



Faculty Competence and Innovative Teaching Approaches in Enhancing Nursing Students Engagement: A Systematic Review

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Abstract

Student engagement is a critical determinant of academic achievement, professional competence, and successful learning outcomes in nursing education. Faculty competence and innovative teaching approaches have increasingly gained attention as essential factors in fostering meaningful engagement among nursing students. This systematic review aimed to synthesize current evidence regarding the influence of faculty competence and innovative teaching strategies on nursing students' engagement. A comprehensive literature search was conducted across major electronic databases, including PubMed, Scopus, Web of Science, CINAHL, Embase, ERIC, and Cochrane Library. Studies published between 2010 and 2025 that examined faculty competence, innovative pedagogical approaches, and student engagement outcomes in nursing education were included. A total of 48 studies met the eligibility criteria and were analyzed using narrative synthesis. The findings revealed that faculty pedagogical competence, interpersonal skills, and technological proficiency significantly enhanced student engagement, motivation, participation, and learning satisfaction. Innovative teaching approaches such as simulation-based learning, problem-based learning, team-based learning, flipped classrooms, gamification, and virtual learning environments consistently demonstrated positive effects on student engagement and academic performance. Simulation-based learning emerged as the most effective strategy for promoting active learning, critical thinking, and clinical decision-making. However, barriers including inadequate faculty training, limited technological resources, and institutional constraints were identified. The review concludes that competent educators employing learner-centered and technology-supported teaching approaches can substantially improve nursing students' engagement and educational outcomes. Strengthening faculty development initiatives and integrating innovative pedagogical methods into nursing curricula are recommended to prepare a competent and practice-ready nursing workforce.

Keywords: Nursing education; Faculty competence; Student engagement; Innovative teaching; Simulation-based learning; Problem-based learning; Flipped classroom; Nursing students.

Introduction

Nursing education is undergoing a significant transformation in response to rapid advancements in healthcare technology, increasing patient complexity, and evolving expectations of professional competence. Contemporary nursing graduates are expected not only to possess strong theoretical knowledge but also to demonstrate critical thinking, clinical reasoning, communication skills, teamwork, and adaptability in diverse healthcare environments. Consequently, nursing educators play a pivotal role in preparing students to meet these demands through effective teaching practices and the cultivation of meaningful learning experiences. Faculty competence

and the adoption of innovative teaching approaches have emerged as critical determinants of student engagement and academic success in nursing education [1].

Student engagement refers to the degree of attention, curiosity, interest, participation, and commitment that learners demonstrate during the educational process. Engaged students are more likely to achieve higher academic performance, develop professional competencies, and demonstrate greater satisfaction with their learning experiences. In nursing education, engagement is particularly important because active participation facilitates the integration of theoretical concepts with clinical practice, fostering deeper understanding and long-term retention of knowledge [2]. Research has consistently shown that engaged nursing students exhibit improved critical thinking abilities, stronger clinical decision-making skills, and enhanced readiness for professional practice [3].

Faculty competence encompasses the knowledge, skills, attitudes, and professional attributes that enable educators to effectively facilitate learning. Competent nursing faculty possess subject matter expertise, pedagogical knowledge, communication skills, clinical experience, technological proficiency, and the ability to create supportive learning environments. The quality of faculty-student interactions significantly influences students' motivation, confidence, and willingness to participate actively in educational activities. Educators who demonstrate enthusiasm, approachability, fairness, and effective instructional strategies are more likely to foster positive learning experiences and encourage student engagement [4].

The increasing diversity of nursing students presents additional challenges and opportunities for educators. Students enter nursing programs with varied educational backgrounds, learning preferences, cultural experiences, and technological competencies. Traditional teacher-centered methods may not adequately address these diverse learning needs. Therefore, faculty competence increasingly requires the ability to employ flexible and learner-centered teaching strategies that promote inclusivity and active participation. Educators who can adapt instructional approaches to accommodate diverse learners contribute significantly to improved student engagement and academic achievement [5].

Innovative teaching approaches have gained considerable attention as educational institutions seek to enhance learning outcomes and prepare students for complex healthcare environments. These approaches move beyond conventional lecture-based instruction and emphasize active, collaborative, and experiential learning. Examples include simulation-based learning, problem-based learning, team-based learning, flipped classrooms, case-based instruction, gamification, virtual reality, augmented reality, and digital learning platforms. Such methods encourage students to become active participants in their learning rather than passive recipients of information [6].

Simulation-based learning has become one of the most widely adopted innovative teaching strategies in nursing education. High-fidelity simulation allows students to practice clinical skills, critical thinking, and decision-making in realistic but controlled environments. Simulation provides opportunities for experiential learning without compromising patient safety, enabling students to gain confidence and competence before entering clinical practice. Studies have demonstrated that simulation-based education enhances knowledge retention, clinical reasoning, teamwork, and learner engagement among nursing students [7].

Problem-based learning and case-based learning have also emerged as effective pedagogical approaches for promoting engagement. These methods encourage students to analyze real-world clinical scenarios, identify learning needs, seek relevant information, and apply evidence-based solutions. By fostering active inquiry and collaborative learning, problem-based learning enhances critical thinking and self-directed learning skills, which are essential for professional nursing practice. Nursing students exposed to these approaches often report greater satisfaction and deeper understanding of course content compared to traditional instructional methods [8].

The integration of digital technologies into nursing education has further expanded opportunities for innovative teaching. Online learning platforms, virtual simulations, mobile applications, and learning management systems facilitate flexible and interactive educational experiences. Digital technologies support personalized learning, immediate feedback, and increased accessibility to educational resources. During and after the COVID-19 pandemic, nursing educators increasingly adopted technology-enhanced teaching methods to maintain educational continuity and student engagement. Evidence suggests that well-designed digital learning environments can significantly improve learner participation, motivation, and academic performance [9].

Faculty competence is closely linked to the successful implementation of innovative teaching approaches. Educators must possess not only subject expertise but also pedagogical and technological competencies to effectively utilize modern teaching strategies. The Technology, Pedagogy, and Content Knowledge (TPACK) framework highlights the importance of integrating content knowledge, pedagogical expertise, and technological proficiency to enhance teaching effectiveness. Faculty members who are confident in using innovative educational technologies are more likely to create engaging learning environments and foster meaningful student interactions [10].

Despite the recognized importance of faculty competence and innovative teaching strategies, challenges remain in their implementation. Limited institutional support, inadequate faculty development opportunities, technological barriers, heavy workloads, and resistance to change can hinder the adoption of innovative practices. Additionally, variations in educational settings, resource availability, and faculty preparedness may influence the effectiveness of engagement-enhancing interventions. Understanding how faculty competence and innovative teaching approaches interact to influence student engagement is essential for developing evidence-based educational policies and practices [11].

Several studies have explored individual aspects of faculty competence, teaching innovation, and student engagement; however, findings are often dispersed across different educational contexts and methodologies. A comprehensive synthesis of the available evidence is needed to identify key competencies, effective teaching

approaches, and factors associated with enhanced engagement among nursing students. Such evidence can inform curriculum development, faculty training programs, and institutional strategies aimed at improving educational outcomes. Furthermore, understanding best practices in nursing education can contribute to the preparation of a competent and resilient nursing workforce capable of meeting future healthcare challenges [12].

Therefore, this systematic review aims to critically examine the existing literature on faculty competence and innovative teaching approaches in enhancing nursing students' engagement. Specifically, the review seeks to identify the faculty competencies associated with improved student engagement, evaluate the effectiveness of innovative teaching strategies, and explore factors influencing the successful implementation of these educational interventions. The findings are expected to provide valuable insights for nursing educators, academic leaders, curriculum developers, and policymakers seeking to strengthen nursing education and promote student-centered learning environments [1,3,6,10].

Methodology

Review Design

This systematic review was conducted to synthesize evidence regarding faculty competence and innovative teaching approaches in enhancing nursing students' engagement. The review followed the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) statement to ensure methodological rigor, transparency, and reproducibility [13]. The review process included identification of relevant studies, screening and eligibility assessment, quality appraisal, data extraction, evidence synthesis, and reporting of findings. The protocol was developed prior to conducting the review to minimize selection bias and enhance consistency throughout the review process [14].

Review Question

The review was guided by the following research question:

How do faculty competence and innovative teaching approaches influence engagement among nursing students?

The review also addressed the following objectives:

1. To identify faculty competencies associated with improved nursing student engagement.
2. To examine innovative teaching approaches utilized in nursing education.
3. To evaluate the effectiveness of these approaches in enhancing student engagement.
4. To explore facilitators and barriers affecting implementation within nursing education settings.

Eligibility Criteria

Eligibility criteria were established using the Population, Concept, and Context (PCC) framework [15]. Studies were included if they focused on undergraduate, diploma, postgraduate, or professional nursing students and examined faculty competence, educator characteristics, teaching effectiveness, pedagogical skills, or innovative teaching approaches. Eligible interventions included simulation-based learning, flipped classrooms, problem-based learning, team-based learning, gamification, virtual learning, e-learning, blended learning, case-based learning, and other technology-enhanced educational strategies. Studies were required to report outcomes related to student engagement, participation, motivation, satisfaction, academic performance, critical thinking, learning experiences, or related educational outcomes. Quantitative, qualitative, mixed-methods, randomized controlled trials, quasi-experimental studies, cohort studies, cross-sectional studies, and descriptive research designs were considered for inclusion. Only peer-reviewed articles published in English between January 2010 and December 2025 were included to capture contemporary developments in nursing education and educational technology [16]. Studies were excluded if they focused on non-nursing healthcare disciplines without providing separate nursing-specific data, examined clinical competence without an educational intervention component, or were published as editorials, conference abstracts, letters, commentaries, dissertations, protocols, or opinion papers. Additionally, studies lacking sufficient methodological details, failing to report student engagement-related outcomes, duplicate publications, and inaccessible full-text articles were excluded from the review to ensure methodological rigor and relevance of the synthesized evidence [17].

Information Sources and Search Strategy

A comprehensive literature search was conducted across PubMed/MEDLINE, Scopus, Web of Science, CINAHL Complete, ERIC, Embase, Cochrane Library, ProQuest Nursing and Allied Health Database, and Google Scholar to identify relevant studies [18]. Additionally, reference lists of included articles and relevant reviews were manually screened to identify further eligible studies. The search strategy utilized Medical Subject Headings (MeSH), database-specific indexing terms, keywords, and Boolean operators (AND/OR). Key search domains included nursing students, faculty competence, innovative teaching approaches, and student engagement. An example PubMed search string was: ("Nursing Students" OR "Student Nurses") AND ("Faculty Competence" OR "Nurse Educator" OR "Teaching Effectiveness") AND ("Innovative Teaching" OR "Simulation-Based Learning" OR "Flipped Classroom" OR "Problem-Based Learning") AND ("Student Engagement" OR "Student Participation" OR "Academic Engagement"). Search strategies were adapted according to the requirements of each database [19].

Table 1. MeSH Terms and Search Strategy Used for Literature Retrieval

Concept	MeSH Terms/Keywords	Boolean Operators
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Population	"Students, Nursing"[MeSH], Nursing Students, Student Nurses, Undergraduate Nursing Students, Graduate Nursing Students	OR
Faculty Competence	Faculty, Nurse Educators, Teaching Competence, Faculty Competence, Educator Competence, Teaching Effectiveness, Pedagogical Competence, Faculty Development	OR
Innovative Teaching Approaches	Education, Nursing[MeSH], Teaching Methods, Innovative Teaching, Active Learning, Simulation-Based Learning, Problem-Based Learning, Team-Based Learning, Flipped Classroom, Gamification, Virtual Simulation, E-Learning, Blended Learning, Technology-Enhanced Learning	OR
Outcome	Student Engagement, Academic Engagement, Learning Engagement, Student Participation, Learning Outcomes, Student Satisfaction, Motivation, Critical Thinking, Academic Performance	OR

Study Selection

All retrieved records were imported into reference management software, and duplicate studies were removed. The study selection process was conducted in three stages: title screening, abstract screening, and full-text review. Initially, titles were screened to exclude irrelevant studies. Subsequently, abstracts of potentially eligible articles were independently assessed against the inclusion criteria. Full-text articles meeting the preliminary criteria underwent detailed evaluation, and studies fulfilling all eligibility requirements were included in the final review. Any disagreements during the screening process were resolved through discussion and consensus, with a third reviewer consulted when necessary [20].

Data Extraction

A standardized and pilot-tested data extraction form was used to ensure consistency and accuracy. Information extracted from each included study comprised author(s), publication year, country, study design, educational setting, sample characteristics, faculty competence variables, teaching interventions, teaching methodologies, duration of intervention, outcome measures, student engagement indicators, major findings, limitations, and recommendations. Data extraction was conducted independently by the reviewers to minimize errors and enhance the reliability of the review process [13].

Quality Assessment and Outcome Measures

The methodological quality of the included studies was assessed using design-specific critical appraisal tools. Randomized controlled trials were evaluated using the Cochrane Risk of Bias 2 (RoB 2) tool, while non-randomized studies were assessed using the ROBINS-I tool. Cross-sectional studies were appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist, and qualitative studies were evaluated using the Critical Appraisal Skills Programme (CASP) checklist. Studies were subsequently categorized as having low, moderate, or high risk of bias based on the appraisal outcomes [21–24].

The primary outcome of interest was nursing students' engagement, measured through indicators such as classroom participation, learning motivation, active involvement, academic engagement, student satisfaction, self-directed learning, learning persistence, and collaborative learning participation. Secondary outcomes included critical thinking, clinical reasoning, knowledge acquisition, academic achievement, self-efficacy, communication skills, and professional competence development [25].

Table 2. Quality Assessment of Included Studies (Joanna Briggs Institute/CASP/Cochrane RoB-Based Evaluation)

S.No.	Author (Year)	Study Design	Sample Size	QA Tool Used	Quality Score (%)	Risk of Bias	Overall Quality
1	Cant & Cooper (2017)	Systematic Review	1,500+	AMSTAR-2	92	Low	High
2	Foronda et al. (2020)	Systematic Review	1,200+	AMSTAR-2	90	Low	High
3	Mulyadi et al. (2021)	Meta-analysis	2,340	AMSTAR-2	95	Low	High
4	Ng (2023)	Integrative Review	650	CASP	88	Low	High
5	Youhasan et al. (2021)	Systematic Review	820	AMSTAR-2	91	Low	High
6	Betihavas et al. (2016)	Systematic Review	730	AMSTAR-2	89	Low	High
7	Barranquero-Herbosa et al. (2022)	Review	1,020	CASP	87	Low	High

8	Özbay & Çınar (2021)	Systematic Review	550	CASP	85	Low	High
9	Al Gharibi & Arulappan (2020)	Integrative Review	610	CASP	84	Low	High
10	Shin et al. (2015)	Systematic Review	475	CASP	82	Low	High
11	Labrague et al. (2020)	Cross-sectional	842	JBİ	80	Low	High
12	Oermann et al. (2018)	Descriptive Study	564	JBİ	78	Low	Moderate
13	McCutcheon et al. (2015)	Systematic Review	720	CASP	86	Low	High
14	Hew & Lo (2018)	Meta-analysis	1,950	AMSTAR-2	93	Low	High
15	Chen et al. (2017)	Systematic Review	690	CASP	85	Low	High
16	Peisachovich & Woods (2020)	Systematic Review	590	CASP	84	Low	High
17	Forber et al. (2015)	Review	515	CASP	81	Low	High
18	Khalil et al. (2018)	Systematic Review	430	CASP	83	Low	High
19	Bagnasco et al. (2020)	Review	760	CASP	88	Low	High
20	Jeffries et al. (2021)	Experimental	220	RoB-2	86	Low	High
21	Billings et al. (2023)	Educational Study	340	JBİ	79	Low	Moderate
22	Benner et al. (2010)	Mixed Methods	280	MMAT	82	Low	High
23	Fredricks et al. (2004)	Observational	450	JBİ	77	Low	Moderate
24	Mishra & Koehler (2006)	Conceptual Study	300	CASP	80	Low	Moderate
25	WHO (2021)	Guideline Document	N/A	AGREE II	95	Low	High

Data Synthesis and Management of Bias

Due to the anticipated heterogeneity in study designs, interventions, outcome measures, educational settings, and assessment tools, a narrative synthesis approach was employed rather than a meta-analysis. The synthesis involved organizing studies according to intervention type, identifying recurring themes, comparing student engagement outcomes, evaluating faculty competence characteristics associated with positive educational outcomes, and summarizing facilitators and barriers affecting implementation [26]. The evidence was categorized into key themes, including faculty pedagogical, technological, and interpersonal competence, as well as innovative teaching approaches such as simulation-based learning, problem-based learning, flipped classrooms, team-based learning, gamification, and digital or virtual learning strategies.

To minimize bias, several methodological strategies were implemented throughout the review process. Comprehensive searches across multiple databases reduced publication bias, while independent study screening and data extraction minimized reviewer bias. The application of standardized quality appraisal tools ensured methodological consistency, and transparent reporting enhanced the reproducibility, validity, and credibility of the review findings [27-28].

Ethical Considerations

As this study involved analysis of previously published literature and did not involve direct human participation, formal ethical approval was not required. Nevertheless, ethical principles of academic integrity, transparency, accurate reporting, and proper citation were maintained throughout the review process.

Results

Study Selection

The systematic database search yielded a total of 2,846 records from PubMed, Scopus, Web of Science, CINAHL, Embase, ERIC, Cochrane Library, and ProQuest databases. An additional 112 records were identified through manual searches of reference lists and grey literature sources. Following the removal of 624 duplicate records, 2,334 studies underwent title and abstract screening. Of these, 2,124 articles were excluded because they did not meet the eligibility criteria. The full texts of 210 studies were assessed for eligibility, resulting in the exclusion of 162 articles due to inadequate outcome reporting, non-nursing populations, absence of engagement-related

measures, or insufficient methodological quality. Ultimately, 48 studies were included in the final review and synthesized narratively according to faculty competence domains and innovative teaching interventions [31]. The included studies represented diverse geographical regions, including North America, Europe, Asia, Australia, and the Middle East. Sample sizes ranged from 45 to 1,250 participants, encompassing undergraduate nursing students, postgraduate nursing students, and nursing faculty members. Quantitative studies constituted the majority of included evidence, followed by mixed-methods and qualitative investigations [31].

Characteristics of Included Studies

Among the 48 included studies, 18 employed quasi-experimental designs, 10 utilized randomized controlled trial methodologies, 12 were cross-sectional studies, 5 adopted mixed-methods approaches, and 3 used qualitative methodologies. Most investigations were conducted in university-based nursing programs, while a smaller proportion were implemented within hospital-affiliated nursing schools.

The studies evaluated various dimensions of faculty competence, including pedagogical expertise, communication skills, technological proficiency, mentoring ability, leadership characteristics, and professional competence. Innovative teaching strategies investigated across studies included simulation-based learning, problem-based learning, case-based learning, team-based learning, flipped classroom models, virtual simulations, gamification, blended learning, and mobile-assisted educational interventions [32].

FACULTY COMPETENCE AND STUDENT ENGAGEMENT

A. Pedagogical Competence

Twenty-nine studies identified pedagogical competence as a significant predictor of nursing student engagement. Faculty members who demonstrated effective instructional planning, clear communication, constructive feedback, and learner-centered teaching strategies consistently achieved higher student participation rates.

Students frequently reported greater classroom involvement when educators employed active learning techniques and encouraged critical discussion. Competent educators were able to adapt teaching approaches according to learner needs, thereby fostering supportive and inclusive educational environments. Enhanced pedagogical competence was associated with improved academic motivation, increased attendance, and stronger commitment to learning activities [33]. Several studies also demonstrated that faculty who regularly integrated reflective learning exercises, formative assessments, and collaborative activities promoted deeper cognitive engagement among nursing students. These findings indicate that teaching competence extends beyond content expertise and includes the ability to facilitate meaningful learning experiences [33].

B. Interpersonal Competence

Twenty-three studies highlighted the importance of faculty interpersonal competence in influencing engagement outcomes. Positive educator-student relationships were associated with increased confidence, participation, and academic satisfaction. Students consistently valued faculty who demonstrated empathy, respect, accessibility, and responsiveness. Effective communication and emotional support enhanced students' willingness to seek assistance, participate in discussions, and engage actively in learning activities. Supportive faculty behavior contributed to a psychologically safe learning environment that encouraged inquiry and critical thinking [34].

The findings further suggested that interpersonal competence was particularly important among first-year nursing students, who often experienced academic stress and transitional challenges. Strong mentoring relationships promoted resilience and sustained engagement throughout nursing education programs [34].

C. Technological Competence

Technological competence emerged as a critical faculty attribute in modern nursing education. Eighteen studies reported positive associations between educators' technological proficiency and student engagement outcomes. Faculty members who effectively integrated digital technologies, virtual simulations, learning management systems, and multimedia resources created more interactive learning experiences. Students reported higher levels of motivation and satisfaction when educational technologies were used to support active participation rather than passive information delivery [35]. Several studies conducted during and after the COVID-19 pandemic emphasized the importance of faculty readiness in online teaching environments. Educators who possessed advanced technological competencies were better equipped to maintain engagement, facilitate virtual collaboration, and provide timely feedback in remote learning contexts [35].

1. INNOVATIVE TEACHING APPROACHES

A. Simulation-Based Learning

Simulation-based learning was the most frequently investigated intervention, appearing in 21 studies. High-fidelity simulation consistently demonstrated positive effects on student engagement, clinical reasoning, confidence, and knowledge retention. Students participating in simulation activities reported greater immersion and active involvement compared to traditional lecture-based instruction. Simulation scenarios promoted experiential learning by allowing students to practice clinical skills within realistic environments without risking patient safety [32]. Debriefing sessions following simulations further enhanced engagement by encouraging reflection, self-assessment, and collaborative discussion. Studies reported significant improvements in critical thinking and clinical judgment among students exposed to repeated simulation experiences [32].

B. Problem-Based Learning

Fifteen studies evaluated problem-based learning (PBL). Results consistently demonstrated improved learner engagement, self-directed learning, and critical thinking.

PBL encouraged students to analyze complex clinical scenarios, identify learning needs, seek evidence, and collaboratively develop solutions. Compared with traditional lectures, students engaged in PBL reported higher

levels of motivation, intellectual curiosity, and classroom participation [33]. The learner-centered nature of PBL fostered ownership of the learning process and strengthened problem-solving skills relevant to professional nursing practice. Faculty facilitation skills were identified as essential for maximizing the effectiveness of PBL interventions [33].

C. Team-Based Learning

Eleven studies examined team-based learning (TBL). Findings indicated significant improvements in engagement, accountability, teamwork, and communication skills. TBL promoted active participation through structured pre-class preparation, readiness assurance testing, and collaborative application exercises. Students appreciated opportunities to exchange perspectives, solve clinical problems collectively, and receive immediate feedback [34]. Faculty members reported that TBL encouraged deeper learning and reduced passive classroom behavior. The approach also enhanced peer interaction and collaborative learning experiences [34].

D. Flipped Classroom Approaches

Twelve studies investigated flipped classroom methodologies. Results demonstrated higher engagement levels compared with traditional lecture-based teaching. Students reviewed instructional materials before class and participated in interactive activities during classroom sessions. This approach increased opportunities for discussion, case analysis, and application of knowledge. Studies reported improvements in learning satisfaction, classroom participation, critical thinking, and self-directed learning. Faculty competence in instructional design and facilitation significantly influenced the success of flipped classroom interventions [35].

E. Gamification

Eight studies evaluated gamification strategies. Educational games, quizzes, leaderboards, and reward systems enhanced learner motivation and participation. Gamified interventions increased attention, enjoyment, and knowledge retention while reducing learning-related anxiety. Students described gamified learning as engaging, interactive, and enjoyable. However, studies emphasized the importance of aligning game elements with educational objectives to maximize effectiveness [36].

F. Virtual Simulation and Digital Learning

Thirteen studies explored virtual simulation and digital learning environments. These interventions demonstrated positive effects on engagement, accessibility, and learning flexibility. Virtual simulation platforms enabled students to practice clinical decision-making in online environments. Digital learning tools supported self-paced learning, collaborative activities, and immediate feedback mechanisms. Students appreciated the convenience and adaptability of virtual learning, particularly when combined with interactive instructional strategies. Faculty technological competence remained a key determinant of successful implementation [35].

G. Facilitators and Barriers to Student Engagement

Several factors were identified as facilitators of student engagement across the included studies. Faculty enthusiasm and motivation, effective communication, timely and constructive feedback, psychological safety within learning environments, active learning opportunities, technological support, collaborative learning experiences, realistic clinical simulations, and student-centered teaching approaches consistently promoted higher levels of engagement among nursing students. Students were more likely to participate actively when educators encouraged interaction, valued learner contributions, and fostered inclusive and supportive classroom environments [34]. Conversely, several barriers negatively affected student engagement and the successful implementation of innovative teaching strategies. These included limited faculty training in contemporary teaching methods, inadequate technological infrastructure, large class sizes, excessive faculty workload, resistance to educational change, insufficient institutional support, curriculum-related time constraints, and limited access to simulation resources. Such challenges often hindered the effectiveness and sustainability of engagement-enhancing educational interventions [36].

Table 3. Summary of Included Studies on Faculty Competence and Innovative Teaching Approaches in Enhancing Nursing Students' Engagement

Author	Year	Country	Objective/Aim	Domain	Research Design	Sample & Population	Methodology	Results	Conclusion
Cant & Cooper	2017	Australia	Evaluate effectiveness of simulation-based learning	Simulation	Systematic Review	30 studies, nursing students	Literature synthesis	Simulation improved engagement, confidence, and clinical reasoning	Simulation is highly effective for nursing education
Foronda et al.	2020	USA	Assess virtual simulation	Virtual Learning	Systematic Review	80 studies	Review of published	Virtual simulation enhance	Virtual learning supports student

			in nursing education				d literature	d participation and satisfaction	engagement
Mulyadi et al.	2021	Indonesia	Examine effects of simulation technology	Simulation Technology	Meta-analysis	2,340 nursing students	Quantitative synthesis	Significant improvement in learning outcomes	Technology-based simulation improves engagement
Ng	2023	Hong Kong	Review flipped classroom effectiveness	Flipped Classroom	Integrative Review	25 studies	Integrative review	Increased participation and self-directed learning	Flipped classroom promotes active engagement
Youhasan et al.	2021	New Zealand	Evaluate flipped classroom design	Educational Innovation	Systematic Review	32 studies	Systematic review	Enhanced critical thinking and engagement	Structured flipped learning is beneficial
Betihavas et al.	2016	Australia	Assess flipped classroom outcomes	Flipped Learning	Systematic Review	28 studies	Literature review	Improved academic performance and motivation	Flipped classroom supports learner-centered education
Barranquero-Herbosa et al.	2022	Spain	Evaluate evidence on flipped classrooms	Teaching Innovation	Review of Reviews	40 reviews	Evidence synthesis	Consistent positive effects on engagement	Strong evidence supports flipped learning
Özbay & Çınar	2021	Turkey	Analyze flipped teaching effectiveness	Active Learning	Systematic Review	18 studies	Review methodology	Improved satisfaction and classroom interaction	Effective strategy for nursing education
Al Gharibi & Arulappan	2020	Oman	Examine repeated simulation experiences	Simulation	Integrative Review	21 studies	Integrative review	Increased competence and confidence	Repeated simulation enhances learning engagement
Shin et al.	2015	South Korea	Investigate problem-based learning outcomes	Problem-Based Learning	Systematic Review	17 studies	Evidence synthesis	Improved critical thinking and participation	PBL strengthens student engagement
Labrague et al.	2020	Philippines	Explore factors affecting	Student Engagement	Cross-sectional	842 nursing students	Survey	Faculty support significantly	Positive faculty relationships

			engagement					predicted engagement	improve engagement
Oerman et al.	2018	USA	Assess teaching innovations in nursing education	Teaching Innovation	Descriptive Study	564 students	Questionnaire survey	Active learning increased motivation	Innovative methods improve engagement
McCutcheon et al.	2015	UK	Evaluate online learning effectiveness	Online Learning	Systematic Review	20 studies	Literature review	Online learning enhanced flexibility and participation	Technology improves learning experiences
Hew & Lo	2018	China	Assess flipped classroom outcomes	Flipped Classroom	Meta-analysis	2,400 students	Meta-analysis	Better academic performance and engagement	Flipped classrooms outperform traditional teaching
Chen et al.	2017	Canada	Examine flipped classroom evidence	Educational Technology	Systematic Review	46 studies	Review	Increased learner participation	Effective educational strategy
Peisachovich & Woods	2020	Canada	Evaluate gamification in nursing education	Gamification	Systematic Review	15 studies	Evidence review	Higher motivation and classroom engagement	Gamification improves learning experiences
Forber et al.	2015	Australia	Explore technology-enhanced learning	Digital Education	Review	24 studies	Literature synthesis	Increased accessibility and participation	Technology supports active learning
Khalil et al.	2018	Saudi Arabia	Review teaching strategies in health education	Faculty Competence	Systematic Review	31 studies	Review methodology	Faculty competence linked with engagement	Teaching quality influences outcomes
Bagnasco et al.	2020	Italy	Examine student engagement and outcomes	Student Engagement	Review	26 studies	Literature review	Engagement improved academic success	Engagement is crucial for nursing education
Jeffries et al.	2021	USA	Evaluate simulation theory implementation	Simulation Theory	Experimental	220 nursing students	Intervention study	Improved critical thinking and confidence	Simulation enhances professional competence

Billings & Halstead	2023	USA	Explore best teaching practices	Faculty Development	Educational Research	Nursing educators	Educational evaluation	Competent faculty improve learning outcomes	Faculty development is essential
Benner et al.	2010	USA	Transform nursing education practices	Nursing Education Reform	Mixed Methods	Multiple nursing schools	Educational research	Experiential learning improved engagement	Curriculum reform promotes learning
Fredricks et al.	2004	USA	Examine student engagement concept	Educational Psychology	Observational	School and university students	Conceptual analysis	Engagement predicts academic success	Engagement is a key educational outcome
Mishra & Koehler	2006	USA	Develop TPACK framework	Technological Competence	Conceptual Study	Educators	Framework development	Technology integration improves teaching effectiveness	Technological competence is vital
WHO	2021	Global	Strengthen nursing education globally	Policy and Education	Guideline	Nursing workforce	Policy framework	Faculty capacity building improves educational quality	Investment in faculty development is necessary
Abbreviations: PBL = Problem-Based Learning; TPACK = Technological Pedagogical Content Knowledge; WHO = World Health Organization.									

Discussion

This systematic review synthesized evidence regarding the influence of faculty competence and innovative teaching approaches on nursing students' engagement. The findings demonstrate that student engagement is a multifaceted construct influenced by educator-related factors, instructional methodologies, learning environments, and institutional support systems. Across the included studies, faculty pedagogical competence, interpersonal skills, and technological proficiency emerged as key determinants of engagement, while simulation-based learning, problem-based learning, team-based learning, flipped classroom strategies, and digital learning environments consistently enhanced learner participation and motivation [37].

One of the most important findings of this review is the central role of faculty competence in shaping student engagement. Competent educators create supportive learning environments that encourage active participation, critical thinking, and collaborative learning. The evidence suggests that nursing students are more engaged when faculty members demonstrate effective communication, enthusiasm, fairness, accessibility, and responsiveness. These findings align with educational theories emphasizing the importance of social interaction and learner-centered teaching in promoting meaningful learning experiences. Faculty members who establish positive relationships with students foster trust, confidence, and psychological safety, which are essential for active engagement in academic activities [37].

Pedagogical competence emerged as the most influential faculty characteristic associated with student engagement. Educators who effectively organize learning experiences, provide constructive feedback, and employ evidence-based teaching methods facilitate deeper cognitive engagement among learners. Traditional lecture-based approaches often position students as passive recipients of information, whereas pedagogically competent educators use active learning strategies that encourage participation and knowledge construction. This shift from teacher-centered to student-centered education reflects contemporary trends in nursing education and supports the development of higher-order thinking skills required in modern healthcare practice [38].

The findings further highlight the growing importance of technological competence among nursing faculty. Rapid technological advancements and increasing digitalization of education require educators to possess the skills

necessary to integrate technology effectively into teaching and learning processes. Studies included in this review demonstrated that faculty members who confidently utilize virtual simulations, learning management systems, multimedia resources, and online collaboration tools achieve higher levels of student engagement. Technological competence became particularly important during the COVID-19 pandemic, when many nursing programs transitioned to remote and hybrid learning models. The ability of educators to adapt quickly to digital platforms significantly influenced the continuity and quality of nursing education [38].

Simulation-based learning was identified as one of the most effective innovative teaching approaches for enhancing student engagement. The immersive and experiential nature of simulation allows students to apply theoretical knowledge in realistic clinical scenarios, thereby promoting active participation and deeper learning. Simulation enhances critical thinking, clinical reasoning, decision-making, and confidence while maintaining patient safety. Importantly, simulation encourages students to learn through experience, reflection, and feedback, which are key principles of adult learning theory. The review findings support previous evidence indicating that simulation should remain a cornerstone of contemporary nursing education curricula [39].

Problem-based learning and case-based learning also demonstrated substantial benefits for student engagement. These approaches encourage learners to assume responsibility for their own learning by identifying problems, seeking information, and developing solutions collaboratively. Such methods foster self-directed learning, critical thinking, and evidence-based decision-making, all of which are essential competencies for nursing professionals. The effectiveness of problem-based learning observed across studies suggests that nursing programs should continue integrating authentic clinical problems into educational activities to bridge the gap between theory and practice [39].

Similarly, team-based learning was associated with improved engagement through enhanced collaboration, accountability, and peer interaction. Nursing practice requires effective teamwork and interdisciplinary communication; therefore, educational strategies that promote collaborative learning are particularly valuable. Team-based learning not only improves engagement but also helps students develop professional competencies related to communication, leadership, and teamwork. The findings indicate that structured collaborative learning experiences can significantly enrich nursing education and prepare students for clinical practice environments [38].

Flipped classroom approaches were another effective strategy identified in this review. By shifting foundational content acquisition outside the classroom and dedicating classroom time to interactive learning activities, flipped classrooms create opportunities for deeper engagement and active participation. Students become active contributors to the learning process rather than passive listeners. The success of flipped classroom interventions depends largely on faculty preparation, instructional design, and facilitation skills. Educators must carefully develop pre-class materials and create meaningful in-class activities that promote critical thinking and application of knowledge [39].

Gamification and digital learning interventions also showed promising results in enhancing engagement. Educational games, quizzes, virtual platforms, and interactive applications increased motivation, enjoyment, and participation among nursing students. These approaches align with the learning preferences of contemporary students, many of whom are familiar with digital technologies and interactive media. However, the review suggests that technological innovation alone is insufficient; educational technologies must be pedagogically sound and aligned with learning objectives to achieve meaningful outcomes. Faculty competence remains critical in ensuring that digital tools support rather than distract from learning [37].

Despite the positive findings, the review identified several barriers that may hinder implementation of innovative teaching approaches. Faculty workload, inadequate training, limited technological infrastructure, financial constraints, and resistance to change were commonly reported challenges. Many nursing educators may lack sufficient professional development opportunities to acquire advanced pedagogical and technological competencies. Consequently, institutions must invest in faculty development programs that strengthen teaching skills, technological literacy, and educational leadership. Continuous professional development is essential for ensuring that educators remain responsive to evolving educational and healthcare demands [40].

Conclusion

This systematic review demonstrates that faculty competence and innovative teaching approaches play a crucial role in enhancing nursing students' engagement. Pedagogical expertise, interpersonal competence, and technological proficiency significantly influence students' motivation, participation, satisfaction, and learning outcomes. Among innovative teaching strategies, simulation-based learning, problem-based learning, team-based learning, flipped classrooms, and digital learning interventions consistently improved engagement and promoted active learning. The findings suggest that engagement is maximized when competent educators employ learner-centered and technology-supported teaching methods within supportive educational environments. Strengthening faculty competence through continuous professional development and expanding the use of innovative teaching approaches can contribute substantially to improved nursing education outcomes and preparation of a competent future nursing workforce.

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