

Improving Technology Literacy and Skills Among Minority Nursing Students

The Strategy

A curriculum that incorporates the American Association of Colleges of Nursing (2008) essentials, the Quality and Safety Education for Nurses guidelines (Cronenwett et al., 2007), and the Technology Informatics Guiding Education Reform initiatives (TIGER Informatics Competencies, 2009) should include formative experiences for students in nursing informatics. The challenge of creating a formative experience, as well as the results of a study revealing technology barriers for ethnic minority students in a nursing program (Loftus & Duty, 2010), energized us to develop a goal: a technology-driven solution to improve technology access and literacy among ethnic minority students in our program.

Method

With generous funding from internal sources and institutional review approval, we purchased 50 iTouch™ mobile electronic devices and a site license for the Nursing Central™ mobile application, including *Davis's Drug Guide* (Vallerand & Sanoski, 2012), *Davis's Comprehensive Handbook of Laboratory and Diagnostic Tests* (Van Leeuwen, Poelhuis-Leth, & Bladh, 2011), *Taber's Medical Dictionary* (Venes, 2009), and *Diseases and Disorders: A Nursing Therapeutics Manual* (Sommers, 2011). At the beginning of the semester, as a pretest, minority students in our mentoring program used a classroom computer, researched a topic (e.g., diverticulitis and metronidazole) in 10 minutes, and identified Internet sources they had used. Google™ was the most widely used Web site, followed by Wikipedia, Mayo Clinic, and WebMD®. Faculty reviewed the iTouch features and assisted students with downloading the application. Students then researched the same topics using the nursing application

and were delighted with the ease of use and the quality of the nursing-focused information. During the semester, two drop-in help sessions were offered, but only three students attended. At the end of the semester, students again researched a topic (e.g., pneumonia and levofloxacin) using the iTouch and any sites they had found helpful, noting those sites. Google and Wikipedia usage dropped dramatically, and the drug guide and diseases guide were widely used.

Student Results and Reactions

Students reported using the iTouch and the Nursing Central application at their clinical experience every day (32%) or most days (52%) but less frequently in the classroom. Students rated *Davis's Drug Guide* as their favorite, followed by *Taber's Medical Dictionary*, *Diseases and Disorders: A Nursing Therapeutics Manual*, and finally, *Davis's Comprehensive Handbook of Laboratory and Diagnostic Tests*. Because the site license allowed us to offer the application to other students, faculty, and clinical faculty, we asked minority students if faculty encouraged its use. They reported that 25% of classroom faculty and 30% of clinical faculty never encouraged use of the device or application.

Themes arising from the open-ended questions included quick access to accurate information on medications and nursing terms; the device is easy to use, lightweight, pocket-sized, and does not require an Internet connection; it saves time; it prepares for the nursing role; and more one-on-one training is needed. On the basis of these findings, we met our goal of creating a formative experience for our minority students by using handheld technology to increase students' access to technology and by providing high-quality information sources to improve informatics literacy. We will use the application more widely in the classroom, where students can research drugs and laboratory results to develop real-world skills around safe patient

care. Training sessions for clinical faculty to increase their skill and comfort with mobile technology and its applications are planned. Minute-long consults before class, during which students can ask about problems that would then be addressed in class, could further enhance students' informatics skills.

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