THE EUROPEAN SOCIETY OF MEDICINE
Medical Research Archives, Volume 13 Issue 9

RESEARCH ARTICLE (Descriptive Case Study in Nursing Education)

Strategic Curriculum Overhaul in a Bachelor of Science in Nursing Program: Integrating Concept-Based Frameworks, Competency-Based Assessment, and AI Innovation

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OPEN ACCESS

PUBLISHED
30 SEPTEMBER 2025

CITATION
McCormick, M., Martin, K., 2025. Strategic Curriculum Overhaul in a Bachelor of Science in Nursing Program: Integrating Concept-Based Frameworks, Competency-Based Assessment, and AI Innovation. Medical Research Archives, [online] 13(9). https://doi.org/10.18103/mra.v13i9.6920

DOI
https://doi.org/10.18103/mra.v13i9.6920

ISSN
2375-1924

ABSTRACT

Background: The complexity of healthcare delivery and concerns about graduate readiness have intensified calls for competency-based nursing education. The American Association of Colleges of Nursing's *The Essentials: Core Competencies for Professional Nursing Education* (2021) and the Next Generation NCLEX (NGN) highlight the need for curricula that foster measurable competencies in clinical judgment, systems thinking, and interprofessional collaboration. A private higher education institution in the Midwest identified gaps in its existing Bachelor of Science in Nursing (BSN) curriculum, prompting a comprehensive redesign to align with these national imperatives.

Methods: A descriptive case study methodology was used to document the curriculum overhaul, drawing from institutional records, faculty retreat notes, and curriculum artifacts. The redesign process occurred in five phases: (1) strategic planning and governance, (2) concept development and curriculum mapping, (3) competency-based assessment design with behavioral indicators, (4) faculty engagement and professional development, and (5) integration of artificial intelligence (AI) to support efficiency and standardization.

Results: Key outcomes included the adoption of a concept-based curriculum framework, development of observable and measurable behavioral indicators, and creation of a Master Curriculum Map linking course-level competencies to program outcomes, AACN Essentials, and the NCLEX blueprint. Faculty engagement was facilitated through retreats, workshops, and communication tools such as newsletters. AI tools, including ChatGPT, supported the drafting of competencies and indicators, improving consistency, while faculty oversight ensured contextual accuracy. The implementation of HelioCampus further enabled real-time alignment of student performance data with program outcomes.

Discussion: The project highlighted that curriculum alignment with the AACN Essentials requires cultural as well as structural change. Faculty engagement, governance structures, and clear behavioral indicators were critical for ensuring shared ownership and practical application of competencies. AI proved valuable as a scaffolding tool, enhancing efficiency and standardization while maintaining the need for professional judgment.

Conclusion: This case study demonstrates how intentional planning, shared governance, and innovation can drive curriculum transformation in nursing education. While limited to a single institution and process-level outcomes, the initiative offers transferable insights for nursing programs seeking scalable strategies to prepare graduates for NGN success and meet evolving healthcare demands.

Introduction

The landscape of nursing education is rapidly evolving, shaped by the increasing complexity of healthcare delivery, the persistent need for practice-ready graduates, and national calls for competency-based preparation of new nurses. Employers and accreditors alike have raised concerns about inconsistencies in graduate readiness, particularly in areas of clinical judgment, systems thinking, and interprofessional collaboration. In response, the American Association of Colleges of Nursing (AACN) released *The Essentials: Core Competencies for Professional Nursing Education* in 2021, a landmark document establishing a national framework for competency-based nursing education. Similarly, the Next Generation NCLEX (NGN) has transformed licensure testing by emphasizing application of knowledge to complex patient scenarios, further underscoring the need for curricula that foster measurable competencies in real-world contexts.

Despite these national imperatives, many nursing programs continue to operate within curricula designed for prior eras of healthcare and education. Programs often face challenges such as curricular redundancy, uneven integration of core concepts, and lack of standardized assessment strategies tied to competencies. These issues threaten the ability of graduates to meet evolving practice expectations and licensure demands.

Research Problem: Within this context, a private higher education institution in the midwest region of the United States identified gaps in its existing Bachelor of Science in Nursing (BSN) curriculum and the 2021 AACN Essentials. The existing curriculum, originally designed during a period of institutional growth and transition from an Associate Degree in Nursing to a Bachelor Degree in Nursing and from 10-week quarters to 16-week semesters, had served students well but revealed opportunities for greater alignment with contemporary standards and practice expectations. Without reform, the program risked perpetuating gaps in competency-based preparation and limiting graduate readiness for the NGN.

Aim and Scope: The aim of this manuscript is to describe the strategic overhaul of this institution's BSN curriculum, focusing on three major areas: (1) alignment with the 2021 AACN Essentials through adoption of a concept-based framework, (2) implementation of competency-based assessments supported by behavioral indicators, and (3) exploration of artificial intelligence (AI) as an innovative tool to support curriculum development. This case study highlights the structured processes, faculty engagement strategies, and technological innovations employed, while also drawing lessons for broader nursing education practice.

By providing a detailed account of one institution's approach, this manuscript contributes to the growing body of knowledge on curriculum transformation in nursing education. It offers practical insights for academic leaders, faculty, and policymakers seeking scalable strategies to align curricula with national standards, prepare graduates for licensure, and address the future needs of healthcare.

Methods

This manuscript employs a descriptive case study analysis to detail the process of overhauling a Bachelor of Science in Nursing (BSN) curriculum at a private higher education institution in the Midwest. The case study method was chosen to provide a structured, practice-based account of curriculum redesign, highlighting processes, strategies, and outcomes that may be transferable to other nursing education programs.

The curriculum overhaul was documented through a comprehensive review of institutional records, including strategic planning materials, committee minutes, faculty retreat notes, curriculum artifacts, faculty engagement tools, and technology integration outputs. These sources provided evidence of decision-making, faculty collaboration, and the development of new curriculum structures such as competencies, behavioral indicators, and concept maps.

Analysis centered on five key phases of the redesign: strategic planning and governance, concept development and curriculum mapping, competency-based assessment with behavioral indicators, faculty engagement and professional development, and the integration of AI and data platforms. Each phase was examined for its rationale, implementation steps, and lessons learned, offering a structured case narrative rather than empirical testing.

Credibility was ensured by relying on official institutional records and consensus documents rather than anecdotal accounts. Drafts of competencies, indicators, and curriculum maps were reviewed and approved through faculty feedback cycles, ensuring the case reflects collective decision-making and institutional accuracy.

Strategic Planning and Committee Formation

The revision process began with the formation of an ad-hoc curriculum mapping committee. This group, composed of faculty and administrators from across campuses, was tasked with aligning the existing BSN curriculum with the 2021 AACN Essentials. Early discussions revealed the inadequacy of retrofitting existing coursework into the new framework. Instead, the decision was made to design a new curriculum grounded in a concept-based model with competency-based assessments.

A comprehensive strategic plan was developed to guide the curriculum revision process. This plan outlined each major step, assigned task ownership, and established a timeline aligned with institutional milestones, Board of Nursing (BON) expectations, and accreditation requirements. To ensure diverse representation and equitable input, the original mapping committee was expanded into a 'Revamp Committee,' comprising 15 faculty and administrators from all five campuses, representing a range of clinical and academic expertise. In alignment with principles of shared governance, proposed curricular revisions and the strategic plan were presented to the full nursing faculty for feedback, discussion, and formal vote. This inclusive process ensured broad support, transparency, and collective ownership of the curricular transformation.

During two, two-day in person working retreats, the Revamp Committee divided into two workgroups: a Concept Development Group, tasked with identifying core concepts, creating concept analyses, and mapping concepts across the curriculum; and a Competency Development Group, responsible for drafting course-level competencies, aligning them with program learning outcomes (PLOs) and the AACN Essentials, and integrating them into course structures.

Use of Artificial Intelligence in Curriculum Development

To enhance efficiency and consistency, the team integrated AI tools, specifically ChatGPT, into the curriculum design process. Faculty engineered prompts that incorporated course descriptions, program outcomes, sub-competency statements, AACN Essentials competencies, and expert-identified key content. Initially used to draft course competency statements, AI prompts were later refined to generate behavioral indicators and ensure comprehensive mapping to both program outcomes and national standards.

Human oversight was critical at every stage. Faculty carefully reviewed and revised AI-generated content to ensure it reflected the institution and program's mission, vision, and educational philosophy. Multiple rounds of prompt refinement improved AI output quality, creating standardized language that facilitated cohesive curriculum documents.

Results

Faculty Development and Engagement

Faculty engagement was a cornerstone of the curriculum redesign. Multiple faculty development initiatives were offered throughout the process to ensure shared understanding of concept-based and competency-based education. Regular workshops (delivered both virtually and in person) focused on topics such as competency-based teaching, assessment development, and rubric design using behavioral indicators.

To maintain transparency and support communication across campuses, the Director of Curriculum and Accreditation launched a monthly newsletter titled Curriculum Compass. Each issue included sections focused on competencies, concepts, faculty collaboration, and implementation updates. Additionally, a special 10-week newsletter series, Shaping Behavioral Indicators Together, focused on each AACN domain and invited faculty input in the development of behavioral indicators. These tools promoted collective ownership and created a shared language for curriculum work.

Assessment Infrastructure and Mapping Tools

The culmination of the redesign was the creation of a comprehensive Master Curriculum Map, which became a central tool for curriculum transparency, alignment, and review. Each course tab in the spreadsheet included course descriptions, course-level competencies aligned with PLOs and AACN

Essentials, concept coverage, behavioral indicators for each competency, and mapping to the NCLEX blueprint.

The college also implemented HelioCampus, a data platform allowing for alignment of student work with both course-level and program-level outcomes. This platform collects rubric data passively during grading, producing real-time assessment dashboards that inform annual program evaluation and continuous improvement efforts.

Discussion

This case study illustrates how deliberate planning, shared governance, and innovation can transform a nursing curriculum to meet evolving national standards. The formation of an ad hoc curriculum mapping committee and its expansion into a multi-campus Revamp Committee created both structure and legitimacy for the initiative. By distributing ownership across faculty and administrators, the process reinforced transparency and accountability, two critical factors in ensuring buy-in for large-scale curricular reform. The use of faculty retreats and structured workgroups reflected best practices in change management, allowing for sustained dialogue and collaborative problem-solving rather than piecemeal adjustments.

A notable innovation was the integration of artificial intelligence (AI) in curriculum development. While AI tools accelerated the drafting of competencies and behavioral indicators, their greatest value was in standardizing language and creating a foundation for faculty refinement. This case reinforces the principle that AI can serve as a scaffolding tool, expediting initial drafts and promoting consistency, while faculty expertise ensures accuracy, alignment, and contextual relevance. This distinction is critical given concerns about AI-generated content introducing bias or misalignment with institutional values.

Beyond operational efficiencies, the project highlighted deeper challenges and opportunities in adopting a competency-based, concept-driven curriculum. One challenge was shifting faculty perspectives from a content-saturation model to an outcomes-focused approach. This required sustained faculty development, ongoing communication, and visible leadership support. Another challenge was balancing national standards with institutional context, ensuring that the AACN Essentials and NGN preparation were integrated without erasing the unique identity and mission of the college.

Lessons Learned and Future Directions

Several important lessons emerged during this large-scale curriculum transformation. First, the presence of a clear strategic plan and strong governance structures proved indispensable. Having a defined roadmap not only aligned the process with external accreditation and regulatory expectations but also minimized resistance by giving faculty a transparent framework for decision-making.

Equally critical was sustained faculty engagement. The initiative demonstrated that engagement is not incidental but foundational to success. Newsletters, workshops, and structured feedback cycles created ongoing opportunities for dialogue, helping faculty feel invested in the outcome rather than subjected to top-down change. This engagement built trust and reinforced collective ownership of the curriculum.

Another lesson centered on the role of behavioral indicators. While competency-based education is often discussed at a theoretical level, it was the development of specific, observable, and measurable indicators that gave the competencies practical utility. These indicators provided a common language for faculty and a mechanism for ensuring consistency across courses and program levels.

Finally, the integration of artificial intelligence (AI) underscored both its potential and its limitations. AI tools accelerated the drafting of competencies and behavioral indicators and promoted standardized language across the curriculum. However, the case also reinforced the necessity of faculty oversight to safeguard accuracy, preserve institutional mission, and contextualize outputs. AI proved most effective when used as a supportive scaffold, enhancing efficiency without diminishing professional judgment.

Limitations

This case represents the experience of a single institution and therefore may not be generalizable across all nursing programs. Outcomes are reported at the process level rather than the student learning level, as full implementation and evaluation are still underway. Additionally, while AI integration was

beneficial, its effectiveness depends heavily on the quality of prompts, faculty oversight, and ongoing evaluation—factors that may differ across institutions.

Implications and Conclusion

This case study demonstrates that aligning nursing curricula with the 2021 AACN Essentials requires more than structural revision. Rather, it demands cultural change within faculty communities and a sustained commitment to shared governance. The systematic development of behavioral indicators emerged as essential for making competencies observable and measurable, offering a model that could be standardized across programs to strengthen graduate readiness. Artificial intelligence showed promise in improving efficiency and curricular coherence, but its use must be carefully bounded to preserve professional judgment and contextual integrity.

Moving forward, this institution will implement the new curriculum in phases, guided by continuous assessment through HelioCampus data and iterative refinement of course content and evaluation strategies. Through strategic planning, faculty collaboration, and thoughtful use of technology, the program has established a sustainable framework that prepares graduates for the Next Generation NCLEX while contributing lessons that may inform curriculum reform efforts across nursing education.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Acknowledgements

None

Funding Statement:

None.

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