A Teaching, Learning and Profesionalism Model for Competency Practice among Nursing Students: A PLS-SEM Analysis

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Abstract

Professionalism is a fundamental component of nursing education, encompassing not only technical proficiency but also the development of values, ethics, and professional attitudes. Nevertheless, previous studies have reported inconsistencies in students' understanding and application of professionalism within nursing curricula. This raises concerns regarding the adequacy of current teaching and learning approaches in fostering strong professional competencies. This study seeks to examine the relationships between teaching, learning, and professionalism in predicting competency practice among nursing students, and to develop an integrated model that reflects these relationships. A quantitative survey design was employed, involving 277 third-year, second-semester students from the Ministry of Health Training Institute (ILKKM). Data validity and reliability were established through a pilot test and Cronbach's Alpha. Descriptive statistics, Structural Equation Modelling (SEM), and Confirmatory Factor Analysis (CFA) were conducted to assess the measurement and structural models. Teaching and learning demonstrated a significant positive effect on competency practice ($\beta = 0.565$, t = 14.378, p < 0.001), while professionalism also contributed positively ($\beta = 0.394$, t = 9.259, p < 0.001). Together, these predictors accounted for 63.2% of the variance in competency practice. The study confirms teaching and learning as dominant predictors, with professionalism functioning as a complementary factor. It contributes to the literature by presenting an integrated model and offers practical implications for educators and curriculum developers to strengthen professionalism and competency in nursing education.
Keywords: Teaching, Learning, Professionalism, Competency Practice, PLS-SEM, Nursing Education

Introduction

Professionalism is a core element in education and training as it not only ensures students' mastery of technical skills but also cultivates values, ethics, and attitudes aligned with professional demands. In fields such as nursing, teaching, and healthcare, professionalism

must be instilled from the outset through systematic and effective teaching and learning processes (Atwa et al., 2016). Although current curricula incorporate these elements, the level of appreciation and implementation among students remains highly varied (Habeeb, 2022). This suggests that existing teaching approaches may not fully address the need to develop a deeper understanding of professionalism.

In the nursing context, professionalism is a crucial concept encompassing values, attitudes, and behaviours that reflect integrity, commitment to quality care, effective communication, responsibility, and respect for patients and colleagues. Clark (2017) emphasized that nursing professionalism is anchored in adherence to ethical codes, prioritization of patient safety, and evidence-based practice. Therefore, a strong understanding of professionalism must be embedded in students from the early stages of training to ensure their readiness to face real clinical challenges with high levels of competence (Ahmed et al., 2019).

Today, the healthcare sector faces multiple global challenges, including the rise of chronic diseases, the advancement of digital technologies in healthcare, and the shift toward patient-centred care models (WHO, 2025). These challenges demand that nurses be more flexible, knowledgeable, and able to apply professionalism in all aspects of clinical practice. Consequently, teaching and learning play a critical role in producing nurses who are not only technically competent but also professionally competitive at the global level. In line with this, the development of a teaching and learning model of professionalism is essential to provide a framework grounded in theory, empirical evidence, and practical needs. Such a model can serve as a guide for educators to ensure holistic, consistent, and effective knowledge delivery, while also functioning as a reference in assessing students' understanding and internalization of professional values throughout their training. The implementation of this model is expected to not only strengthen professionalism among trainees but also enhance the quality of healthcare services and the reputation of the nursing profession in the future (Noviani et al., 2024).

Aligned with these objectives, this study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to evaluate the relationships between teaching, learning, and professionalism in relation to nursing students' competency practice. This approach enables a more comprehensive assessment of the constructs involved while facilitating the development of a teaching and learning model of professionalism suited to current needs. The findings are anticipated to make a significant contribution to efforts aimed at improving the quality of nursing training and reinforcing professionalism as a central pillar of the profession. The originality of this study lies in the development of an integrated model linking teaching, learning, and professionalism to competency practice among nursing students using the PLS-SEM approach. The study not only highlights teaching and learning as dominant factors but also demonstrates the role of professionalism as a significant complementary element. This contribution enriches the existing literature and provides practical implications for educators and curriculum developers in designing more holistic and effective nursing training strategies.

Literature Review

Professionalism is a vital dimension in shaping the identity and quality of a profession. It extends beyond technical skills to include values, ethics, attitudes, responsibility, and

accountability in fulfilling professional duties (Cruess & Cruess, 2008; Oliveira et al., 2018). In professional education such as nursing, teaching, and health sciences, professionalism must be systematically nurtured through structured teaching and learning, as it has direct implications for service quality, the image of the profession, and public trust in institutions and graduates.

Despite its inclusion in curricula, studies reveal inconsistencies in students' appreciation and practice of professionalism. Research shows a gap between classroom knowledge and real-world application, particularly in communication, empathy, advocacy, and accountability (Noviani et al., 2024). This raises questions about whether current teaching and learning strategies are sufficient to foster a holistic internalization of professionalism. Various pedagogical approaches, such as experiential learning, reflective practice, case-based learning, and simulations, have been implemented, yet their effectiveness differs depending on context and discipline (Smith et al., 2020).

Existing models of professionalism instruction are often too general, lacking consideration of cultural, institutional, and contextual factors, which limits their applicability in actual practice (Suteja et al., 2022). Therefore, there is a need for a systematic, empirical, and contextual model of teaching and learning professionalism. Such a model could guide educators in designing more effective pedagogical strategies while serving as a framework for assessing students' professional competencies (Cham et al., 2024). This effort not only contributes to the theoretical enrichment of professional education but also strengthens the development of ethical, competitive, and resilient human capital in healthcare.

Methodology
This study employed a quantitative survey approach with PLS-SEM analysis using Smart PLS software. This method was deemed appropriate as it enables the development and validation of a theoretical model based on the constructs under investigation. A total of 277 third-year, second-semester trainees were selected through stratified random sampling to represent students from several Ministry of Health Training Institutes in Malaysia. The survey instrument was developed based on four constructs: teaching, learning, professionalism, and competency practice. Each construct was measured through items derived from previous literature and adapted to the local context. The analysis focused on the coefficient of determination (R^2) to assess the predictive accuracy of the model, the effect size (f^2) to determine the contribution of predictor constructs to the dependent construct, and bootstrapping with 5,000 subsamples to test the significance of relationships among constructs using path coefficients (β), t-values, and p-values.

This approach allowed for a comprehensive evaluation of the strength of relationships between constructs, the predictive accuracy of the model, and the relative contribution of each factor in shaping nursing students' competency practice.

Validity and Reliability
To ensure that the research instrument was valid and reliable, several procedures were undertaken. For content validity, the survey was reviewed and validated by experts comprising academics in the fields of education, medicine, and nursing. This review process aimed to ensure that the items developed accurately represented the constructs under

investigation and were appropriate for the nursing training context. Subsequently, the internal reliability of the instrument was assessed using Cronbach's Alpha. The results showed that the Cronbach's Alpha coefficients for all constructs exceeded 0.70, indicating a good and acceptable level of internal consistency for research purposes. This demonstrates that the items within each construct were consistent in measuring the same underlying concept.

CFA: professionalism Practice Model
The measurement model for professionalism practice reinforcement consisted of four constructs: professionalism, competency practice, teaching, and learning. Each construct comprised several items. Items were removed sequentially, namely BC11, BC19, BE11, BE3, and BE4. Table 1 presents the fit indices for both the initial measurement model and the modified model of professionalism practice reinforcement.

Table1
CFA result for the Measurement Model of Professionalism Practice

Construct	Sub construct	Item	Loading	CR	AVE
Professionalism	Respecting Patients	A1	0.776	0.928	0.624
		A2	0.841		
		A3	0.880		
		A4	0.892		
		A5	0.920		
		A6	0.837		
		A7	0.504		
		A8	0.558		
	Standard of care	B1	0.758	0.902	0.508
		B10	0.725		
		B11	0.693		
		B2	0.827		
		B3	0.627		
		B4	0.702		
		B7	0.689		
		B8	0.668		
		B9	0.705		
	Acauntability	C1	0.660	0.889	0.537
		C2	0.810		
		C3	0.780		
		C4	0.790		
		C5	0.703		
		C6	0.759		
		C7	0.604		
	Advocacy	D1	0.733	0.887	0.725
		D2	0.911		
		D3	0.898		
	Team Work	E1	0.893	0.925	0.803
		E2	0.890		
		E3	0.905		
		BC1	0.612	0.949	0.526
		BC10	0.756		

Competency Practice		BC12	0.755		
		BC13	0.726		
		BC14	0.766		
		BC15	0.546		
		BC16	0.771		
		BC17	0.737		
		BC18	0.762		
		BC2	0.544		
		BC3	0.735		
		BC4	0.802		
		BC5	0.693		
		BC6	0.804		
		BC7	0.761		
		BC8	0.707		
		BC9	0.783		
Teaching & Learning	Learning	BD2	0.745		
		BD3	0.750		
		BD4	0.805		
		BD5	0.561	0.894	0.549
		BD6	0.810		
		BD7	0.806		
		BD8	0.677		
	Teaching	BE1	0.759		
		BE10	0.798		
		BE2	0.754		
		BE5	0.659	0.925	0.609
		BE6	0.805		
		BE7	0.806		
		BE8	0.792		
		BE9	0.854		

Results and Discussion

The analysis of the coefficient of determination (R^2) showed that the construct of practice competency recorded an R^2 value of 0.632, indicating that 63.2% of the variance in practice competency can be explained by teaching, learning, and professionalism. Furthermore, the construct of teaching obtained a high R^2 value of 0.847, suggesting that 84.7% of the variance in teaching is explained by the variables included in the model. For the construct of learning, the R^2 value was 0.784, demonstrating that 78.4% of the variance in learning can be accounted for by the tested factors. In contrast, the construct of professionalism recorded a relatively low R^2 value of 0.122, indicating that only 12.2% of the variance in professionalism is explained by teaching, learning, and practice competency. The remaining variance is likely influenced by other factors not measured in this study, such as institutional environment, peer support, or student motivation (see Figure 1).
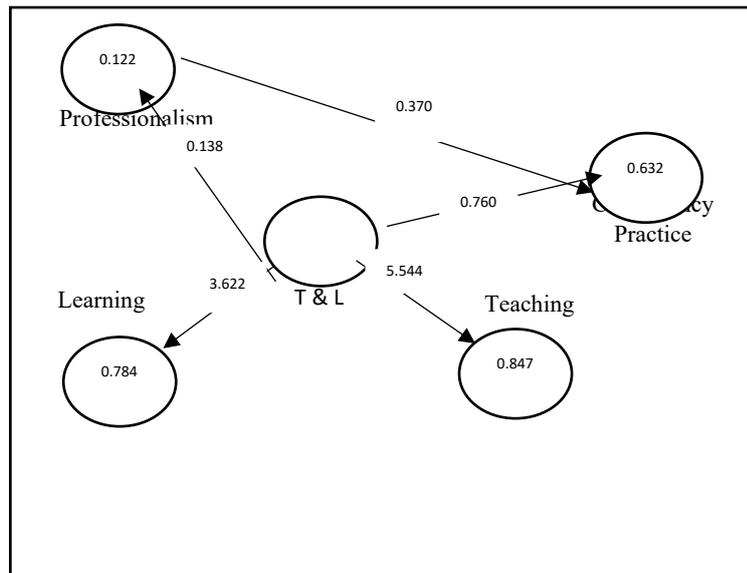
Table 2 presents the analysis of effect size (f²), indicating that the construct of teaching and learning on practice competency recorded an f² value of 0.760. This value is considered high, demonstrating that teaching and learning have a substantial substantive effect on the development of nursing students' practice competency. In contrast, the construct of professionalism on practice competency obtained an f² value of 0.370, which reflects a moderate effect compared to teaching and learning. These findings suggest that although professionalism contributes to practice competency, the dominant impact is derived primarily from teaching and learning. Therefore, nursing training programs should prioritize enhancing the quality of teaching and implementing effective learning approaches, as these factors are proven to be the strongest drivers in strengthening students' practice competency

Table 2
Competency Practice Construct

	Competency Practice	Teaching	Learning	Professinalism
T&L	0.760	5.544	3.622	0.138
Professionalism	0.370			

Table 3 presents the conceptual model illustrating the relationships among teaching and learning, professionalism, and competency practice among nursing students. The PLS-SEM analysis indicates that teaching and learning exert a dominant positive effect on practice competency (β = 0.565, t =14.378, p = 0.000, p < 0.001. This finding suggests that higher quality teaching and learning is associated with higher levels of practice competency among nursing students. Furthermore, the relationship between professionalism and practice competency was also significant (β = 0.394, t = 9.259, p = 0.000, p < 0.001). This implies that students' professionalism contributes meaningfully to enhancing practice competency, although its effect is slightly weaker than that of teaching and learning. Finally, the analysis revealed a positive and significant relationship between teaching and learning and professionalism (β = 0.349, t = 5.728, p = 0.000, p < 0.001). This indicates that high-quality teaching and learning not only improve practice competency but also strengthen professionalism among nursing students.

Table 3

Results of structural model assessment for the relationship between teaching, learning, professionalism and practice competency

Relationship	β	t-value	p-value	Significance decision
Teaching & Learning – Practice Competency	0.565	14.378	0.000	Significant
Professionalism – Practice Competency	0.394	9.259	0.000	Significant
Teaching & Learning - Professionalism	0.349	5.728	0.000	Significant

The findings of this study indicate that teaching and learning are the most dominant factors in shaping the practice competencies of nursing trainees. This highlights that the effectiveness of the educational process, whether through the delivery of theory or practical training, plays a crucial role in determining the competency level of a trainee. This result aligns with previous studies which emphasized that quality education is a vital foundation in the development of nursing professionalism (Abdul Rahman et al., 2021; Mohamed et al., 2020). It also reinforces the view of Rudberg et al. (2022) that teaching and learning not only serve to deliver knowledge but also help shape the values, attitudes, and professional ethics that form the core of the nursing profession.

Although professionalism also makes a significant contribution to practice competency, the primary strength still lies in the pedagogical foundation and learning strategies applied throughout the training process. This means that professionalism cannot be effectively developed without a strong educational foundation (Rhodes et al., 2012). In other words, the development of professionalism results from structured and systematic learning experiences, delivered through teaching approaches that are relevant to the nursing training context (Rudberg et al., 2022). Accordingly, the Ministry of Health Training Institute of Malaysia (ILKKM) needs to place particular emphasis on effective pedagogical aspects, including reflective learning approaches that allow trainees to reassess their clinical experiences, as well as comprehensive clinical training to strengthen practical skills. Emphasizing the integration of theory, clinical practice, and self-reflection is believed to enhance the level of professionalism among trainees, thereby producing competent, ethical nurses who are capable of providing quality healthcare.

Implications

This study yields several key implications for nursing education, professionalism development, and training policy in Malaysia. Educationally, the findings confirm that teaching and learning are the most dominant factors shaping trainees' practice competencies. This highlights the need for continuous curriculum and pedagogical enhancement through innovative strategies such as clinical simulation, problem-based learning, reflective practice, and collaborative methods. Such approaches not only strengthen knowledge and technical skills but also foster critical thinking and professional attitudes.

With regard to professionalism, the positive association between teaching, learning, and professionalism suggests that professionalism is cultivated through structured learning experiences rather than occurring naturally. Nursing educators must therefore address

cognitive, psychomotor, and affective domains, particularly ethics, empathy, responsibility, and accountability, to reinforce professional values alongside theoretical and practical training.

At the policy level, the structural equation model developed in this study offers empirical guidance for the Ministry of Health Training Institute of Malaysia (ILKKM) and the Ministry of Health Malaysia (MOH) in strengthening training quality. Emphasis should be placed on developing competent educators, supporting pedagogical innovation, and formulating policies that enhance learning effectiveness.

In sum, the findings underscore that improving the quality of teaching and learning not only directly enhances practice competencies but also fosters professionalism, ultimately contributing to the development of competent, ethical, and professional nurses capable of delivering high-quality healthcare.

Recommendation for Future Research
Based on the findings of this study, several recommendations for future research can be considered to strengthen the understanding of the relationship between teaching, learning, professionalism, and practice competencies among nursing trainees. First, this study only involved trainees from the Ministry of Health Training Institutes (ILKKM). Future studies are recommended to expand the scope to other higher education institutions offering nursing programs, including public and private universities. Such expansion would provide a more comprehensive overview and allow comparisons across various nursing training institutions in Malaysia.

Second, this study employed a quantitative approach using structural equation modeling (SEM). While this method effectively explains statistical relationships between constructs, it offers limited insights into trainees' lived experiences within teaching, learning, and professionalism. Hence, future research should integrate qualitative approaches such as in-depth interviews or focus group discussions to provide more holistic perspectives and enrich the understanding of factors shaping professionalism and practice competencies.

Third, as this study adopted a cross-sectional design, future research should employ a longitudinal approach to examine the development of professionalism and practice competencies from the beginning of the training program through to its completion. A longitudinal design would capture changes, growth, and persistent influences throughout the learning process.

Lastly, this study focused on the constructs of teaching, learning, professionalism, and practice competencies. Future studies could incorporate additional constructs such as peer support, clinical environment influences, educators' leadership styles, and student motivation. Including these elements may yield a more comprehensive model of competency development among nursing trainees.

In conclusion, these recommendations for future research are expected to broaden the scope of inquiry, deepen understanding, and contribute to the advancement of more effective nursing education and training models in Malaysia.

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