Title:
Nursing Faculty Preferences on Technology Use Based on Experience

Suhasini P. Kotcherlakota, PhD, MSc, MSEd, BSc
College of Nursing, Omaha Division, University of Nebraska Medical Center, Omaha, NE, USA
Patrick Rejda, MSEd, BSc
College of Nursing, University of Nebraska Medical Center, Omaha, NE, USA
Kevin Kupzyk, PhD, MS, BS
University of Nebraska Medical Center, Omaha, NE, USA

Session Title:
Poster Presentations
Slot (superslotted):
PST: Friday, April 8, 2016: 10:00 AM-10:45 AM
Slot (superslotted):
PST: Friday, April 8, 2016: 12:00 PM-1:15 PM
Slot (superslotted):
PST: Friday, April 8, 2016: 2:30 PM-3:15 PM
Slot (superslotted):
PST: Friday, April 8, 2016: 6:00 PM-7:00 PM
Slot (superslotted):
PST: Saturday, April 9, 2016: 7:30 AM-8:30 AM
Slot (superslotted):
PST: Saturday, April 9, 2016: 10:00 AM-10:45 AM
Slot (superslotted):
PST: Saturday, April 9, 2016: 12:00 PM-1:15 PM

Keywords:
Educational Technology Integration, Faculty Experience Versus Technology Preferences and Nursing Faculty

References:
American Association of Colleges of Nursing. (2012). Nursing faculty shortage. Retrieved from www.aacn.nche.edu/media-relations/fact-sheets/nursing-faculty-shortage Blaschke, L. M. (2012). Heutagogy and Lifelong Learning: A Review of Heutagogical Practice and Self-Determined Learning. International Review of Research in Open and Distance Learning, 13 (1), 56-71. Chen, K. Z., Anderson, J., Hannah, E. L., Bauer, C., & Provant-Robishaw, C. (2015). Resolving Bottlenecks: Converting Three High-Enrollment Nursing Courses to an Online Format. The Journal of Nursing Education, 54 (7), 404-8. Dahlstrom, E. & Brooks, D. with a foreword by Oblinger, D. (2014) ECAR Study of Faculty and Information Technology, 2014. Research report. Louisville, CO: ECAR. Available from http://www.educause.edu/ecar Hebda, T., & Calderone, T. (2010). What nurse educators need to know about the TIGER initiative. Nurse Educator, 35(2), 56-60. Johnson, T., Wisniewski, M.A., Kuhlemeyer, G., Isaacs, G., & Krzykowski, J. (2012). Technology adoption in higher education: Overcoming anxiety through faculty bootcamp. Journal of Asynchronous Learning Networks, 12 (1), 63-72. Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2014). NMC Horizon Report: 2014 Higher Education Edition. Austin, Texas: The New Media Consortium. Marzilli, C., Delello, J., Marmion, S., McWhorter, R., Roberts, P., & Marzilli, S. (2014). Faculty Attitudes Towards Integrating Technology and Innovation. International Journal on Integrating Technology in Education, 3 (1), 1-20. National League for Nursing (2015). A VISION FOR The Changing Faculty Role: Preparing students for the technological world of health care. NLN VisionSeries. Retrieved from http://www.nln.org/docs/default-source/about/nln-vision-series-%28position-statements%29/a-vision-for-the-changing-faculty-role-preparing-students-for-the-technological-world-of-health-care.pdf?sfvrsn=0 Talcott, K., O'Donnell, J. M., & Burns, H. K. (2013). Technology and the nurse educator: are you ELITE?, Nurse Educator, 38 (3), 126-131.) Schmitt, T. L.,

Sims-Giddens, S. S., & Booth, R. G. (2012). Social media use in nursing education. Online Journal of Issues in Nursing, 17, 3. Retrieved from http://www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Vol-17-2012/No3-Sept-2012/Social-Media-in-Nursing-Education.html Weimer, M. (2013). Learner-centered teaching: Five key changes to practice. San Francisco: Jossey-Bass. Yedidia, M. J., Chou, J., Brownlee, S., Flynn, L., & Tanner, C. A. (2014). Association of faculty perceptions of work-life with emotional exhaustion and intent to leave academic nursing: report on a national survey of nurse faculty. The Journal of Nursing Education, 53 (10), 569-79.

Abstract Summary:
118 faculty members from our institution participated in the Educause Center for Analysis and research's national studies on faculty technology use across two years. The poster will report our research study findings on nursing faculty preferences for technology use based on years of experience and provides recommendations for integrating technologies.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be able report technology preferences of faculty based on years of experience.	Study results indicate faculty preferences for technology use and differences between faculty technology adoption and years of experience.
The learner will be able to choose from the recommendations provided to improve their technology integration in the curriculum.	Recommendations for positively influencing the process of learning, creativity in teaching, and quality of the learning experience including: Familiarize and acquire basic and necessary technology competencies, rekindle technology integration, participate and engage in faculty development opportunities, collaborate with instructional design and technology personnel, and consider heutagogical strategies.

Abstract Text:

Purpose

The purpose of the study is to describe nurse faculty preferences regarding use of technologies and to examine relationships between their preferences and years of experience.

Background

Students in today's generation are more digitally connected than ever. The rapid evolution of educational technologies is changing and shaping the way students expect to learn and how faculty are expected to teach. Traditionally taught higher education systems are transforming to be more 'learner-centered' systems with students in the center of the learning process (Weimer, 2013). All these emerging trends demand faculty to choose educational technologies relevant to teaching, learning and creative inquiry in higher education (Johnson, Becker, Estrada, & Freeman, 2014). In a recent vision statement, the National League for Nursing (2015) calls for action by nurse educators to "teach with and about" technology for advancing nursing education. This change and shift in the pedagogy may be viewed as an increased burden by faculty in their adoption and use of new educational technologies. Some of the barriers include: viewing technology as a distraction, lack of knowledge, insufficient resources, unreliability of hardware

and software platforms, pressure from administrators and students and using outdated platforms and tools (Marzilli et al., 2014). An emerging crisis factor in nursing colleges is the age of faculty members. According to American Association of Colleges of Nursing (2012), the average age of doctoral and masters prepared nursing faculty is greater than 51years. Schmiit, Sims-Giddens and Booth (2012) attribute the slow adoption of technology to the aging factor and note additional barriers for nursing faculty such as time, risks of policy, privacy violation, cost and lack of familiarity with technology.

Design

The Educause Center for Analysis and Research (ECAR) survey has been used by many institutions to assess student and faculty use of and attitudes towards several types of educational technology. Our institution participated in the 2014 and 2015 studies on faculty and information technology. The faculty and technology surveys for years 2014 and 2015 were used for this analysis.

Setting

Faculty members received an online survey instrument. Faculty are located in five locations across the state.

Participants/Subjects

The sample includes 118 faculty members surveyed across two years. The majority of respondents were full-time faculty members (91%), female (97%), and White (89%); others included Black/African American, Hispanic, or Asian/Pacific Islander. Years of experience ranged from first year as faculty to 42 years (mean = 15.7 years).

Methods

Although there is a longitudinal aspect to this survey, in that 2 years of data collection occurred, the samples were independent, making this a multiple cohort design. In order to test whether technology adoption and use changed from 2014 to 2015, independent groups Mann-Whitney U tests were used to determine if the variable distributions changed across the two years. Non-parametric tests were used due to the non-normal distributions of the variables. To test whether years of experience was related to the variables of interest, Spearman's correlations were examined using the full sample, combined across the two years of data collection.

The variables of interest in this study included questions regarding faculty experience with and attitudes toward several different types of technology, how faculty rate their institution's use of technology and technical support, and their use and attitudes of the learning management system (LMS). Faculty were also asked if they would be more effective instructors if they were better skilled at integrating several different types of technology into their courses. IBM SPSS version 22 software was used for data analysis.

Results/Outcomes

Upon examining changes in technology use over time, no significant changes were observed. However, average experience with all types of technologies covered in the survey was above the midpoint of the scale, mostly in the "good" range (around 4 on the 1-5 scale). The highest rated type of technology was communication technologies, and the lowest was self-publishing. Of the many variables examined, two significant changes were observed. Faculty showed significant gains in taking sufficient measures to keep data about their students secure, but significantly decreased in their attitudes regarding online learning helping students to learn more effectively.

We examined ratings on various methods of using the institution's help desk, such as phone calls, emails, walk-ins, available FAQs, and an overall rating, and did not observe any significant changes. There were no changes in faculty ratings of student preparedness for using technology, in their interest for institutional alerts, or if they would be more effective instructors if they were better skilled in using technology.

We next investigated the relationships between faculty years of experience and the variables of interest in this study. Respondents with more years of faculty experience tended to have higher ratings on their experience with classroom-based (ρ=.32, p=.012), communication (ρ=.57, p<.001), and online or virtual technologies (ρ=.44, p=.012), and more experience with specialized teaching software (ρ=.40, p=.025).

Faculty with more years of experience tended to be *less* interested in online early alerts for suggestions about new academic resources for students (ρ=-.47, p=.011). Of particular interest are the results from the section asking faculty to rate whether they would be more effective instructors if they were better skilled at integrating certain technologies into their courses. Faculty with more years of experience were *less* likely to agree that their instruction would be improved if they were better skilled at integrating the LMS (ρ=-.21, p=.027), E-books (ρ=-.22, p=.023), web-based content (ρ=-.24, p=.012), and lecture capture (ρ=-.20, p=.043). They were, however, more likely to be satisfied with their frequency of software updates (ρ=.40, p=.026), with their training with LMS (ρ=.36, p=.042) and their interactions with students on LMS (ρ=.22, p=.024).

Discussion

Overall, the faculty in our study are making good use of new educational technology. This was already the case in 2014, the first year of this two-year cohort study, so the fact that there were few significant changes observed is not a cause for concern. The most surprising results from this analysis are the negative relationships observed between years of faculty experience and attitudes towards the value of obtaining increased skills for technology integration within the curriculum. Faculty with more years of experience were more likely to disagree that improving their technology knowledge related to using the learning management system, E-books, web-based content, and lecture capture would help them be a better instructor. Newer faculty were more likely to see the value in becoming better skilled at technology integration in their curriculum.

Our study findings related to LMS are somewhat parallel with the national results found in the ECAR report. Majority of faculty surveyed nationally who have less than 10 years of experience used the basic features of LMS and generally agree that better LMS integration, use of e-books, web-based content, and lecture capture would enhance their teaching and learning experience (Dahlstrom & Brooks, 2014). One limitation of this study is that the ECAR survey did not request the faculty members' age, only years of experience. Age and years of experience are certainly not one in the same, as faculty start at many different ages, but age and experience of course should still be highly related. Although the relationship does make intuitive sense, it is interesting to note that those with more experience in teaching are more reluctant to adopt new technologies or strategies into their courses.

Conclusion

In conclusion, we found that newer faculty were more likely than experienced faculty to have positive attitudes and motivation for newer technology use and adoption. The explanation for this is unclear from the current study. Future research studies focused on use, adoption of technology, experience, and age of faculty are needed. We predict that there may be several contributing factors influencing their reluctance to embark on new technologies. Clearly evident are the barriers mentioned earlier that contribute to the problem. Yedidia, Chou, Brownlee, Flynn, & Tanner (2014) discuss overcoming the emotional burden and burnout effects of nursing faculty by offering better information technology support services and retaining their faculty positions for longer times. While we fully support the need for nursing administration to allocate necessary time, resources and incentives for faculty, we suggest faculty

members invest and take personal interest in using new or existing technologies better to positively influence the process of learning, creativity in teaching, and quality of the learning experience. Thus, we offer the following recommendations to be considered by faculty interested in integrating innovative technologies in their instruction:

- Familiarize and acquire basic and necessary technology competencies to advance nursing education and teaching practices (Hebda & Calderone, 2010).
- Rekindle technology integration approaches by auditing or enrolling into nurse education courses or related certificate programs.
- Participate and engage in faculty development opportunities to hone knowledge, skills and abilities for integrating and implementing technologies in your teaching (Talcott, O'Donnell, & Burns, 2013; Johnson et al., 2012).
- Collaborate with Instructional design and technology personnel to design and produce high quality instruction (Chen, Anderson, Hannah, Bauer, & Provant-Robishaw, 2015).
- Consider Heutagogy (self–determined learning) strategies to keep abreast of trending and evidence-based educational practices and embrace life-long learning and teaching using technologies (Blaschke, 2012).