High Level of Emotional Intelligence is Related to High Level of Online Teaching Self-Efficacy among Academic Nurse Educators

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Abstract

This study examined the relationship between emotional intelligence (EI) and online teaching self-efficacy among 115 academic nurse educators who teach online (totally, blended, or both). The sample was randomly drawn from the list of nursing schools accredited by Commission on Collegiate Nursing Education (CCNE) with baccalaureate, master's and/or doctoral programs. The hypothesis tested states "Academic nurse educators who teach online and who report higher levels of EI would also report greater online teaching self-efficacy." Results showed a significant moderate relationship ($r=0.446$, $p< .01$) between EI and online teaching self-efficacy. The coefficient of determination R^2 was 0.199, which indicates that about 20% of the variation in online teaching self-efficacy can be explained by EI contribution. The hypothesis was supported. Results also indicated that online teaching self-efficacy was positively related to duration of being an academic nurse educator ($r = 0.212$, $p<0.05$) and duration of teaching online ($r = 0.203$, $p< 0.05$). Further, there was no significant difference between the different age groups regarding EI and online teaching self-efficacy. Similarly, there was no significant difference among university degrees attained of participants regarding EI and online teaching self-efficacy. The Implications for enhancing EI and online teaching self-efficacy are discussed.

Keywords: Emotional intelligence, Online teaching self-efficacy, Academic nurse educators

1. Introduction

1.1 Background

Online education allowed learning to transcend borders, made information accessible to people worldwide, and contributed to the development of new pedagogical models (Allen, Seaman, Poulin, & Straut, 2016). Currently, many leaders perceive online education to be important for their institutions long-term goal, a method to save costs, and a strategy to improve learning in higher education (University at Buffalo Center for Educational Innovation). As a result of the rapid advances in technology and online education, academic nurse educators have transitioned from the traditional classroom instruction to the online teaching and learning environment. Effectiveness of online teaching and learning needs skills that fit the online environment. These skills include emotional intelligence (EI), and online teaching self-efficacy.

According to Salovey and Mayer (1990), EI is the ability to recognize, monitor, and regulate one's and others' emotions to facilitate interaction. In this study, EI as skill-based competencies is used as a foundation for integrating social and emotional skills in online teaching and learning. Mayer, Salovey, and Caruso (2004) proposed that EI skills include four competencies (1) perceptions of emotions in self and others, (2) use of emotions to make cognitive reasoning, (3) understanding of emotions to identify the why and how of emotions generated, and (4) management of emotions in self and others. Traditionally in the physical environment, basic skills in people with high EI are self-awareness, self-management, and effective communication (Goleman, 1998). Although communication in online teaching and learning takes place in the form of students' writings and faculty's responses, the four EI skill-based competencies can be applied to online teaching. For example, a faculty member who has high EI would be able to re-direct students' responses in a professional manner. Not only a faculty would be aware of her emotions

generated in online communication, but also students' emotions would be recognized by faculty. An educator who has high EI would be able to do thorough assessment and analysis of students' writings and empathize with their emotions and act appropriately. The triggers of emotions would be identified to make students aware of their emotions in the online discussion of situations characterized by conflicts. On the other hand, a faculty low in EI would not be able to recognize negative emotions that are directly stated or implied in students' writings. Consequently, faculty would not be able to take the right decision, which may contribute to improper management of online teaching and learning. Well-planned written communication by educators can produce comfortable, positive emotions in students that enhance academic learning. Whereas, poor written communication by educators can evoke negative emotions in students and disrupt learning. In other words, consistent use of EI competencies can play an important role in providing a safe, caring online environment and enhance academic learning (Salovey & Mayer, 1990). Therefore, the authors of this study are including EI as a skill in the context of online teaching and learning.

In addition to the EI skill-based competencies in online teaching, one's ability to teach online successfully depends upon their teaching self-efficacy. One's confidence in performing a task informs the likelihood of task success (Bandura, 1997). Bandura proposes that self-efficacy is an individual's confidence in their capabilities to organize and execute actions required to accomplish goals. Self-efficacy beliefs are the outcomes of the cognitive processes of the individual's emotional and psychological thoughts (Bandura, 1997). Mayer et al. (2004) stated that awareness of one's positive emotions contributes to self- motivation, increases in self-confidence, and facilitates interaction with other people. Applying Bandura's theory and the EI skill-based competencies to online teaching and learning, nurse educators who teach online with confidence and can recognize their emotions and emotions in students' writings will be more likely to be successful in online teaching. Professional efficiency and confidence in one's abilities to appraise, regulate, and utilize approaches in situations are major skills of people with high EI and self-efficacy (Salovey & Mayer, 1990; Bandura, 1997). In other words, EI and self-efficacy are intertwined and complementary constructs. This study is examining the link between EI and online teaching self-efficacy.

1.2 Literature Review

Most EI studies in education have been reported in the literature within the context of face-to-face instruction. Dev, Nair, and Dwivedi (2016) found that university instructors who have excellent and very good instructional performance reported higher EI than instructors who have satisfactory and unsatisfactory instructional performance. Emotional intelligence was examined with clinical teaching effectiveness in 47 nursing faculty (Allen, Ploeg, & Kaasalainen, 2012). Results indicated a significant correlation between EI and clinical teaching effectiveness ($r = 0.599$, $p < 0.01$). A qualitative case study research of 10 faculty teaching in the department of telematics education at South Africa University examined how EI facilitated the learning of new electronic technology in online learning (Kruger, & Bliignaut, 2013). Participants' narratives supported a connection between EI and coping with the new electronic learning. A New Zealand study examined the link between EI and nursing education using 15 subjects in three separate focus groups (Wilson & Carryer, 2008). Specifically, the study sought to explore nurse educators' perspectives regarding the challenges they face when they assess the development of emotional competence in baccalaureate nursing students. Results indicated that personal and social competency combined characterizes the development of emotional growth in nursing. Personal competency included self-awareness and having regard for oneself and others and continuously working on emotional awareness to identify how to react to others. Social competency included the ability to work with others' needs and re-direct one's social energy to resolve conflicts in relationship (Wilson & Carryer, 2008). Emotional competence emerged in this study validate the emotional and social aspects of EI as identified by Salovey and Mayer (1990). In a study of occupational stress among 91 nursing faculty in Egypt, the authors found that stress was negatively correlated with EI ($r = - 0.438$, $p < 0.001$) and self-efficacy ($r = - 0.291$, $p < 0.005$) (El-Sayed, El-Zeiny, & Adeyemo, 2014).

In a literature review article, Sutton and Wheately (2003) reported that teachers with high self-efficacy successfully maintain conduct of the learning environment, identify goals, make the effort to reach the identifiable goals, are open to new ideas and debatable discussion and influence students' growth academically, developmentally, and emotionally. Similar to EI studies, most self-efficacy studies were conducted in face-to-face instruction among high school teachers, pre-service teachers, and student teachers. Kumar and Devi (2016) found a significant correlation ($r = 0.612$, $p < 0.01$) between EI and occupational self-efficacy among high school teachers. Similarly, Amirian and Behshad (2016) found a significant correlation between EI and self-efficacy ($r = 0.67$, $p < 0.001$) among 70 Iranian high school teachers. Also, years of teaching experience was related to EI ($r = 0.32$, $p < 0.001$). In a sample of 119 physical education high school teachers, EI was positively correlated with teachers self-efficacy ($r = 0.28$, $p < 0.001$) (Mouton, Hansenne, Delcour, & Cloes, 2013). In a study of pre-service teachers in some Nigerian universities, EI and teachers self-efficacy combined predicted teachers' effectiveness (Adeyemo & Agokei, 2014). Among 100

student teachers from a college in Northern Israel, teachers self-efficacy was related to EI in regulation and utilization of emotions ($r= 0.49$, $p< 0.01$) (Walter & Marcel, 2013).

Self-efficacy of 91 faculty teaching online in different disciplines including sciences, arts and humanities, and social behavior was examined (Horvitz, Beach, & Anderson, 2015). Results showed that online teaching self-efficacy was significantly correlated with the number of semesters taught online ($r = 0.30$, $p<0.001$). Also, female instructors significantly reported higher self-efficacy in using online strategies than male instructors ($p< 0.01$). However, in an international qualitative study of self-efficacy of 54 Australians and Europeans faculty who were teaching online in different disciplines, participants rated selection of technological resources as their least self-efficacious area while virtual interaction, online course alignment, and unit content migration were rated as their highest self-efficacious areas (Northcote, Gosselin, Reynaud, Kilgour, Anderson, 2015). Online teaching efficacy of nursing faculty was also examined among 140 nurse educators using the Michigan Nurse Educator Sense of Efficacy for Online teaching (MNESEOT) tool (Robinia & Anderson, 2010). Results showed that high online teaching self-efficacy was correlated with the duration of teaching online, with at least teaching three online courses ($r = 0.309$, $p< 0.01$).

In summary of the literature, self-efficacy and EI appear to be compliment constructs. People with high self-efficacy have many similar skills as people with high EI. These include the likelihood to make the effort to assess and evaluate an encounter, self-validating one's confidence in understanding the emotions of self and others, optimism and motivation to solve conflicts, and willingness to persist in their effort to attain their goals. Studies of self-efficacy in faculty teaching online are limited and focused only on one variable, self-efficacy. Similarly, studies of EI in the context of online teaching are few. To our knowledge, no study was found that examined the relationship between EI and online teaching self-efficacy in academic nursing faculty who teach online.

1.3 The Purpose of the Study

The purpose of the study was to investigate the relationship between EI and online teaching self-efficacy among academic nurse educators.

1.4 Hypothesis

The hypothesis states, "Academic nurse educators who teach online, and who report higher levels of emotional intelligence would also report greater online teaching self-efficacy."

2. Method

2.1 Design and Sample

A cross sectional design was used in this study. A convenience sample of academic nursing faculty who teach online was drawn from the list of nursing schools accredited by Commission on Collegiate Nursing Education (CCNE), with baccalaureate, master's and/or doctoral programs. The list of CCNE schools has more than 700 schools. For the purpose of this study, 300 administrators of nursing schools were randomly selected and electronically sent the study questionnaires. Each administrator was asked to electronically forward the study questionnaires to faculty in their institutions who teach total online courses, blended, or both. One hundred and fifteen surveys were correctly completed and included in the analysis which constitutes a 38% response rate.

2.2 Data Collection

The Institutional Review Board of the investigators approved the study before data collection. Qualtrics, a survey software, was used to send the electronic surveys to the 300 administrators with a request to electronically send the questionnaires to faculty members who teach online in their institutions. The research package included a letter of information to participants, informed consent, the EI measure, the Online Teaching Self-efficacy Scale (OTSES), and a demographic data form.

2.3 Instruments

Emotional intelligence was measured by Schutte et al. tool (1998). The tool consists of 33 items to which participants respond on a 5-point Likert scale that ranges from "strongly disagree" as 1 to "strongly agree" as 5. The 33- items - scale represents all components of EI conceptualized by Salovey and Mayer (1990). Cronbach's alpha for the tool for the 33 items was 0.90. Cronbach's alpha in this study is 0.918. Demographic data collected included duration of being an academic nursing faculty, duration of teaching online in any of the three methods (total, blended, or both), age, gender, and highest degree attained.

Online Teaching Self-efficacy scale (OTSES) was measured by a modified General Self-Efficacy scale (Schwarzer & Jerusalem, 1995). The General Self-Efficacy Scale (GSES) consists of ten statements constructed on a 4-point

Likert scale that ranges from "Not at all true" as 1 to "Exactly true" as 4. The tool assesses general perceived self-efficacy. Cronbacch's alphas reported by the authors of the tool (GSES) ranged between 0.76 and 0.90. Validity of the tool was ascertained by its significant correlation with emotion, optimism, and work satisfaction. Its negative correlation was found for depression, stress, health complaints, burnout, and anxiety (Schwarzer & Jerusalem, 1995). The modified tool, Online Teaching Self-Efficacy scale (OTSES), included the same ten items, but added to each item one of the two phrases, "in online teaching and learning" or "in the online environment". For example, in the original tool (GSES) a statement says, "I can always manage difficult problems if I try hard enough" and in the modified tool, that statement says, "I can always manage to solve difficult problems in online teaching and learning if I try hard enough." Cronbach's alpha in this study is 0.867.

2.4 Data Analysis

The IBM SPSS Statistics version 24.0 was used to analyze the data. Descriptive statistics, including frequencies, percentages, means, and standard deviations were computed. Pearson's correlation analysis was used to examine the relationship among the continuous variables. One-way ANOVA was used to examine the difference in self-efficacy and EI among the different age groups and university degrees attained.

3. Results

Descriptive results of the study participants of gender, age, academic degrees attained, experience as academic nurse educator, experience in online teaching, online teaching self-efficacy, and EI appear in Table 1.

Table 1. Descriptive Statistics of the Study Variables

Variable	**M (SD)**	**n (%)**
Gender, N= 115		
Females		108 (93.9)
Males		7 (6.1)
Age, N=115		
31-40 years		10 (8.7)
41-50 years		24 (20.9)
51-60 years		47 (40.9)
Above 60 years		34 (29.6)
Degrees attained, N= 115		
Master's		34 (29.6)
PhD/EdD		53 (46.1)
DNS		1 (.9)
DNP		27 (23.5)
Duration of being an academic nurse faculty, N=114, 1 missing	13.81 years (10.37)	
Duration of teaching online, N=113, 2 missing	7.40 years (5.15)	
Online teaching self-efficacy, N=114, 4-point Likert scale	3.55 (0.37)	
EI, N=115, 5-point Likert scale	4.16 (0.36)	

Table 1 shows that the majority of participants were female, with more than one-third in the age group of 51 – 60 years old. Forty-six percent reported the degree of PhD/EdD, with a mean of 14 years as an academic nurse educator and seven years teaching online. Participants reported a high mean on EI and a high mean on online teaching self-efficacy. High EI mean indicates that participants perceived themselves to be intelligent in emotions awareness

in themselves and others, as well as utilized, and managed emotions in themselves and others. High online teaching self-efficacy mean indicates that participants perceived themselves to be confident in online teaching.

The study hypothesis "Academic nurse educators who teach online and who report higher levels of emotional intelligence would also report greater online teaching self-efficacy" was tested by examining the correlation between EI and online teaching self-efficacy. Data were surveyed for errors and the sample of 115 for the two variables was large. Also, examination of the histogram and scatter-plot of the relationship graph showed adequate normality.

Graph of Relationship

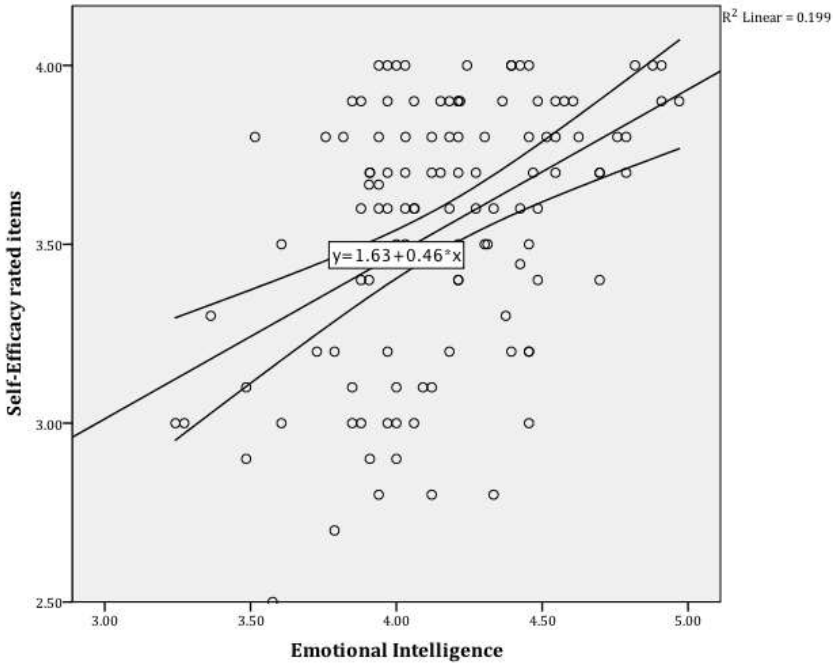

Figure 1. The Graph of Relationship between EI and Online Teaching Self-efficacy

Results from the Graph of Relationship shows there was a significant moderate relationship ($r = 0.446$, $p<.01$) between EI and online teaching self-efficacy. The coefficient of determination R^2 was 0.199, which indicates that about 20% of the variation in online teaching self-efficacy can be explained by considering EI contribution. This significant correlation indicates as EI increases, so too does online teaching self-efficacy, and vice versa. High scores on EI would mean high scores on online teaching self-efficacy are more likely. The study hypothesis was supported.

Pearson's correlations among the continuous variables of the study appear in Table 2.

Table 2. Correlation Coefficients among the Study Variables

	Online Teaching Self-efficacy	Emotional intelligence
Online teaching self-efficacy		0.446**
Duration of being an academic nurse faculty	0.212*	0.119
Duration of teaching online	0.203*	0.008

Significant at **P <0.01, Significant at *P <0.05 Table 2 shows that online teaching self-efficacy was positively correlated with duration of being an academic nurse educator ($r = 0.212$, $p <.05$) and duration of teaching online ($r = 0.203$, $p <0.05$). This relationship indicates that participants who have greater years of experience as educators and as online teachers tended to have greater online teaching self-efficacy than those with less years of experience as educators and as online teachers.

One-way ANOVA was used to examine difference in age groups regarding online teaching self-efficacy and EI (Table 3 and Table 4).

Table 3. Descriptive Statistics of Age Groups for Online Teaching Self-efficacy and EI

Variable	Age groups	N	Mean (M)	SD
Online teaching self-efficacy	31-50	34	3.49	0.36
	51-60	47	3.58	0.39
	Above 60	34	3.56	0.35
Emotional intelligence	31-50	34	4.18	0.40
	51-60	47	4.20	0.34
	Above 60	34	4.10	0.33

Table 3 shows the three age groups, their Ms and SDs for the two variables, online teaching self-efficacy and EI. The first two age groups, 31-40 and 41-50 reported in the demographics were combined into one group (31-50) and included in the ANOVA. As can be seen from table 3, there are lots of similarities between the values of the Ms and SDs for all three age groups regarding the two variables.

Table 4. ANOVA for Age Groups for Online Teaching Self-Efficacy and Emotional Intelligence

Variable/Source	SS	df	MS	F	P
Online teaching self-efficacy				0.616	0.542
Between groups	0.168	2	0.084		
Within groups	15.167	111	0.137		
Total	15.336	113			
Emotional intelligence				0.872	0.421
Between groups	0.223	2	0.111		
Within groups	14.302	112	0.128		
Total	14.525	114			

Table 4 shows that the difference between age means is not significant for either EI or online teaching self-efficacy.

One-way ANOVA was also used to examine difference in university degrees attained by the online teaching self-efficacy and then by EI (table 5 and Table 6).

Table 5. Descriptive Statistics of University Degrees Attained Regarding Online Teaching Self-efficacy and EI

Variable	Degrees	N	Mean (M)	SD
Online teaching self-efficacy	Master's	34	3.49	0.34
	PhD/EdD	53	3.59	0.36
	DNP/DNS	28	3.54	0.42
Emotional intelligence	Master's	34	4.23	0.40
	PhD/EdD	53	4.10	0.33
	DNP/DNS	28	4.20	0.34

The degrees of DNS (1) and DNP (27) were combined together into one group (28) and included in the analysis. As shown in Table 5, there are lots of similarities between the means and SDs values for the different university degrees for the two variables.

Table 6. ANOVA for University Degrees Attained by Online teaching Self-efficacy and EI

Variable/Source	SS	df	MS	F	P
Online teaching self-efficacy				0.846	0.432
Between groups	0.230	2	0.115		
Within groups	15.106	111	0.136		
Total	15.336	113			
Emotional intelligence				1.608	0.205
Between groups	0.406	2	0.203		
Within groups	14.120	112	0.126		
Total	14.526	114			

As shown in Table 6, the difference between the means for university degrees was not significant for either online teaching self-efficacy or EI.

4. Discussion

This study examined the relationship between EI and online teaching self-efficacy in academic nurse educators. It was hypothesized that there would be a significant relationship between EI and online teaching self-efficacy. Results supported the hypothesis and provided empirical support to the theoretical link between these two constructs. The significant correlation found between EI and online teaching self-efficacy is congruent with other previous studies conducted in face-to-face instruction (Kumar and Devi, 2016; Amirian and Behshad, 2016; Mouton et al., 2013; Adeyemo and Agokei, 2014; Walter and Marcel, 2013).

In the online learning environment, nurse faculty with higher self-efficacy beliefs and EI are empowered to teach effectively and create a positive learning environment for their students. Effective teaching capabilities in the online environment could enhance the rapport between student and faculty who do not have face-to-face interaction. This support for the study hypothesis can be utilized to design intervention programs aiming at developing EI skills of educators which would consequently enhance their teaching self-efficacy and yield effective teaching. Training on social and emotional skills in academic nurse educators who teach online can be attained through programs based upon the skill-based EI model of Salovey and Mayer (1990). Training can be integrated through continuing education programs or periodical workshops taken for credits that are grounded in psychological and/or educational theory. EI training can help nurse educators increase their own awareness of how emotions contribute to their responses to students' online posts and how to recognize emotions in students' writings and use appropriate strategies to address them.

Online teaching self-efficacy was related to duration of being an academic nurse educator and duration of teaching online. Participant educators of this study were seasoned faculty with an average of 14 years of teaching experience. The positive impact of years of experience as faculty and duration of teaching online are congruent with previous studies that supported a significant correlation between self-efficacy and number of semesters taught online, with at least teaching three online courses (Amirian and Behshad, 2016; Horvitz et al., 2015; Robinia & Anderson, 2010). The more experience educators have with online teaching, the more they will be effective educators in online teaching and learning. Neither self-efficacy beliefs nor EI were significantly different by the age groups of participants. Previous studies (Robinia & Anderson, 2010; Allen et al., 2012) also found that age is not significantly related to educator's self- efficacy beliefs or to EI. Years of experience as an educator and duration of teaching online are more important than age in enhancing one's teaching efficacy beliefs. Likewise, highest degree attained was not significantly different by EI or online teaching self-efficacy. This lack of significance implies that having a higher university degree is not an indicator of having high EI or high online teaching self-efficacy.

Building a productive online learning environment for students depends upon educators' efficacy beliefs in teaching and having high EI. Nurse administrators interested in increasing their faculty online teaching self-efficacy need to encourage online teaching experience. Incentives to promote online teaching may include release time for developing online courses and ensuring faculty access to in-service trainings about enhancing their skills in the use of the

technology and the development of their EI. Use of mentors as a means of faculty development for self-efficacy and EI with online teaching is another recommendation.

Although the sample of the study was drawn from a national list of accredited schools and has adequate number of participants for the number of variables examined, there are limitations of this research. The sample lacked diversity since the majority was women. Ethnicity as a demographic variable was not included. The self-report of participants may represents bias due to personal comfort with online teaching. The cross sectional design with correlational relationship is another limitation. Lack of details about online courses and teachers' preparation are other limitations. Future research in this area needs to employ randomized, experimental approach, with repeated measures to examine the effectiveness of intervention on self-efficacy beliefs and EI and how these two constructs influence students' learning outcomes. Replicating this study using a diverse sample in gender and ethnicity would also strengthen the findings.

Future research may need to employ other methods of data collection such as interview with educators teaching online, analysis of the discussion narratives between students and educators, video recording of educational conversation with students in case of conflicts and negative emotions. Also, students could evaluate emotional skills of educators and comparing students' evaluations with that of the educators' perspectives.

5. Conclusions

Results indicate that academic nurse educators who teach online and who reported higher level of EI also showed greater online teaching self-efficacy. Training to promote nurse educators EI should also include strategies to improve their online teaching self-efficacy. Also, addressing all aspects of the online teaching and learning environment may have positive influence on increasing their online teaching self-efficacy which in turn may improve teaching effectiveness.

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