



Original Article

# Exploring Undergraduate Nursing Students' Perception on AI Integration in the Classroom: A Descriptive Qualitative Study

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## Article history:

Received: January 27, 2026

Revised: March 10, 2026

Accepted: March 11, 2026

Published: March 31, 2026

## ABSTRACT

The sudden emergence of Artificial Intelligence (AI) in the healthcare industry has brought into being a paradigm shift needed but restless in the field of nursing education. These two approaches to learning and knowledge transfer are the most important because the curricular gap between the old and the new digital reality of the modern clinical practice and the ways to negotiate these technologies in nursing students is growing wider with each passing day. This qualitative research is a descriptive study that will examine the perceptions, attitudes, and lived experiences of undergraduate nursing students in terms of the application of AI tools, namely Generative AI (GenAI) and Virtual Reality (VR), in the classroom and clinical learning settings. Data were gathered using semi-structured philosophy of focus groups with undergraduate nursing students (N=22) to reflect on the student experience in order to capture its essence in terms of the descriptive phenomenological approach. The interpretations of the qualitative data were done using thematic analysis. The results indicate the complex dichotomy of the student perceptions. Although the students do see the possibility of AI improving the efficiency of learning, tailoring study schedules and offering secure and simulated clinical settings, there are major challenges when it comes to professional identity. Overwhelming themes included: AI as an Efficiency Tool vs. Critical Thinking Barrier, The Safety Net of Virtual Reality, and Ethical Anxiety and The Hidden Curriculum. The participants were deeply worried about the fact that the overuse of AI could destroy the fundamental humanistic nursing competencies and compassion and create such a phenomenon as de-skilling. The research concludes that students are usually prepared to accept AI technically, but they do not have the required ethical frameworks and institutional guidance that they could be sure. Therefore, AI introduction into nursing education should not be technical but pedagogical by focusing on both AI literacy and human-centered care. These observations can guide educators to plan their curricula based on the idea that AI could be used as a guide, not to replace the critical thinking of nursing.

**Keywords:** Artificial Intelligence, Nursing Education, Student Perception, Qualitative Study, Academic Integrity, Virtual Reality

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JEL Classification: **O14**

## How to Cite:

Irfan, K., Ubaidullah, S., Bhatti, A. A., Soomro, I. A., Siddiqui, D. A., & Atif, A. (2026). Exploring Undergraduate Nursing Students' Perception on AI Integration in the Classroom: A Descriptive Qualitative Study. *Bulletin of Multidisciplinary Studies*, 3(1), 120–124. <https://doi.org/10.48112/bms.v3i1.1211>

## Publisher's Note:

International Research and Publishing Academy (iRAPA) stands neutral with regard to jurisdictional claims in the published maps and institutional affiliations.

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## INTRODUCTION

Higher education is undergoing a seismic shift as a result of the Fourth Wave of the Industrial Revolution, and Artificial Intelligence (AI) is at the vanguard of these changes (Penprase, 2018). In the realm of healthcare, AI is no longer a future concept but a current reality. Nursing, as a practice that combines the scientific and the humanistic, must confront the opportunities and the dangers of machine learning and AI. As the practice of medicine shifts to precision medicine and digital health, nursing education must keep pace. Nursing graduates must not only possess the knowledge and skill to practice but also the digital fluency and ethical awareness to thrive in a new world of precision nursing and AI-driven care. AI and AI technologies, such as the use of Large Language Models (LLMs) such as ChatGPT, and virtual reality (VR) simulations, are revolutionizing the lecture hall and the practice setting (Abou Hashish, et al., 2025; Saab et al., 2021).

However, the pace of technology far surpasses the evolution of teaching and learning. While the focus of educators and policymakers is the guidelines and the rules, the nursing student finds herself in a world of confusion, anxiety, and a hidden curriculum of AI use, driven by the pressure of academic achievement rather than the desire for learning, as reflected in recent literature. AI provides students with personalized learning experiences. For example, the use of AI teaching assistants ensures that students receive constant support. They assist students in understanding complex concepts beyond the lecture period (Kowitlawakul et al., 2024). In addition, the use of virtual reality simulations enables students to practice high-risk clinical procedures. Students become more confident without the risks of harming patients. This is particularly important given the current clinical placement shortages following the COVID-19 pandemic.

However, the use of AI is also accompanied by ethical and professional concerns. For nursing students, the use of AI raises concerns about data privacy, bias, and misinformation (Bodur et al., 2025). In addition, the use of generative AI tools is convenient but has sparked controversy regarding academic integrity. For example, nursing students may be tempted to use AI tools to complete assignments. As a result, the use of AI tools raises concerns regarding the authenticity of student work. When the university prohibits the use of AI tools without offering guidance, students may use the tools in unethical ways. Moreover, the use of AI may result in the skill erosion of nursing students. When AI

tools handle cognitive functions, students may lack the critical thinking skills required to become competent nursing professionals.

For example, nursing is a social profession that involves communicating with patients and empathizing with their situations. In uncertain situations, nursing professionals use their judgment to make decisions. Therefore, the use of AI tools may result in the deskilling of nursing students. Thus, rather than measuring readiness levels, the use of AI tools may result in the Skill erosion of nursing students. Moreover, the use of AI tools may result in the de-skilling of nursing students. When AI tools handle cognitive functions, students may lack.

### Objective of the Study

- To explore the perception of undergraduate nursing students regarding AI integration in classroom

### Problem Statement

The swift integration of Artificial Intelligence (AI) within the healthcare field has created a problem for nursing education. Nursing students need to learn traditional nursing skills; however, they are also expected to learn to work with new technology such as ChatGPT, automated graders, and other simulators. Yet, despite its integration into the lives of people, there exists a problem related to understanding the ways by which nursing students process and understand these new forms of technology (Nezhad et al., 2025). The problem exists on two levels. First, the integration of AI within the classroom creates an ethical ambiguity. Without proper pedagogical guidelines, nursing students are left to reconcile the benefits of AI with perceptions of academic dishonesty (Zgambo et al., 2025). Second, unmonitored integration creates a problem related to critical thinking and empathy, which are key nursing values (Bodur et al., 2025).

The current body of research examines the quantitative acceptance or educator perceptions; yet, little research has been conducted on the lived experiences of nursing students. However, if the perceptions of nursing students are not understood, it creates a problem for the integration of these new tools. Therefore, a qualitative understanding of nursing perceptions is necessary to develop an understanding of the integration of these tools within nursing education. This research employed a qualitative research design that is descriptive in nature and phenomenological in approach. Qualitative research is best employed in situations where the subject of research is human

and where the data cannot be quantified effectively (Nezhad et al., 2025). The descriptive research design employed in this research enabled the researcher to gain an in-depth understanding of the nursing students lived experiences in relation to the integration of AI in the classroom, without the need to impose any theory or manipulate variables.

The research design is based on the research conducted in the nursing department of a university. Purposive sampling is used to select the participants, ensuring that the participants meet the inclusion criteria: undergraduate nursing students from sophomore to senior year who have used AI tools such as Generative AI, VR simulation, or AI-driven study tools. Purposive sampling ensures that the participants have the right experience to answer the research questions appropriately. Emails and lectures were used to recruit the participants, ensuring that the sample is

representative of the population with varying years. The study employed three Focus Group Discussions (FGDs) with 22 participants. Focus group discussions were preferred over individual interviews due to the interactive benefits of focus groups. The group phenomenon facilitates participants to open up to new ideas that might not be shared in individual interviews (Abou Hashish et al., 2025). The FGDs were conducted with 6-8 participants each. The FGDs were conducted with participants for between 60 and 90 minutes. The FGD guide was designed after conducting the literature review. The FGD guide included open-ended questions. All sessions were audio-recorded with the participants' consent. The audio recordings were then transcribed. To maintain participants' privacy, identifying features were removed, and new names were given to the participants. Data saturation was achieved when new themes were not generated in the final focus group session.

**Table 1**  
Extracted Theme and Subthemes

Theme	Key Benefits/Advantages	Key Concerns/Risks
Theme 1: The Double-Edged Sword of Efficiency	Functions as a 24/7 tutor. Accelerates learning by simplifying complex medical terminology and summarizing research. Saves time on study tasks and lecture comprehension.	Risk of intellectual laziness and superficial learning. Potential for decreased cognitive engagement. Fear that reliance on AI for critical thinking may hinder performance in real-life emergencies.
Theme 2: The Safety Net of Virtual Reality (VR)	Provides a safe haven to practice without the danger of harming patients. Helps develop muscle memory and confidence through repetition. Reduces anxiety and increases clinical readiness.	Viewed as a supplementary tool rather than a total substitute for real practice.
Theme 3: Ethical Anxiety and the Hidden Curriculum	No specific benefits mentioned; this theme focuses on institutional and professional challenges.	Lack of clear institutional guidance, leading to a shadowy situation regarding AI use. Paranoia regarding plagiarism detectors (like Turnitin) misidentifying formal writing as AI-generated. Fear of de-skilling and becoming a robot nurse who lacks human compassion and gut feelings. Risk of losing the essential nurse-patient connection.

## Discussion

The results offer significant insights into the relationship between nursing students and AI, with both pragmatic and existential implications. Unlike the typical quantitative research that divides students into two groups: ready or not ready, this qualitative research showed that students face a complex ethical landscape. It is essential to distinguish between generative AI and simulation AI. Virtual Reality is seen as a safety net with a positive connotation (Saab et al., 2026), while generative AI is seen as frightening due to the impact on intellectual engagement. This is consistent with the argument presented by Gonzalez-Garcia et al. (2025), which showed that students may become trapped in the intellectual offloading paradigm, where the AI does the thinking for the student. In this case, the student does not engage their intellect. It is important to note that the use of AI is not a one-size-fits-all situation.

Virtual Reality should be managed differently from the use of generative AI. Students seem to appreciate the use of AI tools as long as they are clearly defined as tools to improve practice.

Moreover, there is a hidden curriculum of secret AI usage discussed in this study, which emphasizes a failure in policies. Zgambo et al. (2025) argue that rather than teaching students about the ethical use of AI, focusing on policing AI usage results in a culture of fear. The students in this research did not cheat by any means; they believed in the effectiveness of modern tools. However, there was no clear framework for using AI in an open manner. This is a clear example of a lack of AI literacy education in schools. This results in students using AI in a secret manner without any clear understanding of important concepts such as verification, bias, hallucinations, etc. The fear of a decline in human touch in nursing, as discussed in Alenazi and

Al-Anazi (2025), is a reassuring factor because it shows that students are aware of the main aspects of nursing. Instead of blindly trusting technology in a humanistic model of care, students are critically thinking about its role in nursing. Today's generation is passive digital natives. The students are very careful about their professional identity and are afraid that AI might take away from the human touch in nursing. This fear of de-skilling in nursing is a clear reflection of a deep sense of responsibility because they want to be competent in technology as well as in their role as a caregiver.

## CONCLUSION

This study examines the attitudes that undergraduate nursing students have about the integration of AI in the classroom. The results reveal that this group of students is cautiously optimistic yet conflicted. They recognize the power that AI has to improve learning outcomes and to safely mimic realistic experiences, yet they are also greatly concerned about the erosion of critical thinking skills and the human touch in the practice of nursing. For today's nursing students, the experience of living with AI means finding the balance between efficiency and integrity, between technology and solid human competence. The results are clear: adding tech to the learning experience isn't just about logistics; it's also about teaching and ethics. The students want to find the roadmap to using this tech without sacrificing their identity as future caregivers. The juxtaposition between the safety offered by virtual reality and the anxiety provoked by generative AI prompts the students to think critically about AI and its potential impact.

The bottom line here is, yes, AI is here to stay in nursing education, and the key to its successful application and utilization is to keep people at the centre. Simply injecting AI into the nursing curriculum, as it were, does not guarantee a better outcome. Nursing educators must present AI as a good friend to human smarts, rather than a replacement for it. By calming the fear of losing competencies and defining the ethical guidelines, nursing schools can use AI as a springboard for professional development, rather than a source of apprehension. The future of nursing education is not about people or computers; it's about how to remain human in a world of computers.

### Competing Interest

The authors had no competing interests.

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