Nurse Faculty Knowledge of Best Practices in Online Pedagogy

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Abstract

The purpose of this cross-sectional, correlational study was to investigate nursing faculty knowledge of best practices in online pedagogy, and to examine the relationship among nursing faculty characteristics and use of best practices. The framework for this study was based on Roger's diffusion of innovation theory. A convenient sample of 154 nursing faculty participated in the study from a total sampling of 824 nursing faculty who teach in accredited nursing programs in New York State. An online survey was used to deliver the survey to study participants.

Nursing faculty reported that they have a moderate knowledge of the approaches and strategies used in the delivery of online pedagogy. There were no relationships between nursing faculty characteristics and best practices. Results from this study can be used in the creation of a faculty development program to assist nursing faculty members in the development and application of best practices for online pedagogy.

Background

Best practices in online pedagogy help to ensure that learners are receiving a high quality education that follows the standards of higher education and professional practice (Mancuso, 2009). The Institute of Medicine (IOM) recommends that nurses achieve higher levels of education to ensure the delivery of safe, patient-centered care across all settings (Institute of Medicine, 2011). Nurses who desire to obtain higher degrees have reported that barriers such as finances, family responsibilities, and increased age have prevented them from returning to school (Kovner, Brewer, Katigbak, Djukic, & Fatehi, 2012). Also mentioned as barriers to the pursuit of a higher degree in nursing were lack of time, lack of confidence, conflicting work schedules, and geographic location (Morganthaler, 2009). The American Association of Colleges of Nursing (AACN) commends the use of online pedagogy in nursing education as an accessible option for the working adult who is a typical student in undergraduate nursing programs (American Association of Colleges of Nursing [AACN], 1999).

The benefits of online education as a mode of delivery have been documented to include increased student motivation (Magnussen, 2008), mastery of learning (Kala, Isaramalai, & Pohthong, 2010; Legg, Adelman, Mueller, & Levitt, 2009), consistent delivery of curriculum (Patterson, Krouse, & Roy, 2012), as well as convenience (Du et al., 2013). Regardless of these advantages the integration of online education as a mode of delivery continues to challenge nursing educators (Kala et al., 2010) even though its use has been advocated for the last two decades.

Theoretical framework

Everett M. Rogers' "Diffusion of Innovation Theory" (Rogers, 2003) was used to guide this study. The core assumptions of innovation theory propose a causal chain between the conditions which will increase or decrease the likelihood that an innovation will be adopted and the adoptees' perception of the innovation (Rogers, 2003). Diffusion of innovation theory concepts allow for exploration of how new information is accepted or rejected by prospective users (Dearing, 2009).

The innovation-decision process is described by Rogers (2003) as, "an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation" (Rogers, 2003, p. 172). According to Rogers (2003) the knowledge stage is the beginning of the innovation-decision process. During this stage an individual learns about the existence of the innovation and begins the process of learning more about the innovation (Sahin, 2006). The main activity of the knowledge stage is cognition. Rogers (2003) also proposes that there are characteristics of an innovation that help to decrease uncertainty for the individual who may be considering adopting them. These characteristics include, (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability and (5) observability. Sahin (2006) reports that innovations which contain all of these characteristics are much more likely to be adopted by faculty members (Sahin, 2006).

The second stage of the innovation-decision process is the persuasion stage. Rogers (2003) describes the individual as "forming a favorable or unfavorable attitude toward an innovation" (Rogers, 2003, p. 174) in the second stage of the process. During the persuasion stage the individual will actively seek out new information about the proposed innovation so that they may generate a perception of the innovation (Rogers, 2003). The main activity in the persuasion stage is affective. The third stage of the innovation-decision process is the decision stage. Rogers (2003) describes the decision stage as, "engaging in activities that lead to a choice to adopt or reject an innovation" (Rogers, 2003, p. 177). Rejection or adoption of an innovation essentially depends on individual perception of the usefulness of the innovation, however, culture may also influence an individual's decision (Rogers, 2003). During the implementation stage an individual "puts an innovation to use" (Rogers, 2003, p. 179). During this stage reinvention also occurs. Reinvention is described by Rogers as, "the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation" (Rogers, 2003, p. 180). The final stage of the process is the confirmation stage which describes that the individual, "seeks to avoid a state of dissonance or to reduce it if it occurs" (Rogers, 2003, p. 189).

The knowledge stage of the diffusion of innovation theory is particularly appropriate for this study as it explains how an individual gains understanding of how a new idea will function. It is necessary to identify the faculty member's level of knowledge of best practices in online pedagogy. This information is necessary for the eventual creation of a faculty development program that will provide information to faculty about best practices in online pedagogy and assist nursing faculty members in the application of best practices in their distance education courses.

Review of the literature

The recent nursing literature is occupied with descriptions of web-based technologies used in nursing education (Billings, 1999; Billings, 2000; Billings, 2007; Du et al., 2013) as well as perceived barriers and benefits in the use of online pedagogy (Adams & Timmins, 2006; Billings, 2007; Billings & Rowles, 2001; Lu, Lin, & Li, 2009; McAllister & Mitchell, 2002; Yu & Yang, 2006), however, there is not enough evidence to support online pedagogy as being more superior to traditional modes of delivery (Bloomfield et al., 2010; Chiu et al., 2009; Lu et al., 2009; Levinson, Weaver, Garside, McGinn, & Norman, 2007). Randomized controlled trials (RCT's) of online pedagogy in the nursing literature focus heavily on its effectiveness as a modality versus traditional methods of instruction on the acquisition of clinical skills (Bloomfield et al., 2010; Chiu et al., 2009; Fernandez Aleman, Carillo de Gea, & Rodriguez Mondejar, 2011; Lu et al., 2009). In the RCT's reviewed, the acquisition and retention of knowledge in handwashing (Bloomfield et al., 2010), assessment skills (Chiu et al., 2009), intramuscular injections (Lu et al., 2009), and medication administration, basic life support, wound care and related others (Fernandez Aleman et al., 2011) were evident. Similarly, they illustrate additional benefits to the use of online pedagogy which include student excitement about learning (Lu et al., 2009), more control over individual learning (Chiu et al., 2009; Levinson et al., 2007; Lu et al., 2009), and higher student satisfaction in the learning process (Bloomfield et al., 2010; Chiu et al., 2009; Fernandez Aleman et al., 2011). Negative discoveries universally describe challenges with technology for both learners and facilitators (Chiu et al., 2009; Lu et al., 2009), lack of human contact and feelings of isolation (Grant & Thornton, 2007; Kala et al., 2010), as well as increased time commitment (Grant & Thornton, 2007; Simonson, Schlosser, & Orellana, 2011).

Several studies link Rogers' diffusion of innovation theory to nursing education, (Starkweather & Kardon-Egren, 2008; Melnyk & Davidson, 2009), as a framework for adoption of innovative pedagogy (Doran et al., 2010), as well as a model for organizational change (Melnyk & Davidson, 2009; Jeanette, Parker, Nadeau, Pelayo, & Cook, 2012).

Purpose of the study

The purpose of this study is to identify faculty knowledge of best practices in online pedagogy. This information is necessary for the eventual creation of a faculty development program that will assist nursing faculty members in the application of best practices in their distance education nursing courses.

Research questions

1. What are faculty member's knowledge of best practices in online pedagogy?
2. Are there differences in the knowledge of best online pedagogical practices among faculty members who have more teaching experience compared to faculty members who have less teaching experience?

Methods

Research design

This study was conducted using a cross-sectional correlational design. This type of design allowed for the examination of relationships between two or more variables at one point in time (Polit & Beck, 2014). Correlational research provides an effective means for describing participant thoughts, opinions, and feelings (Shaugnessey, Zechmeister, & Zechmeister, 2002).

Setting

The setting for this study was the internet. Faculty members from accredited nursing programs in New York State according to the Office of the Professions and the

New York State Education Department (New York State Office of the Professions, 2014) were surveyed. The survey was internet-based and the study participants were able to access the survey from any device with an internet access.

Population and sample

The population for this study were nursing faculty members teaching in accredited nursing programs in New York State. The nursing programs had to be accredited by either the Accreditation Commission for Education in Nursing (formally the National League for Nursing Accrediting Commission; ACEN) or the Commission on Collegiate Nursing Education (CCNE). There are a total of 47 accredited nursing programs in New York State. From these programs, 824 potential participants who met the inclusion criteria were invited to participate in this study. Inclusion criteria for this study required nursing faculty members to be teaching in an accredited program and have experience teaching in the online environment. Teaching experience was defined for this study as having delivered any course content (synchronous, asynchronous, or blended learning) to a nursing student other than the traditional face-to-face format.

Instruments

Demographic and background data

The demographic data questions included age and ethnicity. The background data questionnaire included questions related to characteristics of respondents and characteristics of their faculty role.

Quality Standards Inventory (QSI)

The Quality Standards Inventory (QSI) was a collaborative effort between Egerton and Posey (Egerton & Posey, 2002). It has five subscales; Instruction (7 items), Facilitation (6 items), Interaction (10 items), Self-Direction and Motivation (6 items), Assessment and Feedback (8 items) which are scored on a 4-point Likert scale format that scores from Always (4) to Rarely/Never (1). The reliability of the QSI was validated by Egerton (2007) in her developmental dissertation. The QSI exhibited a high psychometric reliability with an overall Chronbach's alpha score of .94. The inter-reliability of the sub-scale coefficients were: Instruction (*a = .71*), Facilitation (*a = .91*), Interaction (*a = .80*), Self-Direction and Motivation (*a = .87*) and Assessment and Feedback (*a = .85*) which also indicate good reliability of the instrument. In this study the chronbach alpha co-efficient for the QSI was .94. The inter-reliability of the coefficient for each of the subscales was follows: Instruction (α=.79), Facilitation (α=.87), Interaction (α=.79), Self-Direction and Motivation (α=.85), and Assessment and Feedback (α=.81). Permission to use this open access instrument was received from Dr. Emily Egerton.

Results

Response rate

A total of 154 nursing faculty members who teach in accredited nursing programs in New York State participated in this study. A total of 824 surveys were sent via the internet using the Survey Monkey software program. A total of 154 were received for a response rate of 18.7%. Of those 154 responses, 102 (12.4% of the total sample) were included in the data analysis. Fifty-two responses (33.7% of total responses) were excluded from the data analysis because the responses returned had more than 10% missing from the QSI.

Faculty members' knowledge of best practices in online pedagogy

The total mean score of the QSI in this study was 2.32 (SD = .45). The mean scores for each of the subscales were Instruction 2.43 (SD = .50), Facilitation 2.22 (SD = .62), Interaction 2.28 (SD = .44), Self-Direction and Motivation 2.26 (SD = .63) and Assessment and Feedback 2.39 (SD = .46). Results indicate that faculty knowledge of best practices vary equally across the QSI and the five subscales and that participants have a moderate level knowledge of best practices in online pedagogy.

Differences in the knowledge of best practices among faculty members who have more teaching experience compared to faculty members who have less teaching experience.

The average years of teaching experience was 14.75 (SD = 10.40) with a range from 1 to 45 years. A total of 102 participants were included. Group 1 (< or = 17 years of teaching experience) equals one to fifteen years (*n*=65) and Group 2 (>17 years of teaching experience) equals 18-45 years (*n*=37).

The mean score of the QSI in this study was 2.29 (SD = .32), for faculty members who have more teaching experience. The mean score of the QSI in this study was 2.33 (SD= .52), for faculty members who have less teaching experience. To examine the difference between the two groups a *t* test was conducted on QSI by group (faculty members with more teaching experience versus faculty members who have less teaching experience). Results indicated that there is no statistical significance between faculty members who have more teaching experience (2.29 ± .32) compared to faculty members who have less teaching experience (2.33 ± .52), $t(100) = .415$, $p = 0.679$.

Discussion

Faculty members' knowledge of best practices in online pedagogy

The researcher found that faculty knowledge of best practices vary equally across the QSI and the five subscales. The results of this study indicated that faculty members perceive that they have a moderate level of knowledge of the approaches and strategies used in their delivery of online pedagogy. These results support the knowledge stage of Rogers (2003) diffusion of innovation theory which states that individuals can be exposed to an innovation but still lack complete information about the importance of the innovation in question. This type of awareness-knowledge or knowledge that an innovation exists (Rogers, 2003) is the first step in the creation of a faculty development program to assist nursing faculty in the enhancement and application of best practices.

This sample reported an average of 14.75 years of teaching experience spending greater than fifty percent of their time teaching in the online environment. It is interesting to note that regardless of the amount of time spent teaching in the online environment results across the subscales indicate that best practices are used moderately. This finding indicates that there is a need for ongoing faculty development in order for faculty to increase their use of best practices from a moderate level (2.2-3) to a higher level (3.1-4) in order for more active, student-centered instruction to occur.

The literature supports that students are able to create a deeper understanding of information when it is delivered using active, student-centered techniques which further promote student engagement and self-directed learning (Wolff, Wagner, Poznanski, Schiller, & Santen, 2015). The shift to an active, student-centered learning environment places the onus of learning in the hands of the student which encourages student ownership of their learning goals (Stevenson & Gordon, 2014).

The use and effectiveness of online pedagogy as a mode of delivery in nursing education continues to be scrutinized. The recent nursing literature is occupied with descriptions of web-based technologies used in nursing education (Billings, 1999; Billings, 2000; Billings, 2007; Du et al., 2013) as well as perceived barriers and benefits in the use of online pedagogy (Adams & Timmins, 2006; Billings, 2007; Billings & Rowles, 2001; Lu, Lin, & Li, 2009; McAllister & Mitchell, 2002; Yu & Yang, 2006). However, there is not enough evidence to support online pedagogy as being more superior to traditional modes of delivery (Bloomfield et al., 2010; Chiu et al., 2009; Lu et al., 2009; Levinson, Weaver, Garside, McGinn, & Norman, 2007).

Differences in the knowledge of best practices among faculty members who have more teaching experience compared to faculty members who have less teaching experience.

This study found no statistical difference in the QSI scores between faculty members who have more teaching experience compared to faculty members who have less experience. The literature supports that implementing technological change without a guide for adoption will interfere with the implementation process (Doyle, Garrett, & Currie, 2014). Faculty members who lack knowledge of the online environment are not able to create the supportive milieu that is required in the absence of a physical presence (Mancuso, 2009). Faculty perceive their teaching expertise at the novice and advanced beginner level of instruction regardless of the number of years of experience teaching in a traditional format (Ali et al., 2005; Johnson, 2008).

Limitations

Methodological limitations to this study include the use of a convenient sample in a cross-sectional study. Nursing faculty members in New York State may have teaching characteristics that are not representative of the population of all nursing faculty members. This limits the ability to generalize the study findings to nursing faculty members in other states.

Implications for education

Assessment of faculty knowledge of online pedagogy is the initial step in the creation of a faculty development program to assist nursing faculty members in the development and application of best practices. Faculty require knowledge, confidence, and skills in the online arena in order to enhance their teaching expertise, regardless of their years of teaching in the traditional format. The promotion and implementation of high quality practices in online pedagogy will improve knowledge and the likelihood of a deeper understanding and eventual implementation of the best practices. Faculty development is paramount as the success or failure of an innovation depends on the individuals responsible for implementing the change (Ali et al., 2005). Evidence to support faculty knowledge of best practices prior to a faculty development program allows for tailoring of content based on the strengths and weaknesses of program participants. The results of this study can be used as a framework for the development of specific strategies to increase faculty use of best online pedagogical practices from a moderate level (2.2 - 3) to a higher level (3.1 - 4). More student-centered instruction when faculty employ the best online pedagogical practices should lead to more active learning for nursing students.

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