Does DNP Students' Experience with Information Technology Predict Mastery of Informatics Competencies?

Barbara Kupferschmid, PhD, MSN, RN
Co-presenters: Connie Creech, EdD, MSN, RN, ANP-BC; and Marsha Lesley, PhD, MLIS, BSN

Abstract

Problem Statement: Use of information technology to assist and guide nursing practice has increased in recent years, especially since the adoption of the Health Information Technology for Economic and Clinical Health (HITECH) Act. Students enter the Doctor of Nursing Practice (DNP) program with varying levels of informatics experience and different entrance education requirements including post-Baccalaureate and post-Masters degrees. Thus students can enter programs with differing needs related to their experience and educational backgrounds. Understanding students' previous experience would assist the faculty to tailor informatics course content to meet varying student needs. The aim of this study was to evaluate DNP students' prior experience with information technology and to assess whether that experience predicted their ability to master informatics competencies. **Methods**: A retrospective descriptive design was used with a convenience sample of students enrolled in an online informatics course. Data collected included students' self-assessment of experience with information technology, demographic characteristics, and faculty determination of students' mastery of competencies designed to test Informatics knowledge and skills. Students rated their experience with Meaningful Use, utilization of datasets and databases, clinical support systems, and e-Health. Values based on competency scores were assigned as follows: 1 (mastered), 2 (competent), or 3 (did not master). Students' self-assessments of informatics experience in relation to competency mastery were compared using Pearson Chi-Square. Logistic regression was performed to assess the impact of experience and highest degree obtained on competency mastery. P-values less than 0.05 were considered statistically significant. The Institutional Review Board designated the study as exempt. **Results**: Students held BSN degrees (n=44) or MSN degrees (n=11). 91% were female and 9% were male. Students were in the Family Nurse Practitioner (34.5%), Adult Geriatric Acute Care (20%), Psychiatric (14.5%), and Adult Geriatric Primary Care (18.2%) tracks. Analysis revealed that a greater percentage of students with experience in Meaningful Use (MU) (75.9%) mastered the competency focused on an analysis of MU compared to students without experience (38.5%) (p=.004). The strongest predictor for mastering the MU competency was experience (p = .001), after controlling for highest degree obtained. Experience with datasets did not predict mastery of a competency focused on working with spreadsheets (55.6% vs. 67.9%) (p=.059) or databases (81.5% vs. 82.1%) (p=.16). A greater percentage of students with experience in e-health (75.7%) mastered the competency focused on application of e-health resources to the learning needs of a vulnerable patient compared to students without experience (33.3 %) (p=.02). While more students with experience in clinical support systems (83.3%) mastered a competency focused on an application and analysis of clinical support systems in comparison to those without experience (67.7%), the test was not statistically significant. **Significance**: In some areas where students had prior experience with information technology, students were more likely to master competencies focused on those areas. Informatics course content may need to be designed so that students can choose content that reflects their needs based on their experience level. Faculty should consider tailoring the course modules for novice and experienced learners to improve mastery of informatics competencies.