alignment between learning outcomes and clinical performance when experiential reinforcement is strong.

Proposed Framework

Figure 1: Nursing Theory-Practice Integration Enhancement Framework (NTPIEF)



The Nursing Theory-Practice Integration Enhancement Framework (NTPIEF) presents a dynamic and cyclical model designed to bridge the gap between theoretical instruction and clinical practice in nursing education. At the center of the framework is the Theory-Practice Integration Hub, which represents the ultimate goal of producing clinically competent and adaptive nurses. This central core signifies that all structural components of the model converge toward strengthening the seamless application of classroom-based knowledge into real-world patient care. Surrounding the core is Kolb's Experiential Learning Cycle-composed of concrete experience, reflective observation, abstract conceptualization, and active experimentation-which serves as the theoretical foundation of the framework. The circular motion of this inner ring emphasizes that professional competence develops through continuous experiential learning rather than isolated instructional events.

Encircling the experiential cycle are five interrelated structural components: strengthened simulation-based scaffolding, structured reflective debriefing protocols, faculty-clinical mentor alignment workshops, continuous curriculum-practice audit cycles, and emergency scenario integration modules. These elements are arranged in a circular configuration to highlight their interdependence and iterative function. Simulation-based scaffolding enhances experiential exposure by progressively building clinical complexity, while structured

reflection deepens learning through guided cognitive processing. Faculty-clinical alignment workshops reduce inconsistencies between academic and hospital-based supervision, ensuring coherent expectations and evaluation standards. Curriculum-practice audit cycles provide systematic review mechanisms that maintain alignment between theoretical instruction and evolving healthcare realities. Emergency scenario integration modules specifically address high-pressure clinical competence, strengthening students' ability to make rapid, safe, and adaptive decisions.

Radiating outward from the cyclical structure are the intended graduate outcomes, including enhanced clinical decision-making, emergency responsiveness, patient safety competence, adaptive leadership, and ethical and professional accountability. These outward indicators illustrate that effective integration within the educational environment ultimately translates into improved healthcare delivery and workforce readiness. The entire model rests upon a foundational base of Outcomes-Based Nursing Education and competency standards, signifying that the framework operates within regulatory and accreditation mandates. Overall, the NTPIEF conceptualizes theory-practice integration as a continuous, feedback-driven ecosystem in which simulation, reflection, mentorship alignment, curricular responsiveness, and experiential learning

collectively produce resilient, reflective, and practice-ready nursing professionals.

Conclusion

This study examined the relationship between theoretical foundations and clinical practices among fourth-year nursing students in selected higher education institutions and provides empirical evidence supporting the interconnectedness of classroom instruction and clinical performance. The quantitative findings revealed that students demonstrated strong theoretical preparation across foundational knowledge, ethical practice, leadership, lifelong learning, and technology integration domains. These theoretical strengths were significantly and positively correlated with clinical practice dimensions, particularly reflective observation and active experimentation. The results confirm that well-established theoretical grounding enhances students' ability to engage meaningfully in experiential learning and clinical decision-making. However, while overall preparedness was high, subtle gaps emerged in high-pressure and emergency contexts. Although students reported confidence in theoretical knowledge, qualitative findings revealed situational hesitation and emotional stress when translating structured models into unpredictable clinical realities. These findings suggest that the theory–practice gap is not necessarily a deficiency in knowledge acquisition, but rather a developmental transition requiring structured reinforcement, mentorship alignment, and experiential scaffolding.

The qualitative analysis deepened understanding of this relationship by highlighting the importance of reflective mentorship, guided debriefing, and adaptive learning processes. Students described how structured reflection strengthened conceptual clarity, while supportive clinical instructors facilitated smoother integration between theoretical principles and patient care. The narratives also demonstrated that professional identity formation evolves as students learn to pragmatically adapt theoretical frameworks to contextual realities.

The integration of quantitative and qualitative findings underscores that effective nursing education must function as a continuous, cyclical system rather than a segmented academic-clinical structure. Strong theoretical preparation forms the foundation, but sustained experiential reinforcement, emergency preparedness exposure, and curriculum–practice alignment are essential to achieving full integration. In response to these findings, the Nursing Theory–Practice Integration Enhancement Framework (NTPIEF) was proposed as a structured, feedback-driven model to institutionalize simulation scaffolding, reflective

debriefing, faculty–clinical collaboration, curriculum audits, and emergency scenario modules. Ultimately, bridging the theory–practice gap requires intentional institutional strategies that support cognitive, emotional, and professional development. By strengthening alignment between academic instruction and clinical immersion, nursing programs can produce graduates who are not only knowledgeable, but also confident, adaptive, ethically grounded, and prepared to deliver safe, high-quality patient care in complex healthcare environments.

Conflicts of Interest

The author declares that there is no conflict of interest in this manuscript. Results have been deduced objectively; nothing influenced this result by any individual, monetary, or institutional interests. In effect, utmost endeavors were in order to conduct a bias-free operation of gathering and analyzing the data into interpretation and producing a study based on merit, away from research inconsistencies.

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