



Visual Generative Artificial Intelligence as a Pedagogical Tool in Graduate Nursing Education

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Abstract

Purpose: Generative artificial intelligence (GenAI) is rapidly influencing higher education, including nursing education, where graduates must develop technological competence alongside critical thinking and creativity. Although existing literature has primarily examined GenAI for text generation and knowledge support, limited attention has been given to the pedagogical potential of visual GenAI tools such as AI generated images. The purpose of this paper is to describe and critically reflect on an AI integrated assignment implemented in a graduate nursing course that used AI generated visuals to stimulate creativity, support authentic assessment, and encourage critical engagement with emerging healthcare technologies.

Method: This paper presents a reflective description of a multilayered assignment implemented in a condensed seven-week summer graduate course titled *Integrating Information Technology in Healthcare* offered within a Master of Nursing program. The assignment required students to identify a healthcare challenge and propose an innovative technology driven solution supported by literature and illustrated using AI generated images. The project included three components: (1) development of a written proposal with visual representations, (2) an expanded report and class presentation demonstrating adaptability of the solution to another population, and (3) structured peer feedback. Students were permitted to use any AI image generation tool. Following course completion, six of the eight students provided consent for their work to be included as exemplars in this scholarly reflection. Informal student feedback gathered through an anonymous course feedback form and class discussion informed reflections on the assignment design and learning experience.

Results: Students developed six conceptual technology driven solutions addressing contemporary healthcare challenges, including augmented reality nursing support systems, community-based triage pods, robotic navigation assistants, AI powered home care companions, portable diagnostic tools, and assisted feeding robots. Informal feedback suggested high levels of engagement and satisfaction with the assignment. Students reported that the integration of AI generated images enhanced creativity, encouraged exploration of emerging technologies, and supported deeper understanding of healthcare system challenges. Learners initially experienced low confidence and technical challenges when using AI tools, particularly related to image generation limits and prompt design. However, confidence and skills improved over time, particularly in prompt development and critical evaluation of AI generated outputs.

Conclusion: Integrating visual GenAI tools within authentic assessment can support creativity, innovation, and critical thinking in graduate nursing education. When carefully designed, AI supported assignments can encourage students to critically evaluate technological solutions while maintaining alignment with professional and ethical nursing principles. The approach presented offers a practical model for educators seeking to integrate AI into curricula while preserving human-centered learning and professional accountability. Broader implications for educators, regulatory bodies, and academic institutions are discussed, highlighting emerging competency frameworks, professional development opportunities, and scholarly dissemination initiatives that support responsible AI integration. Ultimately, this work demonstrates that thoughtfully designed AI-enhanced assignments can be used to prepare graduate nursing students to navigate complex, technology-enabled healthcare environments with creativity, accountability, and human-centered care.

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Introduction

Generative Artificial Intelligence (GenAI) is transforming higher education and offers significant potential for graduate nursing programs, where learners need advanced clinical knowledge alongside creativity, critical thinking, and innovative problem-solving. While most research emphasizes AI for technical and cognitive skill development, limited attention has been given to visual GenAI tools, such as AI-generated images, which can enhance creativity, motivation, and comprehension of complex healthcare concepts [1-3]. In this paper we describe a graduate-level course, HLTH 5500: Integrating Information Technology in Healthcare, in which students engaged with AI generated images as part of a multilayered assignment. The assignment was designed to promote responsible AI use, enhance learners' confidence in engaging with AI technologies, and foster innovative thinking. The depth, quality, and originality of the students' work prompted a scholarly dissemination initiative, with six students providing informed consent for the inclusion of their assignments in this paper. The purpose of this paper is to offer a practical model for educators seeking to meaningfully integrate AI into educational assignments, while also stimulating ongoing scholarly dialogue and the development of innovative approaches to advancing the use of AI within nursing education.

Background

The rapid advancement of GenAI is reshaping higher education. As healthcare systems become increasingly complex and technology-driven, graduate nursing students are expected to demonstrate creativity, critical thinking, and innovative problem-solving when addressing multifaceted healthcare challenges. Within this evolving landscape, GenAI, especially in visual forms such as AI-generated images, presents new opportunities to support learning, engagement, and imaginative reasoning in ways that traditional pedagogical approaches may not fully achieve [1-3]. To harness these opportunities while ensuring ethical and critical engagement, nurse educators may leverage authentic assessment as a key framework when designing courses.

Authentic assessment in nursing education refers to evaluation methods that mirror real-world scenarios, requiring students to apply knowledge, skills, and judgment in contexts that are similar to professional practice [4-6]. Authentic assessments emphasize meaningful tasks that foster critical thinking, problem-solving, and ethical decision-making such as simulations and self-assessment activities [7-9]. In the context of integrating GenAI, designing the assignment using an authentic assessment framework meant leveraging technology as a tool and requiring students to critically evaluate AI outputs. The underlying belief is that by prioritizing authenticity, nursing curricula can better prepare graduates for the complexities of AI-driven healthcare environments while mitigating risks like overreliance on automation.

The potential use of AI-generated images particularly to facilitate discourse, reflection, and meaning-making around complex clinical concepts, represents an emerging pedagogical approach to authentic assessment [2]. Visual GenAI tools may be especially valuable for graduate nursing students, as they support the translation of abstract, theoretical, or systems-level healthcare issues into concrete and interpretable representations. Evidence from non-nursing disciplines further supports the role of AI-generated visuals in enhancing creativity, imagination, and deeper learning by enabling learners

to externalize mental models and explore multiple perspectives on complex problems [3, 10].

While there is an expanding evidence-base about the potential for AI to positively influence learning [11], tension exists between the imperative to prepare graduates to work safely and competently with AI-informed technologies as reflected in the Canadian Association of Schools of Nursing (CASN) [12] nursing informatics entry-to-practice competencies and concerns that routine use of Gen AI in education may undermine critical thinking, academic integrity, and the development of essential real-world clinical reasoning and communication skills [13, 14]. Critical reflection is needed to navigate these tensions and explore balanced integration strategies. Therefore, the purpose of this paper is to critically reflect on an example of a graded multilayered AI-integrated assignment completed by an interdisciplinary group of graduate students. We showcase student's assignment, discuss their informal feedback, critically reflect on future considerations for incorporating similar or enhanced assignments and share resources that educators can use to thoughtfully and pedagogically integrate AI into curricular assessments.

Course and Assignment Description

In the summer 2025, The HLTH 5500 course, *Integrating Information Technology in Healthcare*, was introduced for the first time as an elective within the Master of Nursing program at Thompson Rivers University (TRU). The course was a 7-week condensed summer course with 6 hours of online synchronous classes per week. Conceived as an interdisciplinary offering, the course attracted students from diverse academic backgrounds, including nursing and business, with a total enrolment of eight participants. Its primary aim was to advance students' understanding of emerging technological tools and to cultivate innovative thinking regarding their application in current and future healthcare environments. Throughout the term, students completed a series of assignments designed to promote critical analysis and imaginative engagement with the transformative potential of technology in health systems.

One of the course assignments, titled *Technology-Driven Healthcare Solutions*, was designed to intentionally and authentically integrate AI by having students use imaginative AI generated images to develop a future oriented solution to a current issue within the Canadian healthcare system. The assignment emphasized innovation, research competency, effective visual communication, and constructive peer engagement, while also promoting exploration of AI tools and responsible AI use. Its overarching goal was to strengthen graduate students' motivation, creativity, confidence, and problem-solving abilities when addressing complex healthcare challenges.

The *Technology-Driven Healthcare Solutions* Assignment was a three-part individual project designed to explore the transformative role of technology in healthcare. Part A required students to identify a healthcare challenge and propose an original technology-based solution not implemented within the local context. Students were required to demonstrate evidence of novelty, produce AI-generated images, and provide a narrative on population impact. Part B required students to expand the proposed solution in Part A by adding five new AI-generated images, shifting the target population to demonstrate transferability of their proposed solution and updating the supporting evidence to confirm the solution's continued novelty. The student submitted a report with the new additions and presented their work in class in a 15-minute presentation followed by a question-and-

Table 1: Summary of project components.

Part	Focus	Brief description
Part A: Paper (25%)	Problem identification and proposed solution	- Identify a Canadian healthcare system issue and propose an innovative technology-based solution that is not currently implemented locally, as demonstrated through a focused review of the relevant literature. - Create 10 AI-Generated images to visually represent the solution and its impact on a selected population.
Part B: Presentations and Report (25%)	Extend and adapt the proposal	- Update literature search - Use another population to show transferability of the proposed solution - Add 5 new AI visuals to expanded discussion of benefits and challenges of the proposed solution - Submit a report outlining changes. - Present in class and respond to peer questions.
Part C: Peer Feedback (10%)	Peer engagement	- Ask a thought-provoking question of a peer. - Provide structured feedback on a peer's presentation.

answer session. Part C emphasized purposeful peer engagement. After each presentation, a peer posed a thought-provoking question and subsequently provided structured, criteria aligned feedback on the presenter's work. The course instructor provided individualized feedback to each student after every component of the assessment to support learning. Table 1 presents the summary of project components.

Students self-selected their topics and were permitted to use an AI tool of their choosing. During the initial class session, the course instructor provided a comprehensive overview of the course structure and assignment requirements, accompanied by a sample solution that included AI generated images. The instructor also introduced several AI based image generation tools including Microsoft Copilot, which students could use for free; however, students had the flexibility to select alternative tools to support their visual work. Formative feedback was provided after each stage of the assignment to support the progressive development of student work. This feedback consisted of detailed written comments and individualized discussions with students who encountered challenges with GenAI, as well as with those who wished to further explore and refine their ideas.

The originality and forward-looking perspectives demonstrated in these submissions were particularly compelling from a pedagogical standpoint. Following the completion of the course and the finalization of grades, the instructor initiated a publication project to showcase student work. To ensure ethical integrity and voluntary participation, an authorship agreement was distributed to all students. Six of the eight students agreed to include their work in this publication.

Examples of Student Work

This section presents six innovative hypothetical solutions developed by graduate students as part of this course assignment. These conceptual designs draw on authentic assessment principles, mirroring real-world healthcare challenges and requiring critical evaluation of AI outputs. Each solution is summarized concisely, and one AI generated image is included for each project for illustrative purposes. The images were created using tools such as ChatGPT, Gemini, and Copilot (see Figures 1 to 6). It is important to note that these solutions represent conceptual designs or adaptations of existing innovations that were not implemented within the local context at the time of the assignment. The innovations included: NurseLens; VitalLink; NavigateBot; AIDAN; QuickScan and Assisted-Feeding Robots.

1. NurseLens: High-acuity nursing environments place heavy cognitive demands on nurses due to fragmented digital systems, frequent interruptions, and complex multitasking, increasing fatigue



and safety risks. NurseLens, an augmented reality smart-glasses system, integrates real-time patient data into the nurse's field of view to reduce workflow disruptions and cognitive load. It supports efficient decision-making, hands-free documentation, and improved care coordination. While offering clear benefits for efficiency and patient safety, NurseLens raises concerns about overreliance on automation, physical fatigue, and potential impacts on nurse-patient relationships. Its success depends on careful implementation that preserves clinical judgment and compassionate, patient-centered care.

2. VitalLink: Access to timely and equitable healthcare in Canada is constrained by emergency department overcrowding, limited primary care access, and barriers related to geography, language, and digital exclusion. VitalLink addresses these gaps through community-based, AI-augmented triage pods that offer walk-in, multilingual, and digitally integrated services in underserved areas. The system combines smart sensors, electronic health record integration, and remote nurse-led triage to improve care coordination and reduce unnecessary emergency visits. While VitalLink enhances access,





Figure 3: NavigateBot.

inclusivity, and workforce efficiency, it faces challenges related to cost, digital literacy, privacy, and diagnostic limitations. Its successful adoption requires integrated electronic health system, investments in setting up pods in rural areas and technology support.

3. NavigateBot: Navigating complex healthcare environments is challenging for many patients, particularly those facing language barriers, mobility limitations, or heightened anxiety, while also increasing non-clinical workload for staff. NavigateBot is an AI-enabled robotic navigation system designed to support patient wayfinding through real-time, accessible, and mobility-aware guidance. By offering multilingual, intuitive navigation tailored to physical needs, it improves patient autonomy, confidence, and overall care experience. The system also reduces staff interruptions related to wayfinding, supporting workflow efficiency and burnout reduction. Its successful adoption depends on addressing reliability and data privacy concerns while ensuring seamless integration into clinical settings.

4. AIDAN: Aging populations and increasing healthcare demands highlight the need for home-based solutions that support independent living and reduce preventable hospitalizations. AIDAN is an AI-powered smart companion designed to assist seniors and individuals with disabilities through health monitoring, medication management, multilingual communication, and smart home integration. These features promote early intervention, improve adherence, and enhance autonomy, quality of life, and caregiver support. While AIDAN offers significant benefits for users and healthcare systems, challenges related to cost, data privacy, technical reliability, and technology-related anxiety remain. Its long-term success depends on ethical, affordable, and user-centered implementation that supports aging in place.

5. QuickScan: Emergency department overcrowding in Canada is partly driven by low-acuity skin injuries that could be managed in community settings. QuickScan is a portable, AI-powered diagnostic



Figure 4: AIDAN.



Figure 5: QuickScan.



Figure 6: Assisted-Feeding Robots.

tool designed to support early assessment and triage of minor to moderate skin conditions across home, clinic, and underserved environments. By enabling timely evaluation for pediatric and adult populations, including those with chronic conditions, it may reduce unnecessary emergency visits and improve wound care outcomes. While QuickScan enhances accessibility, autonomy, and resource efficiency, challenges related to connectivity, digital literacy, data privacy, and affordability remain. Its future success depends on rigorous evaluation, secure integration, and equitable implementation within community-based care models.

6. Assisted-Feeding Robots: Malnutrition is common among hospitalized elderly and stroke patients, often due to physical impairments and limited staff capacity to provide consistent feeding assistance. Assisted-feeding robots offer a technology-enabled solution by supporting independent or minimally supervised eating while preserving dignity and autonomy. These systems may improve nutritional intake, psychological well-being, and reduce pressure on nursing staff. However, high costs, potential reductions in human interaction, technology-related anxiety, and workflow integration challenges must be addressed. Their effectiveness depends on careful, patient-centred implementation and ongoing evaluation.

Informal Feedback

In the final class, an anonymous Course Assignment Feedback Form was used to gather students' perceptions of the course assignments and overall learning experience. Participants rated their satisfaction with the assignments, their perceived engagement, relevance to course content, and the clarity of assignment instructions using Likert-scale survey. Students were also asked to rank the assignments to indicate which aspects they found most valuable, such as creativity, peer interaction, technology use, and connections to real-world practice. The form also included open-ended questions inviting participants to describe challenges encountered, suggest improvements for future offerings, and provide any additional comments about the course and

assignments. Following the completion of this form, the instructor invited participants to verbally share their thoughts about the course assignments, which generated a rich discussion on the Technology-Driven Healthcare Solutions assignment. Since the feedback was gathered solely for the instructor's reflection purposes and to support understanding and inform future refinement of the assignment design, ethical approval was not obtained. Therefore, Likert-scale data and participant quotations cannot be shared. Instead, we share an overview of anecdotal feedback drawn from the form, verbal discussion, and co-author reflections on the assignment.

Overall students were generally satisfied with the assignment, describing it as clear and relevant. Their favourite component was Part A, which involved generating the innovative idea with the assistance of GenAI. Students enjoyed being creative and trying new tools, describing the assignment as one that generated interest in how technology is used in healthcare. Students initially demonstrated low confidence and encountered challenges related to the use of free AI accounts, particularly with respect to limitations on the number of images that could be generated. These constraints prompted in-class discussions concerning the accessibility of AI services and the implications of restricted access. Through engagement with the assignment, students also developed foundational competencies in prompt engineering and shared how their prompt-writing skills improved over time in order to get the consistent images. The assignment was perceived as time intensive, as the majority of students were unfamiliar with AI technologies and required additional time to become proficient in identifying, evaluating, and experimenting with a range of AI tools. Nevertheless, by the conclusion of the course, students expressed strong appreciation for the assignment and reported that it effectively supported their learning about emerging AI technologies, including their capabilities and limitations in image generation. Students further noted that the assignment differed from traditional written assignments, incorporating multiple interconnected components that enhanced engagement and encouraged ongoing exploration.

Discussion and Critical Reflection on Future Considerations

In the evolving landscape of nursing education, the integration of GenAI presents both significant opportunities and notable challenges. On one hand, educators increasingly advocate for preparing nursing graduates to effectively collaborate with AI technologies in real-world clinical and professional settings through authentic assessment [15]. This approach aligns with national informatics expectations that emphasize nurses' ability to leverage digital health tools to support patient care, data management, and clinical decision-making [12]. As GenAI becomes embedded in widely used platforms such as search engines and productivity software, it is essential that graduates develop the capacity to critically appraise AI-generated outputs and use these tools responsibly. Preparing future nurses to navigate an increasingly AI-enabled healthcare environment is particularly important as technologies such as predictive analytics and virtual assistants continue to shape care delivery and system efficiency [16, 17].

At the same time, a clear tension exists within nursing education. Some educators and scholars express concern that GenAI may undermine foundational educational principles if used uncritically [18]. They caution that overreliance on automated tools could impede the development of essential competencies, including critical

thinking, problem-solving, and hands-on clinical reasoning [19]. For example, automated content generation may bypass the cognitive effort required to synthesize information, potentially leading to surface-level learning and reduced preparedness for managing complex, unpredictable patient scenarios [20]. This debate reflects a broader pedagogical challenge in higher education, where innovation must be carefully balanced with the preservation of meaningful skill-building experiences.

The assignment described in this paper was intentionally designed to address this tension through authentic assessment. Students developed hypothetical AI-enabled solutions to real healthcare challenges, such as emergency department overcrowding and malnutrition among older adults. The tasks required students to draw on evidence-based literature, engage in creative problem-solving, and align their proposed solutions with Canadian healthcare system values and professional responsibilities. Students were also required to critically evaluate AI-generated outputs, fostering metacognition, ethical reasoning, and reflective judgment.

Reflecting on this experience highlights that the role of educators is not simply to adopt or reject GenAI, but to critically examine how it can be pedagogically integrated to enhance learning. In our teaching practice, GenAI functioned as a scaffold rather than a substitute for learning by supporting early-stage idea generation and information gathering, while still requiring students to engage deeply through analysis, synthesis, and application. The student examples presented in this paper demonstrate high levels of critical thinking and a sophisticated understanding of healthcare challenges faced by nurses and the broader public. These solutions illustrate how innovative technological approaches may be thoughtfully leveraged to address systemic issues within the Canadian healthcare system, while also emphasizing creativity and imagination as essential components of professional problem-solving.

Importantly, students were not only able to propose AI-driven solutions, but also to articulate the limitations, ethical considerations, and potential unintended consequences associated with their designs. This critical engagement helped prepare students for future innovation by encouraging forward-thinking perspectives grounded in realism and professional accountability.

Beyond pedagogical innovation, the integration of GenAI in nursing education raises important considerations related to responsible use, ethical awareness, and learner confidence. While increased exposure to AI tools can enhance technological competence, structured educational approaches are necessary to support transparency, ethical decision-making, and critical evaluation of AI-generated content. Evidence suggests that formal instruction in AI within nursing education can significantly improve students' comfort with these technologies, their understanding of limitations, and their readiness to engage with AI in future professional roles [19, 21, 22].

Despite its strengths, the assignment also had limitations. The hypothetical nature of the designs restricted opportunities for implementation, testing, and deep evaluative judgment.

Implementation would also not be feasible within the timeframe of this course. Additionally, the absence of physical prototyping and structured peer collaboration suggests opportunities for future iterations to incorporate group-based work and applied testing. As educators, we must also remain attentive to potential risks associated with AI use, including data privacy concerns and the

possibility of widening digital inequities among learners [23, 24]. Maintaining a critical and reflective approach is essential to ensure that AI integration supports both technological proficiency and the development of enduring, human-centered nursing competencies.

Implications for Educators

Gen AI is increasingly shaping higher education by transforming how students learn and by prompting educators to reconsider course design, teaching strategies, and assessment practices. As AI becomes an enduring feature of contemporary educational environments, nursing regulatory and professional bodies at both national and provincial levels have begun revising guidelines and competency frameworks to address its implications for education and practice. At the national level, the Canadian Association of Schools of Nursing released the Nursing Informatics Entry-to-Practice Competencies [12], reflecting rapid advances in digital health technologies, including AI. Informed by a comprehensive literature review and a national consultation process, the revised competencies expand foundational informatics expectations for new graduates and explicitly acknowledge the growing influence of AI within digitally enabled healthcare environments.

Provincial nursing regulators across Canada have also initiated efforts to revise competencies, standards, and practice guidance, while developing resources that explicitly address the use of AI in nursing education and practice. For example, the College of Nurses of Ontario has developed educational resources focused on AI in nursing practice and has incorporated AI-related considerations into guidance on documentation and virtual care, reinforcing nurses' professional accountability when using AI-informed tools [25-27]. Similarly, the British Columbia College of Nurses and Midwives has begun integrating AI into its regulatory framework through guidance that supports the safe, ethical, and competent use of AI in practice. While there is no standalone AI practice standard, BCCNM's Using Artificial Intelligence in Practice resource emphasizes that AI should support, rather than replace, clinical judgment and highlights key considerations such as privacy, bias, informed consent, and professional accountability. Recent updates to standards related to consent, privacy and confidentiality, and documentation further reinforce nurses' responsibilities when using AI-enabled tools. These initiatives reflect a broader national shift toward recognizing AI as an emerging component of nursing education and practice, while reaffirming ethical responsibility, critical evaluation, and human-centered care as core professional values [28, 29].

Academic institutions are increasingly developing formal guidance to support the responsible integration of AI in teaching and learning. For example, a multidisciplinary working group at TRU conducted an environmental scan of guidelines from Canadian universities, identified common themes, and engaged with questions raised by the academic community, including student experiences, assessment practices, academic integrity, and pedagogy [30]. This work informed the development of the GenAI in Education open access resource hub [31]. The hub acknowledges that educators vary in their approaches to AI, ranging from active integration to cautious limitation. It offers practical strategies and decision-making supports, including guidance on appropriate AI use in courses, sample syllabus language, classroom activity ideas, a critical AI framework, a curated tool inventory, and a prompt library to support the design of learning activities, assessments, and rubrics grounded in ethical and pedagogically sound practice. Open access courses developed

by universities such as GenAI Quickstart: Foundations for Faculty, demonstrate how structured, self-paced, and applied professional learning can support educators in foundational AI literacy [32]. In recent years, there has been a notable increase in institutionally supported grants designed to advance the integration of AI in teaching and learning, with an emphasis on pedagogical transformation rather than technology adoption alone. These funding programs commonly support initiatives such as course redesign using GenAI tools, AI-enhanced assessment and feedback approaches, development of simulation and experiential learning activities supported by intelligent systems, and faculty research examining the educational impact of AI. For example, the Instructional Innovation Grant in Artificial Intelligence in Teaching and Learning at TRU which encourages applied digital and AI-infused teaching practices [33].

Scholarly dissemination venues increasingly position AI as a distinct and emerging area of inquiry within nursing education and practice. Peer-reviewed journals such as *Quality Advancement in Nursing Education* have issued focused calls for papers and special issues that examine how AI is reshaping ways of knowing, teaching, and practicing nursing [34]. These initiatives encourage scholars to move beyond descriptive accounts of technology adoption and to critically engage with the epistemological, ethical, pedagogical, and regulatory implications of AI. In parallel, nursing conferences are increasingly incorporating AI-focused symposia, workshops, and roundtable discussions that bring together educators, clinicians, and researchers to share emerging evidence, innovative practices, and lessons learned from integrating AI into educational and clinical contexts. Institution-led scholarly events further strengthen this exchange by fostering interdisciplinary dialogue. For example, the AI Showcase, hosted at TRU is co-organized by the Centre for Excellence in Learning and Teaching in collaboration with multiple faculties and Learning Technology and Innovation [35]. This showcase provided a cross-faculty platform for sharing AI-enhanced teaching practices, research initiatives, and emerging insights, reinforcing institutional engagement with AI in higher education. National professional organizations also play a critical role in supporting scholarly dissemination. Organizations such as the Canadian Nursing Informatics Association (CNIA) regularly feature AI-focused educational events and conferences to encourage AI related dialogue among educators [36].

Conclusion

In this paper we illustrate how GenAI when thoughtfully integrated through authentic assessment, can meaningfully support graduate nursing education by fostering creativity, critical thinking, and innovative problem-solving. By embedding AI-generated images within a multilayered assignment, students were encouraged to engage with emerging technologies not as shortcuts to learning, but as tools that require critical appraisal, ethical reflection, and alignment with evidence-based nursing principles. The student exemplars presented demonstrate that visual GenAI can support imaginative reasoning and the translation of complex healthcare challenges into concrete, future-oriented solutions while preserving professional accountability and human-centered care.

Our reflection on this course experience suggests that intentional pedagogical design is central to mitigating commonly cited concerns about AI use in education, including threats to academic integrity and critical thinking. When positioned as a scaffold rather than a substitute for learning, GenAI can enhance engagement, build

learner confidence, and promote deeper understanding of both the possibilities and limitations of AI-enabled technologies. Importantly, students' ability to articulate ethical considerations, risks, and unintended consequences highlights the value of integrating reflective and evaluative components into AI-supported assignments.

Although the work presented is based on hypothetical designs and informal feedback, it offers a practical and adaptable model for educators seeking to responsibly incorporate AI into graduate-level curricula. Future iterations may benefit from opportunities for prototyping, interdisciplinary collaboration, and formal evaluation to further strengthen learning outcomes. As AI continues to shape healthcare and education, nurse educators play a critical role in preparing graduates who can thoughtfully, ethically, and creatively engage with these technologies. This paper contributes to the growing scholarship in this area by demonstrating how visual GenAI, grounded in authentic assessment, can support the development of innovative, reflective, and practice-ready nursing professionals.

References

- Berg C, Omsén L, Hansson H, Mozelius P. Students' AI-generated images: Impact on motivation, learning, and satisfaction. *Intl Conf Artificial Intellig Res*. 2024; 4(1): 500-506.
- Reed J, Alterio B, Coblenz H, O'Lear T, Metz T. AI image-generation as a teaching strategy in nursing education. *J Interact Learn Res*. 2023; 34(2): 369-399.
- Tianshu W, Sukumaran S. Integrating AI-based image generation in design education: A mixed-methods quasi-experimental study on academic performance improvement. *Perinatal Journal*. 2025; 33(1): 210-218.
- Gulikers JTM, Bastiaens TJ, Kirschner PA. A five-dimensional framework for authentic assessment. *Educ Technol Res Develop*. 2004; 52(3): 67-86.
- Killam LA, Camargo-Plazas P, Luctkar-Flude M. Learner-educator co-creation: A case for authentic assessment in nursing education. *Canadian Journal for the Scholarship of Teaching and Learning*. 2024.
- Villarroel V, Bloxham S, Bruna D, Bruna C, Herrera-Seda C. Authentic assessment: Creating a blueprint for course design. *Assessment & Evaluation in Higher Education*. 2018; 43(5): 840-854.
- Killam LA, Camargo-Plazas P. Revisioning assessment and evaluation in nursing education through Critical Caring Pedagogy: Using authentic examinations to promote critical consciousness. *ANS Adv Nurs Sci*. 2022; 45(1): E15-E30.
- Killam LA, Luctkar-Flude M, Brune S, Camargo-Plazas P. Redefining cheating on written exams: A shift toward authentic assessment to promote Universal Design for Learning in the context of Critical Caring Pedagogy. *ANS Adv Nurs Sci*. 2022; 45(3): E127-E143.
- Maude P, Livesay K, Searby A, McCauley K. Identification of authentic assessment in nursing curricula: An integrative review. *Nurse Educ Pract*. 2021; 52: 103011.
- Aktay S. The usability of images generated by artificial intelligence (AI) in education. *Intl Technol Educ J*. 2022; 6(2): 51-62.
- Pham TD, Karunaratne N, Exintaris B, Liu D, Lay T, Yuriev E, Lim A. The impact of generative AI on health professional education: A systematic review in the context of student learning. *Med Educ*. 2025; 59(12): 1280-1289.
- Canadian Association of Schools of Nursing. Nursing informatics entry-to-practice competencies for registered nurses (Second Edition). 2025.
- Izquierdo-Condoy JS, Arias-Intriago M, Tello-De-la-Torre A, Busch F, Ortiz-Prado E. Generative artificial intelligence in medical education: enhancing critical thinking or undermining cognitive autonomy? *J Med Intern Res*. 2025; 27: e76340.
- Rodger D, Mann SP, Earp B, Savulescu J, Bobier C, Blackshaw BP. Generative AI in healthcare education: How AI literacy gaps could compromise learning and patient safety. *Nurs Educ Pract*. 2025; 87: 104461.
- Buchanan C, Howitt ML, Wilson R, Booth RG, Risling T, Bamford M. Predicted influences of artificial intelligence on nursing education: scoping review. *JMIR Nurs*. 2021; 4(1): e23933.
- Shepherd J, McCarthy A. Advancing nursing practice through artificial intelligence: Unlocking its transformative impact. *Online Journal of Issues in Nursing*. 2025; 30(2): 1-11.
- Ventura-Silva J, Martins MM, Trindade LL, Faria ACA, Pereira S, Zuge SS, et al. Artificial intelligence in the organization of nursing care: A scoping review. *Nurs Rep*. 2024; 14(4): 2733-2745.
- Bittle K, El-Gayar O. Generative AI and academic integrity in higher education: A systematic review and research agenda. *Information*. 2025; 16(4): 296.
- Lee HP, Sarkar A, Tankelevitch L, Drosos I, Rintel S, Banks R, Wilson N. The impact of generative AI on critical thinking: Self-reported reductions in cognitive effort and confidence effects from a survey of knowledge workers. *Proceedings of the 2025 CHI conference on human factors in computing systems*. 2025.
- Nasr NR, Tu CH, Werner J, Bauer T, Yen CJ, Sujo-Montes L. Exploring the impact of generative AI ChatGPT on critical thinking in higher education: Passive AI-directed use or human-AI supported collaboration? *Educ Sci*. 2025; 15(9): 1198.
- El-Banna MM, Sajid MR, Rizvi MR, Sami W, McNelis AM. AI literacy and competency in nursing education: preparing students and faculty members for an AI enabled future-a systematic review and meta-analysis. *Front Med*. 2025; 12: 1681784.
- Gouda ADK, Sorour MS, Ayoub AS, Aboushady RMN, Awad MN, El Swerky FM, et al. Empowering nursing students during AI era: educational strategies for enhancing knowledge and acceptance of artificial intelligence. *BMC Nursing*. 2026; 25: 95.
- Ahmed SK. Artificial intelligence in nursing: Current trends, possibilities and pitfalls. *J M Surg Public Health*. 2024; 3: 100072.
- Qutishat M, Al-Hadidi M, Shakman L, Al-Shdefat A, Al-Ghunaimi AA, Al-Barwani SS. Benefits, challenges, and future recommendations in the integration of artificial intelligence in nursing education: A scoping review. *Teach Learn Nurs*. 2025; 20(4): e1315-e1323.
- College of Nurses of Ontario. Artificial intelligence in nursing practice. 2025.
- College of Nurses of Ontario. New guideline supports nurses in providing virtual care. 2025.
- College of Nurses of Ontario. Council approves revised documentation Practice standard. 2025.
- College of Nurses and Midwives. Updates to practice standards for nurses: Consent, privacy and confidentiality, and documentation. 2025.
- British Columbia College of Nurses and Midwives. Artificial intelligence: Learning resources for nurses and nurse practitioners. 2026.
- Thompson Rivers University AI Showcase. The development of TRU's GenAI guidelines for teaching and learning. 2025.
- Thompson Rivers University AI Education. Gen AI in education: Practical strategies and best practices for integrating generative artificial intelligence in teaching. 2026.
- Concordia University. GenAI Quickstart: Foundations for Faculty.
- Thompson Rivers University Centre for Excellence in Learning and Teaching. TRU Instructional Innovation Grant in Artificial Intelligence in teaching and learning. 2025.

34. Canadian Association of Schools of Nursing. Call For Submissions: Special Edition: The relationship between AI and knowledge in nursing education. 2025.
35. Thompson Rivers University AI Showcase. TRU AI Showcase: Reimagining learning in the age of AI. 2026.
36. Canadian Nursing Informatics Association. Events: Upcoming webinars, conferences, and workshops. 2025.