According to the Quality and Safety Education for Nurses (QSEN) Institute (2018), interprofessional collaboration and informatics are competencies all nurses should meet. As current work environments for nurses are increasingly multidisciplinary, nursing students may have the opportunity to collaborate with other disciplines, but little or no interaction with the development of healthcare informatics. The National Academy of Medicine, the former Institute of Medicine (2018), recommends opportunities to participate in collaborative and interprofessional activities and software engineering provides a unique opportunity to learn the role of informatics in patient care (Gray & Christov, 2017). Information technology is increasingly permeating healthcare—from electronic health records and computers on wheels to smart pumps, various devices that monitor the patient, and even smart phone apps for instant communication and paging. Education that includes some form of technological background is increasingly important to enable nurses to quickly and effectively learn how to operate in a technology-permeated working environment. A deeper understanding of technology and how it is developed could also empower nurses to participate in the building of the devices and the software that they use on a daily basis. This could in turn result in more positive patient outcomes and higher-quality software used in healthcare (Qin et al., 2017). This bridging of the gap between technology professionals who deliver technological solutions and nurses who know what is needed, may remove some of the barriers to utilizing electronic health records by nursing (Houston-Raasikh, 2014).

To better prepare nursing students to use technology and interact with professionals from the tech field, we established a collaboration between a nursing course and a software engineering (SE) course. As part of the nursing curriculum, the nursing students learn about codes for cardiac arrests and how to perform them. Together with their instructors, the nursing students serve as clients for teams of SE students on a course project. The project is to develop an electronic flow sheet that facilitates the documentation of cardiac arrest codes. The project consists of four phases:

* In Phase I, nursing professors provide SE students with background on codes for cardiac arrests and their documentation. SE students elicit the requirements for the code documentation course project, prepare mock-ups to illustrate their ideas for a prototype, and obtain feedback from the nursing professors

* In Phase II, SE students develop a first working version of a software application for documenting codes and demonstrate it to nursing students and professors for feedback and suggestions for modifications

* In Phase III, SE students refine their software applications based on the feedback from the previous phase. At the end of phase III, SE students present their final applications to a jury of nursing students and professors who choose the top two software applications

* In Phase IV, the top 2 applications are used by nursing students during cardiac arrest simulations

To evaluate the collaboration between the nursing and the SE courses, we administered surveys to both the nursing and the SE students. These surveys contained questions on the specific skills students learned through the course project, the value of the project in terms of appreciating interprofessional collaboration, and overall experience with the project. In addition, we also asked the instructors of the nursing course to compare the code sheets produced by nursing students using the software applications and those produced by nursing students using a traditional paper form.

The evaluation results indicate that the collaboration between the nursing and the SE course has been effective in terms of supporting interprofessional education. Both nursing and SE students reported overwhelmingly positive experience with the interdisciplinary project in terms of practicing interprofessional skills as well as learning skills specific to their own disciplines. Nursing instructors reported that, overall, nursing students who used the software application to document cardiac arrest codes produced higher quality code sheets than nursing students who used the paper form. Higher quality code documentation using an electronic system is supported by previous research (Grig et al., 2013; Coffey et al., 2015). The collaboration was deemed feasible in terms of faculty and student workload. Lessons learned include the need to build in more education on documentation of codes with pertinent fields prior to completion/filing of a code as well as the need to add to the current debriefing documentation review prior to filing. Suggestions for improvement for the code app
development include making pertinent fields required prior to filing and to add a medical spell check.

We believe that the collaboration framework we established as well as the lessons we learned could be useful for developing similar course collaborations that support interprofessional education in other institutions. In the future, we would like to institutionalize the collaboration in the nursing and SE curricula and perform further evaluation.

Title:
Interprofessional Nursing Education for Technological Advancement in Cardiac Arrest Documentation

Abstract Describes:
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