Received: 19 Nov. 2024 | Revised: 18 Dec.2024 | Accepted: 19 Dec. 2024 | Published online: 24 Jan.2025

RESEARCH ARTICLE

Contemporary Education and Teaching Research
2025, Vol. 6 (1)11-14
DOI: 10.61360/BoniCETR252017430103

Developing Nursing Faculty to Teach Entry-level Healthcare Informatics Competencies

Ronald Piscotty[*, 1], Erin Kennedy[1], Albany LaGore[1], Kimberly Finch[1], Patricia Cameron[1], & Claudia Grobbel[1]

[1]Oakland University School of Nursing,USA

Abstract: Healthcare informatics is a core competency that nursing students are expected to master by the completion of their undergraduate (UG) degree. The purpose of this article is to describe the design, implementation, and evaluation of a nursing faculty development program initiated in January of 2023 at the Oakland University School of Nursing (OUSON). The faculty development program included having faculty mentees attend 10, one-hour monthly seminars, led by a nationally recognized expert in healthcare informatics (HI). The seminar topics were guided by a specific nursing informatics text and emerging issues in the field, such as the theoretical foundations of HI and the impact of large language models (LLMs) on healthcare provider education. Mentees also engaged in 10, one-hour monthly mentoring sessions, where they identified and evaluated their individual goals with the mentor. The program was successful in its aim and highlights the potential for similar initiatives at other institutions. Faculty mentoring programs offer a practical solution by utilizing faculty with limited formal informatics training and equipping them with the necessary knowledge and skills to teach HICs. Expanding faculty expertise in HI can better prepare students to thrive in the increasingly technology-driven healthcare environment, ultimately improving patient care and advancing nursing practices.

Keywords: competencies; faculty; nursing; development; healthcare informatics

1. Introduction

Healthcare informatics is a core competency that students are expected to master by the completion of their undergraduate (UG) degree.[1] The American Association of Colleges of Nursing (AACN)[1] has proposed that healthcare informatics competencies (HICs) are crucial for nurses to practice safely in a technology-driven environment. Therefore, it is imperative for students to understand that technology serves as a tool and does not replace clinical judgment.

Research has shown positive perceptions of healthcare information technology correlate with increased use of healthcare informatics (HI) systems and reduced healthcare errors.[2] Developing and mentoring existing faculty to teach UG HICs is a feasible and cost-effective solution to ensure quality education when content experts are not readily available. The purpose of this article is to describe the design, implementation, and evaluation of a nursing faculty development program initiated in January of 2023 at the Oakland University School of Nursing (OUSON). This initiative ensures enough faculty members are prepared to teach HICs to UG students.[3]

2. Significance

The OUSON currently requires a HI course for all UG students, serving approximately 600 students annually which translates to about six sections of HI each semester. This requirement necessitates several faculty members to meet the instructional demands of these courses. A review of the current course syllabi indicated students are primarily taught knowledge without adequate context to develop HICs. This gap may reflect faculty

Corresponding Author: Ronald Piscotty
Oakland University School of Nursing,USA
Email: piscotty@oakland.edu

discomfort with teaching and applying the content. The premise is further supported through discussions with OUSON faculty and administration that indicate there is a need for faculty members who are well-trained to teach HICs.

3. Methods

To address this gap, a faculty development program was initiated. A recruitment flyer was emailed to all faculty of the OUSON asking for interest and commitment in completing the program. The program was developed keeping in mind concepts of adult learners and included techniques such as storytelling, asking for examples, and asking questions related to the content for each session. Additionally, the program was implemented to ensure learning conditions such as physical comfort, emotional safety, and active involvement were fostered [4]. Faculty mentees attended 10, one-hour monthly seminars, conducted in person and led by a nationally recognized expert in HI. The seminar topics were guided by a specific nursing informatics text and emerging issues in the field, such as the theoretical foundations of HI and the impact of large language models (LLMs) on healthcare provider education. In addition to the seminars, mentees engaged in 10, one-hour monthly mentoring sessions, where they identified and evaluated their individual goals with the mentor. Each mentee developed a HIC-based project, attended the 2023 Summer Institute in Nursing Informatics Conference, and completed a supervised teaching practicum in HI during the Fall 2023 semester.

4. Evaluation

During the project period, all four mentees (N = 4) participated in the 10 scheduled monthly sessions and successfully developed and implemented their teaching projects. When comparing pre-survey to post-survey data, there was found to be an increase in mentees' self-rated confidence in both understanding and teaching HICs following completion of the program (see Table 1). Mentee feedback regarding the program was overwhelmingly positive, with several highlighting the program's impact on their teaching skills and professional growth.

Table 1. Confidence in Understanding and Teaching HCI Competencies

AACN Essentials Domain 8: Informatics and Healthcare Technologies	**Own Understanding PRE**	**Own Understanding POST**	**Teaching PRE**	**Teaching POST**
Descriptor: Information and communication technologies and informatics processes are used to provide care, gather data, form information to drive decision making, and support professionals as they expand knowledge and wisdom for practice. Informatics processes and technologies are used to manage and improve the delivery of safe, high-quality, and efficient healthcare services in accordance with best practice and professional and regulatory standards.	6.8 (68%)	8.7 (87%)	5.7 (57%)	8.3 (83%)
AACN Essentials Domain 8 Competencies	**Own Understanding PRE**	**Own Understanding POST**	**Teaching PRE**	**Teaching POST**
8.1 Describe the various information and communication technology tools used in the care of patients, communities, and populations.	6.3 (63%)	9 (90%)	5.1 (51%)	8.6 (86%)
8.2 Use information and communication technology to gather data, create information, and generate knowledge.	7.7 (77%)	8.8 (88%)	6.3 (63%)	8.5 (85%)
8.3 Use information and communication technologies and informatics processes to deliver safe nursing care to diverse populations in a variety of settings	6.6 (66%)	8.67 (86.7%)	5.4 (54%)	8 (80%)
8.4 Use information and communication technology to support documentation of care and communication among providers, patients, and all system levels	6.8 (68)	8.56 (85.6%)	5.9 (59%)	8.3 (83%)
8.5 Use information and communication technologies in accordance with ethical, legal, professional, and regulatory standards, and workplace policies in the delivery of care	6.5 (65%)	8.5 (85%)	5.7 (57)	8.2 (82%)

NB: Level of Confidence in own understanding and confidence in teaching measured on 10-point Likert-type scale.
1 = not at all confident; 10 = completely confident

One mentee expressed the importance and

need for this program for both faculty and students at OUSON stating, *"The Nursing Informatics Mentorship Program has met an imperative need for OUSON faculty and students. This program has not only prepared me to teach nursing healthcare informatics competencies but has also provided me with a collaborative faculty community."*

A second mentee reflected on the value of the program, particularly in the context of rapid technological advancements in healthcare, stating:

The NI Faculty Development program has been a very valuable experience for me as a professor at Oakland University School of Nursing. With the rapid changes and adoption of technology in healthcare, there is a great need to understand these changes and their impact on nursing care.

A third mentee commented on the varying levels of AI experience among faculty at OUSON, and how the collaboration contributed to deeper learning, stating:

The Nursing Informatics Mentorship program was very helpful for me as an instructor to learn new content and provided a safe environment for learning. We were able to collaborate with each other as we were learning. We each had different experience levels with AI.

A fourth mentee highlighted the expansion of their HI knowledge and how the program inspired further exploration into the impact of AI in healthcare, stating:

The Nursing Informatics Mentorship program allowed me to expand my knowledge of Healthcare Informatics and inspired me to move into the arena of Artificial Intelligence and how it will impact the healthcare field. This program allowed me to create an AI module for students and a 'Bootcamp' for faculty.

In addition to the qualitative feedback, several tangible outcomes were achieved during the program. Three of the mentees completed a supervised teaching practicum, and two developed and submitted education and training grant proposals to implement projects related to healthcare IT. Four faculty attended the 2023 Summer Institute in Nursing Informatics (SINI) Virtual Conference, and one mentee presented their NI project at the 2024 SINI Virtual Conference. Over the course of the project, faculty teaching informatics at OUSON increased from three to seven, and all UG informatics courses are now under the direction of a course director with nursing and healthcare informatics industry experience and formal education (MS and PhD) both in nursing and HI.

To ensure sustainability a faculty learning community was developed using an e-space on the learning management system platform. Resources that were used throughout the program are available on the e-space. Additionally, the faculty director of the informatics course is responsible for ensuring course content is updated, continue to mentor faculty, and reviewing student and course reviews as part of continuously improving the course.

4.1 Faculty Projects

During the 2023-2024 academic year, four unique faculty projects were developed and implemented, three were designed to incorporate HICs into a course's curriculum, while a fourth was the development of a manuscript. In the community/population health course, the Omaha System was introduced as part of a case study to meet the course requirement of exploring the unique needs of documentation in the public health sector. The Omaha System is a multidisciplinary standardized interface that incorporates documentation of nursing assessment and interventions. Students were presented with a complex case and tasked with using the Omaha System to document and prioritize nursing interventions.

In the maternal infant health course, students were instructed to evaluate perinatal health apps and their ability to provide sound recommendations to patients. After downloading and evaluating three specific perinatal health apps, students completed an online learning module, *MedlinePlus Evaluating Internet Health Information: A Tutorial From the National Library of Medicine*. This educational

tutorial was developed to teach how to effectively and accurately evaluate health information found on the internet. Following completion of the educational tutorial, students reassessed each app with their newly acquired knowledge.

In the informatics course, the *"AI in Health and Nursing Care*" module was developed to help students explore the use of AI tools, such as ChatGPT, in healthcare settings. Students were assigned to watch a recorded lecture titled: *AI: Friend or foe* and read assigned articles on the use of AI in healthcare. Students were then tasked with creating a ChatGPT account, selecting a healthcare topic, and generating an AI-composed essay. Students then analyzed the accuracy of the AI-generated content and reflected on their learning experience.

Lastly, one mentee chose to author a scholarly journal article advocating for the integration of artificial intelligence (AI) in nursing quality improvement initiatives and nursing education. This involved a comprehensive review of existing literature on optimal AI practices within quality improvement frameworks. AI presents a promising solution by enabling expedited data synthesis and facilitating real-time problem identification, but must be tempered with adequate education of nurses to be able to integrate and use these tools in their practice.

5. Discussion/Conclusion

The lack of prepared nursing faculty to teach HIC's is compounded by the nationwide shortage of nursing faculty and coupled with the limited number of nursing faculty trained in HI, presents an urgent problem for schools nationwide.[5] Faculty mentoring programs, such as the one implemented at OUSON, offer a practical solution by utilizing faculty with limited formal informatics training and equipping them with the necessary knowledge and skills to effectively teach HICs. The success of this program highlights the potential for similar initiatives at other institutions. Expanding faculty expertise in HI can better prepare students to thrive in the increasingly technology-driven healthcare environment, ultimately improving patient care and advancing nursing practices.

Conflict of Interest

The authors declare that they have no conflicts of interest to this work.

Acknowledgement

This research was funded by:

The work of this project was generously supported by an Oakland University School of Nursing Oberhauser Academic Award.

References:

American Association of Colleges of Nursing. (2021). *The essentials: Core competencies for professional nursing education.* Retrieved from https://www.aacnnursing.org/Portals/42/AcademicNursing/pdf/Essentials-2021.pdf

Piscotty, R., Kalisch, B., Gracey-Thomas, A., & others. (2015). Electronic nursing care reminders: Implications for nurse leaders. *Journal of Nursing Administration, 45*(5), 239–242. https://doi.org/10.1097/NNA.0000000000000192

Piscotty, R., Kalisch, B., & Gracey-Thomas, A. (2015). Impact of healthcare information technology on nursing practice. *Journal of Nursing Scholarship, 47*(4), 287–293. https://doi.org/10.1111/jnu.12138

Penn, B. (Ed.). (2008). *Mastering the teaching role: A guide for nurse educators. F*A Davis Company.

Forman, T., Armor, D., & Miller, A. (2020). A review of clinical informatics competencies in nursing to inform best practices in education and nurse faculty development. *Nursing Education Perspectives, 41*(1), E3–E7. https://doi.org/10.1097/01.NEP.0000000000000588

How to Cite: Piscotty, R., Jr., Kennedy, E., LaGore, A., Finch, K., Cameron, P., & Grobbel, C. (2025). Developing Nursing Faculty to Teach Entry-level Healthcare Informatics Competencies. *Contemporary Education and Teaching Research, 06*(1), 11-14. https://doi.org/10.61360/BoniCETR252017430103