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Creating Voice in School Nurses Through Increasing Self-efficacy

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Final Project Committee:

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Creating Voice in School Nurses Through Increasing Self-efficacy

Executive Summary

Creating voice in school nurses is essential to implement and promote health care in schools. Increasing self-efficacy, the knowledge, practice and internal belief of the nurse that he or she is an expert, creates voice and thus, the ability to assist students and families navigate various concerns and health issues. Therefore, the purpose of this project was to increase self-efficacy by providing school nurses with an interactive educational module that focused on social modeling and persuasion, responses to stress reaction experiences and attainment and application of evidence based practice, all skills of self-efficacy.

The interactive educational model was presented to 99 school nurses attending a scheduled professional day event. The module included examples, data points, tips and video examples of articulating the role and practice of school nursing followed by a simulation of a one-minute presentation articulating the value of the role and practice of school nursing. This interactive activity provided social modeling and persuasion, practice in response to stress reaction and attainment and application of evidence based practice. Data was collected using a pre and post survey. An ANOVA was used for analysis. The results of the study (n=79) showed an increase in self-efficacy both in the large effect size and a p value of 0.00 The participants' increase in self-efficacy in the articulation of the role and practice of school nursing created the opportunity for each school nurse to create his or her own voice in order to provide health care for children in schools.

Introduction

School nurses practice autonomously in relative isolation and many times are the only health care professional for students and their families. In addition, many school nurses do not communicate expertise and self-efficacy (Buresh & Gordon, 2013). Indeed, access barriers to evidence-based practice (EBP) information, including information on self-efficacy itself exists within the practice of school nursing. These factors contribute to the inability of school nurses to reflect self-efficacy in practice (Vessey & the Founding Oversight Board Members of MASNRN, 2007; Adams, 2009). Due to lack of self-efficacy school nurses often communicate by quoting agency policy or utilizing authoritarian direction rather than articulating EBP information that demonstrates nursing knowledge and expertise.

Background Significance of Problem

Critically important to school nursing practice is a broad knowledge level of pediatric health and school systems and the ability to confidently communicate evidenced based practice. Quality health care in schools requires knowledge of the educational system and EBP related to a myriad of health conditions present in students who attend school. The school nurse's self-efficacy creates the ability to communicate EBP information, build programs, educate students and families, and provide safe and effective care (Fisher, 2006; Quelly, 2014; Rosen, Ashwood, & Richardson, 2016). Increasing self-efficacy, the knowledge, practice and internal belief of the nurse that she is an expert, creates voice and thus, the ability to assist students and families navigate various concerns and health issues. Accordingly, the purpose of this DNP Project was to create voice in school nurses through increasing self-efficacy utilizing an interactive education module.

A review of the literature was completed in CINAHL, Medline and Cochrane databases for 2013-2018 using the search terms: self-efficacy, teaching, education, communication, voice, intervention, nurse, and school nurse (Appendix A). Search terms included communication, communication skills and talk simultaneously with the term voice. The review provided research questions in four relational categories: self-efficacy and nursing practice, education and increase in self-efficacy, methods of instruction and increase in self-efficacy and education to increase self-efficacy related to voice.

Four main themes of self-efficacy were identified as characteristics for intervention programs to improve clinical decision-making in pediatric nurses: professional communications, management of care, altruism and proficiency (Alavi, Bahrami, Zargham-Boroujeni, & Yousefy, 2015, p. 157). Chio and Kim (2015) documented the influence of self-efficacy and pediatric nurses' decision-making patterns, suggesting intervention programs focusing on these variables might improve clinical decision-making in pediatric nurses. Specific education and focus group intervention for school nurses (Jordan, McKay, & Woods, 2017; Alavi et al., 2015) showed effectiveness of an education intervention with school nurses increasing knowledge, confidence, attitude, and self-efficacy with the identification and use of protective interventions with children at risk of maltreatment. A ten article literature review (Quelly, 2014) of school nurse childhood obesity prevention (COP) practices suggested variations in COP practices might be explained by differences in self-efficacy, perceived benefits, and perceived barriers.

Creating voice by increasing self-efficacy in school nurses is accomplished through the individual and professional development of nurses. Bandura (1994, 1997) noted that self-efficacy can be taught through mastery experience, vicarious experience through social models, social persuasion and reduced stress reactions related to perception and interpretation of emotional and

physical reactions as well as behavioral change through observation, imitation and modeling. Observation, and subsequently imitation and modeling, of other school nurses' practice on the job is limited by its isolated nature. It was therefore necessary to explore other methods to teach self-efficacy.

Didactic methods, both on-line and in person, have been used in education aimed at increasing self-efficacy. Amin and Fattough (2017) implemented a lecture and interactive lab that increased pharmaceutical students' self-efficacy in evaluating pharmaceutical brochures. A pilot continuing education program on asthma used on-line modules that demonstrated significant improvement in self-efficacy related to asthma care (Cicutto et al., 2017). On-line education aimed at increasing nurses' knowledge of bullying (Thompson & George, 2016) and smoking cessation (Rosvall & Carlson, 2017) resulted in increased self-efficacy in those specific topic areas. Of these studies, only Rosvall & Carlson (2017) reported findings related to increased self-efficacy in communication with patients.

Non-traditional methods of teaching have become more common as a teaching method and have been used effectively to increase nurse self-efficacy in multiple studies. Simulation as a teaching method increased self-efficacy for emergency department disaster management (Jonson, Pettersson, Rybing, Nilsson, & Prytz, 2017), orientation of nursing faculty (Crocetti, 2014), nursing students' communication and physical care (Dunn, Osborne, & Link, 2014) and communication skills (Ammentorp, Sabroe, Kofoed, & Mainz, 2007). Several studies showed an increase in self-efficacy using simulation as compared to didactic methods for palliative care communication (Brown et al., 2018), communication in discharge planning (Hsu, Chang, & Hsieh, 2015) and communication related to myocardial infarction (Hsu, Huang, & Hsieh, 2014). Azizzadeh, Heidarzadeh, Kazemi, Jahani, & Afeshari (2016) reported increased self-efficacy

when both didactic and simulation methods were used to teach cardiopulmonary resuscitation as compared to simulation alone. A systematic review of research literacy of nurses suggests interactive or activity-based learning was effective in improving research self-efficacy (Hines, Ramsbotham, & Coyer, 2015). Amin & Fattouh (2017), Brown et al. (2018), Hines et al.(2015), and Hsu et al. (2015) all included an interactive component in the educational method resulting in increased self-efficacy.

The literature review identified the relationship between increased self-efficacy and the terms voice, talk or communication. Alaviet al. (2015) identified professional communication as an attribute of self-efficacy in pediatric nurses. In several studies reporting increased self-efficacy in voice, communication skills were the focus of the intervention (Ammentorp et al., 2007; Brown et al., 2018; Hsu et al., 2014; Hsu et al., 2015). Dunn et al. (2014) and Rosvall & Carlson (2017) cited increased communication self-efficacy as a result of education for CPR and smoking cessation.

Recognizing the importance of observation, modeling and imitation in teaching self-efficacy (Bandura, 1977) and the lack of opportunities to practice this in the daily work of school nurses pointed to the use of simulation as an educational method to increase self-efficacy in school nurses in a professional development course. Adding an interactive component to the intervention allowed the opportunity to observe, model, imitate and give feedback to other school nurses participating in the course with the goal of creating voice by increasing self-efficacy.

Project Implementation

Project Scaffolding

Bandura's self-efficacy theory of behavioral change (1977) created a language defining self-efficacy. He related the concepts of self-efficacy to the concepts of human accomplishment, performance and personal well-being, the assumption of world function relational to self-beliefs and the ability to teach individuals to change self-beliefs. Bandura's grand theory (1977, 1994), described a conceptual road map of the development of self-efficacy throughout the lifespan and in the workplace and outlines steps to creating self-efficacy: mastery experience, vicarious experience through social models, social persuasion and reduced stress reactions related to perception and interpretation of emotional and physical reactions.

Two of Bandura's components for increasing self-efficacy, vicarious experience through social modeling and social persuasion, are difficult to accomplish in the workplace where the school nurse is the only health care provider and has little opportunity to observe other school nurses. Implementation of expert practice is strongly related to valuing EBP and the knowledge to do so (Melnik & Fineout-Overholt, 2015). The literature showed that evidence based practice education and utilization by school nurses is also difficult (Yonkaitis, 2017) affecting mastery experience. A lack of social modeling, social persuasion and mastery combined with isolated practice limited the possibility of reducing stress reactions and created a void for increasing self-efficacy.

Appreciative Inquiry (AI) utilized the concepts of self-efficacy of positive beliefs in ability, success and mastery, to create a process for change based on areas of strength. AI, as an energizing model, supplies practical application allowing participants to guide movement and creates positive innovation. Rather than identifying and emphasizing problems, AI allowed

discovery and valuing of strengths, positive experiences and vision to direct meaningful change. AI provides a process to envision a shared goal and inspiration to act (Carter et al., 2005). In addition, AI provided a framework of cooperative collaboration by clinicians themselves through a process of definition, discovery, dreams, design and destiny allowing the clinicians to implement a change process and focus owned by them.

How then to provide the setting and opportunity for increasing self-efficacy in school nurses? “Successful efficacy builders do more than convey positive appraisals. In addition to raising people's beliefs in their capabilities, they structure situations for them in ways that bring success and avoid placing people in situations prematurely where they are likely to fail often.” (Bandura, 1994, p. 3). Using a combination of Bandura’s principles of self-efficacy and AI’s concepts of building on strengths for positive solutions, this DNP student developed an educational module for school nurses that included the following objectives:

Objectives:

1. Provide an interactive education module on articulating school nurses role and practice.
2. Provide an opportunity for school nurses that focuses on experiential social modeling and persuasion, responses of stress reaction experiences and attainment and application of evidence-based practice, all skills of self-efficacy.
3. Measure the impact of the intervention on self-efficacy in articulating school nurse role and practice utilizing an evaluation tool developed with the General Self-efficacy Scale (GSE) as a base (Schwarzer & Jerusalem, 1995) with additional questions adapted from the Self-efficacy Scale for Clinical Leaders (CNLSES) (Gilmartin &

Nokes, 2015) and the SE-12, a 12 question scale measuring self-efficacy in clinical communication skills (Axboe, Christensen, Kofoed, & Ammentorp, 2016).

Budget

The budget consisted of costs for the presentation and for presentation of results (Appendix F). It was assumed that the cost for the venue and promotion of the event was an indirect cost born by the hosting organization. Direct costs included supplies such as paper, printing, activity and office supplies, and OASN contact hour application.

Financial Implications

As in most health settings, school nurses are at the forefront of safety for students, “patients”, and keeping students safe, healthy and ready to learn reduces both financial and resource costs to schools districts. Buresh and Gordan (2013) cited this as well as the constant threat of replacing higher-paid, more educated nursing professionals with cheaper, less-skilled staff due to lack of understanding the connection of nursing and quality care. By creating a safe environment, which includes safe physical and social/emotional health care, school nurses decrease absence rates created by the top four barriers to school attendance: chronic disease (asthma), lack of health/dental care, caring for siblings or other family members and unmet basic needs that include transportation, housing, food, clothing, trauma and other related issues (Office of Superintendent of Public Instruction, 2016; National Association of School Nurses [NASN], 2015; Pennington & Delaney, 2008). School nurses as experts in addressing the four barriers to school attendance save time and money for school districts (Baisch, Lundeen, & Murphy, 2011; Wang et al., 2014). Students who are absent, whether physically or mentally due to undiagnosed, untreated or unregulated chronic disease cannot reach full potential and struggle mightily to become highly educated. Utilizing the Whole School, Whole Child, Whole Community

approach, school nurses provide a positive influence on student health and therefore academic success (ASCD & Centers for Disease Control and Prevention [CDC], 2014; Lewallen, Hunt, Potts-Datema, Zaza, & Giles, 2015). Research indicates that professional school nurses are more effective than unlicensed personnel in keeping students in school (Pennington & Delaney, 2008) and that school districts receive a two dollars return in services for every dollar spent on a school nurse (Wang et al., 2014).

School nurses and school-based health care partnerships can greatly impact health care and health care reimbursements in the school and community population ("School-based health care," 2018). Providing preventative and chronic health care and assistance in accessing health care insurance and reimbursement programs can improve the complex delivery of care model currently in effect. School nurses provide the link between health care needs of students in school and health care services outside of the school district, often finding ways to provide health care at no cost to the school district or student.

The ability of the school nurse to articulate the role and practice of school nursing, bolstered with data and stories to support facts and talking points, is essential to informing legislators, administrators, board of education members, state education departments, parents students and even other nurses and nursing education entities of the importance and value of providing financing for school nurses. Creating voice in school nurses through increasing self-efficacy provides the skill set and opportunity: for school nurses to make their work understood, to communicate how their work actually saves school districts money and contributes to the vision and mission of education. In addition, creating voice in school nurses gives them the self-efficacy needed to be role models and mentors who become women and men who know their own voices and are unafraid to use them (Obama, 2018).

Method, Data Collection and Analysis

An adapted pre and post self-efficacy survey (Appendix B) developed with the GSE as a base (Schwarzer & Jerusalem, 1995) with additional questions adapted from the CNLSES (Gilmartin & Nokes, 2015) and the SE-12, a self-efficacy in clinical communication skills scale (Axboe et al., 2016) measured quantitative data about school nurse self-efficacy before and after the educational module. Additional demographic information of age grouped by generation, years of experience as a Registered Nurse (RN) and Licensed School Nurse (LSN), and highest degree completed the survey.

Data collection utilized a pre-post survey measuring self-efficacy before and after the interactive educational intervention (Appendix C). An ANOVA test was used for analysis. Statistical measures of success were defined as a significant outcome for the one tailed, directional research hypothesis; the post-test scores were significantly higher than the pre-test scores.

Implementation of the program occurred in the fall of 2018. School nurses participating in the professional development event were given two envelopes containing a randomly numbered pre-survey in one, and the same numbered post-survey in the other along with written information (Appendix D) about the purpose, risks and benefits of the study before the education module was presented with instructions that completion of the survey was completely voluntary.

Each attendee was instructed to place the completed or incomplete pre-survey in the first envelope and place the envelope in collection container at the back of the room if he or she chose to do so. At the completion of the presentation, each attendee was instructed to place the complete or incomplete post-survey in the second envelope and place the envelope in the same container if he or she chose to do so. The presenter left the room during the time allotted to

complete and collect both the pre and post survey. A statement was made that completion and submission of both the pre and post survey implied consent to participate in the study. Each attendee, regardless of participation of the study was eligible to receive continuing education contact hours after submitting the evaluation required by OASN.

Target population

The target population was a convenience sample of 79 school nurses who completed the pre-post survey and participated in the interactive educational module during a professional development day. Recruitment involved a school district's health services department agreement to allow the presentation of the educational module during a professional development event and verbal and written statements to all prospective attendees providing information about the project at the professional development event. Inclusion criteria included being a school nurse, participating in the educational module and completing the pre-post survey.

This DNP student utilized a pre-planned professional development event day to provide the opportunity to implement an in-person professional training module without incurring costs of venue rental, marketing and registration. It also provided a convenience sample of school nurses. A date, time and place was secured as well as IRB approval from both Otterbein University and Columbus City Schools.

Educational Module

The interactive education module was a face-to-face presentation to a group of school nurses during a pre-scheduled professional development event. The module (Appendix E) addressed the key components of Bandura's theory of creating self-efficacy (1994): videos of school nurses articulating practice role and scope provided vicarious experience and interactive and simulation activities provided social modeling, vicarious experience, mastery experience and

an opportunity to role-play to reduce stress reactions in real life situations. Key messages defining the role and practice of school nursing and data statements supporting the value of school nurses were written on cue cards and provided to participants. The first part of the module included a short presentation on nursing voice, self-efficacy and presentation skills followed by videos of other school nurses articulating the role and practice of school nursing. Participants were then divided into small groups of 4-6 individuals and directed to create and present to each other a one minute presentation articulating the role and practice of school nursing using knowledge gained and information from the cue cards. Group members were encouraged to give each other constructive feedback after each presentation. Review and recommendations from this Doctor of Nursing Practice (DNP) student's project committee, experts in the role of the school nurse, were sought for module development and implementation. An application was submitted for continuing education contact hours through the Ohio Association of School Nurses (OASN) for all nurses attending the event.

An evaluation tool was developed as the second project component. Utilizing the GSE as a base, (Schwarzer & Jerusalem, 1995) topic and clinical specific questions were added as suggested by the GSE authors to measure change. Additional questions were selected and adapted from the Self-Efficacy Scale for Clinical Leaders (CNLSES) (Gilmartin & Nokes, 2015) and the SE-12, a self-efficacy in clinical communication skills scale (Axboe, Christensen, Kofoed, & Ammentorp, 2016). An expert panel was used to develop the adapted self-efficacy tool.

Results

Ninety-nine school nurses from Columbus City Schools attended a professional development day in the fall of 2018 and participated in the 90 minute interactive educational

module to increase self-efficacy in articulating the role and practice of school nursing. Of those 99, 79 school nurses completed and submitted both the pre and post survey for analysis.

Demographic data was collected in ordinal form for age by generation, years of Registered Nurse (RN) experience, years of Licensed School Nurse (LSN) experience and highest degree (Appendix B). The majority of participants, n=45, were Generation X, 34 were Baby Boomers and only 8 were Millennials (see Table 1). Participants were highly experienced with 53 school nurses having 21 or more years as an RN, only one participant with less than three years of RN experience (see Table 2) and 48 with more than 11 years as a LSN (see Table 3). Fifty participants had a bachelor's degree as highest degree and 37 have a master's degree (see Table 4). A stepwise regression analysis using ANOVA showed no statistical correlation for age, RN experience, LSN experience or highest degree (see Table 5).

Table 1
Age Distribution of Participants (N = 87)
Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	22-37 years of age	8	9.2	9.2	9.2
	38-53 years of age	45	51.7	51.7	60.9
	54-72 years of age	34	39.1	39.1	100.0
	Total	87	100.0	100.0	

Table 2
RN Experience

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	<3 years	1	1.1	1.1	1.1
	3-10 years	11	12.6	12.6	13.8
	11-20 years	22	25.3	25.3	39.1
	>21 years	53	60.9	60.9	100.0
	Total	87	100.0	100.0	

Table 3

LSN Experience

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	<3 years	14	16.1	16.3	16.3
	3-10 years	24	27.6	27.9	44.2
	11-20 years	36	41.4	41.9	86.0
	>21 years	12	13.8	14.0	100.0
	Total	86	98.9	100.0	
Missing	System	1	1.1		
Total		87	100.0		

Table 4

Degree

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	Bachelor's	50	57.5	57.5	57.5
	Master's	37	42.5	42.5	100.0
Total		87	100.0	100.0	

Table 5

Stepwise Regression of Demographics on Posttest Results

ANOVA^a

Model		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1 (Age)	Regression	218.987	1	218.987	2.158	.145^b
	Residual	8623.684	85	101.455		
	Total	8842.671	86			
2 (RNExp)	Regression	228.042	2	114.021	1.112	.334^c
	Residual	8614.629	84	102.555		
	Total	8842.671	86			
3 (Age, RNExp, LSNExp)	Regression	229.320	3	76.440	.737	.533^d
	Residual	8613.351	83	103.775		
	Total	8842.671	86			

Table 5 (continued)

ANOVA^a

Model		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
4 (Age, RNExp, LSNEp, Degree)	Regression	315.865	4	78.966	.759	.555^e
	Residual	8526.806	82	103.985		
	Total	8842.671	86			

a. Dependent Variable: TIPOST

b. Predictors: (Constant), Age

c. Predictors: (Constant), Age, RNExp

d. Predictors: (Constant), Age, RNExp, LSNEp

e. Predictors: (Constant), Age, RNExp, LSNEp, Degree

Table 6

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		<i>Type III Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>	<i>Partial Eta Squared</i>	<i>Noncent. Parameter</i>	<i>Observed Power^a</i>
factor1	Sphericity	2467.351	1	2467.351	54.171	.000	.451	54.171	1.000
	Assumed								
	Greenhouse-Geisser	2467.351	1.000	2467.351	54.171	.000	.451	54.171	1.000
	Huynh-Feldt	2467.351	1.000	2467.351	54.171	.000	.451	54.171	1.000
	Lower-bound	2467.351	1.000	2467.351	54.171	.000	.451	54.171	1.000
Error (factor1)	Sphericity	3006.149	66	45.548					
	Assumed								
	Greenhouse-Geisser	3006.149	66.000	45.548					
	Huynh-Feldt	3006.149	66.000	45.548					
	Lower-bound	3006.149	66.000	45.548					

a. Computed using alpha = .05

Pre and post test data was analyzed using ANOVA (See Table 6). A Greenhouse-Geisser measurement was used due to the significance of Maunchley's test of sphericity. Effect size was

found to be large with a Partial Eta Squared of 0.451. A p value of 0.000 provides evidence of statistical significance.

Discussion

The large effect size and statistical significance of the educational intervention point to several factors included in this project: validity of identified barriers and deficits, efficacy of Bandura's theory and use of an interactive educational program with simulation as an intervention. A SWOT analysis and the literature identified the lack of self-efficacy in articulation of the role and practice of school nursing and EBP educational opportunities for school nurses. Rarely, if ever, does professional development for school nurses include information, demonstration and the opportunity to practice self-efficacy skills or EBP in a secure setting. Specifically addressing the identified deficits and providing research outcome data to support the value of school nurse practice paved the way for significant growth and learning of the participants.

The efficacy of Bandura's theory and his assumption that self-efficacy can be taught by providing opportunities for individuals to learn through mastery experience, vicarious experience through social models, social persuasion and reduced stress reactions has been widely used as a basis for social change (Bandura, 1977; Butts & Rich, 2015). Direct application of the components of self-efficacy as the focus of the educational module once again proved Bandura's theory to increase self-efficacy both in the results of a large effect size and statistical significance.

The significant results of this project add to the body of literature supporting simulation and interaction as significant educational methods to increase self-efficacy in communication for health care providers. The opportunity to develop a one minute speech and present it in a small

group of peers created a safe and engaging environment of interaction. The presentation itself simulated an event where the school nurse would articulate the role and practice of school nursing, supported with key messages, data and stories to school administrators, school board members, the community or media. Together the two educational methods created a significant increase in self-efficacy.

The results of this project create the potential for application to school nurses across the country and possible alteration to apply to all nurses. The concept of creating voice in school nurses has been a significant focus of the NASN. The current President of NASN, Nina Fekaris, initiated a book study for the Board of Directors to set the national agenda on school nurse voice using *From Silence to Voice: What Nurses Know and Must Communicate to the Public* (Buresh & Gordon, 2013). The book itself relates the lack of nursing voice. A new article "Breaking the Glass Cage: The Power of Data, Courage, and Voice" (Maughan, 2019) and subsequent podcast (Galemore, 2019) were recently released on the NASN website.

The lack of significant correlation of any of the demographic data: generational age, experience as either a RN or LSN, and highest educational degree supports the premise of a deficit in professional education for school nurses in both self-efficacy in the articulation of role and practice. Indeed any self-efficacy in this regard could be explained by on-the-job experience or natural aptitude rather than education. It is interesting to note that this project did not address or measure confidence in LSN practice but in articulation of the role and practice. Having had the opportunity to learn self-efficacy in this regard resulted in an increase of self-efficacy no matter any demographic variables.

Limitations

Limitations of this project included being offered in one Midwestern school district during one professional development event making it less generalizable to all school nurses. The survey based on the GSE (Schwarzer & Jerusalem, 1995) and supplemented with items adapted from CNLSES (Gilmartin & Nokes, 2015) and the SE-12 (Axboe et al., 2016) resulted in a Cronbach's alpha of 0.96 but has not been published in peer-reviewed article. A Cronbach's alpha of 0.96 could suggest some redundancy of items. The survey was, however, evaluated and approved by a panel of experts. One of the school nurses attending the event approached this DNP student after the time limit to submit the post-survey and conveyed concern about feeling less efficacious after learning "how it was supposed to be done". This was not borne out in the data analysis, but could have effected participation in submitting the post-survey.

The data results indicated an increase in self-efficacy immediately after the educational module but did not measure the longer term effects of the module nor an actual change in behavior of the participants in real life situations. Further research would be needed to measure the self-efficacy at later intervals and whether or not the increase in self-efficacy caused a change in behavior.

Strengths

A strength of the study was the ability to provide a solution to address each of the barriers to teaching and creating self-efficacy in articulation of the role and practice of school nursing through Bandura's components of self-efficacy (Bandura, 1994). Using media videos and peer interaction to provide social modeling and persuasion that is rare in the isolated practice of school nurses, tangible data points of EBP and talking points cue cards, markers and laminated blank cue cards for developing a speech, egg-timers for measuring length of presentations, and a

small group setting within a larger context provided mastery experience that was fun for participants reducing stress reactions. The strength of Bandura's theory is a strength of the study-structuring the opportunity for successful outcomes.

An additional strength of the study was the large sample size, $n=79$. Contributing to this was the convenience of an event for a large group of school nurses planned and supported by the school district on a paid work day. Utilizing a hard copy, paper/pencil pre and post survey with designated a time for completion and a small window of time for submission immediately before and after the educational module contributed to the 88% submission rate. Although data entry took additional time for this DNP student, it was worth the large sample size. While technology aids research in many ways, sometimes old methods merit consideration.

Conclusion

Self-efficacy in articulating the role and practice of school nursing increased for participants in this study evidenced by the large effect size and statistical significance allowing each school nurse participant to create his or her voice. The results of this study support Bandura's theory of self-efficacy and that self-efficacy can be learned using mastery experience, vicarious experience through social models, social persuasion and reduced stress reactions. Additionally, the results of this study support the literature identifying simulation and interactive educational modules as effective teaching methods to affect change in self-efficacy in health care professionals. The lack of statistical correlation of the increase in self-efficacy to age, experience as either a RN or LSN and highest degree supports the premise that teaching self-efficacy to school nurses has been a deficit in professional development and education that can be remedied by an interactive educational module.

Summary

The intent of this project was to develop an interactive educational module to teach articulation of the role and practice of school nursing and measure the effect of the module on self-efficacy of school nurses and thus the ability to assist students and families navigate various concerns and health issues. The hard copy pre and post survey with a Cronbach's alpha of 0.96 was completed by school nurses (n=79) at a professional education event. Data analysis, using Greenhouse-Geisser showed a large effect size- partial Eta (or η^2) of 0.451 and a high statistical significance of $p=0.000$ and therefore an increase in self-efficacy after participation in the intervention.

Bandura's theory of teaching self-efficacy in order to effect change has been well documented over several decades (Butts & Rich, 2015). The literature supports using simulation and interaction as an effective teaching method to increase self-efficacy in health care professionals. Buresh and Gordon (2013) propose that teaching nurses how to confidently articulate what nurses actually do creates voice- to the public, to other health care professionals and to each other. Use of Bandura's theory as a framework for the study and his tenants as content focus, coupled with an interactive educational module using simulation and providing the opportunity for mastery experience. The results of this study provide an example of how educational module can create voice through increasing self-efficacy and advance the practice of school nursing in providing health care to children in school.

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Appendix A
Self Efficacy (SE) and Voice Evidence Synthesis Table

	EducationMethod /Outcome	Comparison of methods	Didactic	Simulation	Interactive component	SE related to voice/communication	SE related to task	SE increased
Studies								
Alavi, A. et al. (2015)		No				x		
Amin, M.. & Fattouh, Y. (2017)		No			x		x	x
Ammentorp, J. et al. (2007)*		No		x		x		x
Azzideh, F. et al. (2016)		Yes, simulation vs. didactic online and simulation	x	x			x	x
Brown, C. et al. (2016)		Yes, simulation vs. didactic	x	x	x	x		x
Cicutto, L. et al. (2017)		No	x				x	x
Choi, M. & Kim, J. (2015)		No					x	
Crocetti, J. (2014)		No		x			x	x
Dunn, K. et		No		x		x	x	x

al. (2014)								
Hines, S. et al. (2015)		Yes-systematic review			x		x	x
Jonson, C. et al. (2017)		No		x			x	x
Jordan, K. et al. (2017)		No	x		x		x	x
Hsu, L.-L. et al. (2015)		Yes-case-based vs. scenario based simulation	x	x	x	x		x
Hsu, L.-L. et al. (2014)		Yes- case-based vs. scenario-based simulation	x	x		x		x
Rosvall, A., & Carlson, E. (2017)		No	x			x	x	x
Thompson, R. & George, L. (2016)		No	x				x	x
Zhu, B. et al. (2016)		No				x		n/a

* 2007 Randomized trial that measured communication skills for doctors and nurses in relation to self-efficacy

Appendix B- Survey

Please indicate your age:

	< 22	22-37	38-53	54-72	> 72
Your age					

Please indicate your years of experience as a registered nurse

	< 3	3-10	11-20	21+
Years RN				

Please indicate your years of experience as a Licensed School Nurse

	< 3	3-10	11-20	21+
Years LSN				

Please indicate your highest degree of education

	Bachelor's	Master's	Doctorate
Highest Degree			

How confident are you that you can:

	Not Confident	Somewhat Confident	Moderately Confident	Very Confident
1. Communicate the value of your work?				
2. Structure a conversation to address questions and concerns of your audience?				
3. Use a story to illustrate the practice and role of school nursing?				
4. Identify data to support the value of the school nurse?				
5. Explain evidence-based practice?				
6. Identify data to support evidence-based practice?				
7. Communicate a comprehensive plan for your school or district?				
8. Identify population-level health problems?				
9. Communicate policies, procedures and guidelines to other staff, parents or agencies using evidence-based practice?				
10. Project yourself as an expert?				

How confident are you that you can:

	Not Confident	Somewhat Confident	Moderately Confident	Very Confident
11. Use evidence to challenge existing practices?				
12. Advocate for students using evidence based practice?				
13. Articulate school nursing role and practice in 3 sentences or less?				
14. Advocate for responsible and appropriate use of evidence based practice interventions?				
15. Serve as primary resource to the school community regarding health and wellness?				
16. Convey accurate information in appropriate formats for students and families?				
17. Use communication as a strategy to achieve nursing outcomes?				
18. Communicate to manage change and address conflict?				
19. Participate in formal consultations or informal discussions to address issues of school nursing practice?				
20. Share educational findings, experiences and ideas with health and education colleagues?				
21. Communicate student and school community outcomes of the school health program to the community, administrators and key stakeholders?				
22. Interpret the role of the school nurse and school health services program needs to the school and community?				

Appendix C-Data Collection Data Analysis II

Descriptive Variable Data

Variable Name	LSN	Age	YrsRN	YrsLSN	HighED	LSE-1
Description	Licensed School Nurse at Professional Development Event who complete survey	Age at time of intervention	Years of experience as an RN	Years of experience as a Licensed School Nurse	Highest Educational Degree	Level of self-efficacy- "How confident are you that you can...?"
Data Source	Pre-Survey					
Level of Measurement	Nominal	Nominal	Continuous	Continuous	Nominal	Ordinal
Possible Range of Values	N/A	A=<22 B=22-37 C=38-53 D=54-72 E=>72	0-50	0-50	A=Bachelor's Degree B=Master's Degree C=Doctorate Degree	A=Not confident B=Somewhat confident C=Moderately confident D=Very confident
Timeframe for Collection	11/6/18					
Statistical Test	Central Tendency					ANOVA

Outcome Variable Data

Variable Name	LSE-2	SEAge	SEYrsRN	SEYrsLSN	SEHighED
Description	Level of self-efficacy- "How confident are you that you can...?" 12 question survey	LSE post-intervention distribution by age	LSE post-intervention distribution by years of experience as an RN	LSE post-intervention distribution by years of experience as a LSN	LSE post-intervention distribution by highest degree of education
Data Source	Post Survey				
Level of Measurement	Ordinal				
Possible Range of Values	A=Not confident B=Somewhat confident C=Moderately confident D=Very confident	A=<22 B=22-37 C=38-53 D=54-72 E=>72	A=<3 B=3-10 C=10-20 D=20+	A=<3 B=3-10 C=10-20 D=20+	A=Bachelor's Degree B=Master's Degree C=Doctorate Degree
Timeframe for Collection	11/6/18				
Statistical Test	ANOVA to compare the results by age, experience and level of education				

Appendix D-Consent

Title of Project: Creating Voice in School Nurses by Increasing Self-efficacy

Investigator Name: **Kate King MS, BSN, RN, LSN**

E-Mail Contact Information: (king1@otterbein.edu)

You are invited to participate in an education module and survey for a Doctor of Nursing (DNP) project conducted through Otterbein University.

The purpose of this research study is to examine the impact of an interactive educational module on the topic of articulating the role and practice of school nursing. Your participation in the study will contribute to a better understanding of how to create voice in school nurses by increasing self-efficacy.

If you agree to participate

The study will take approximately 110 minutes of your time. You will complete a pre-survey; participate in an interactive educational module about articulating the role and practice of school nursing and a post survey. You will be compensated with 1.5 nursing contact hours.

All attendees will be given two envelopes containing a randomly numbered pre-survey in one and the same numbered post-survey in the other.

Each attendee should place the completed or incomplete pre-survey in the first envelope and place the envelope in collection container at the back of the room if he or she so chooses. At the completion of the presentation, each attendee should place the complete or incomplete post-survey in the second envelope and place the envelope in the same container if he or she so chooses. The presenter will leave the room during the time allotted to complete and collect both the pre and post survey. I understand that I am agreeing to participate in this study by completing and submitting both the pre and post surveys. Each attendee, regardless of participation of the study will receive continuing education contact hours.

Risks/Benefits/Confidentiality of Data

There are no known risks to participating. There are questions about self-efficacy in articulating the role and practice of school nursing using evidence based practice and communication skills that may cause you to feel uncomfortable. There will be no cost for participating. Although your participation in this research may not benefit you personally, it will help us understand how to increase voice in school nurses by increasing self-efficacy. A random numbering system will be used to collect the hard copy pre and post survey and no personal identifiers will be used to connect you to your survey responses. Data results will be secured in a locked file.

Participation or Withdrawal

Your decision to participate or decline participation in this study is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time. Withdrawal will not affect your relationship with Columbus City Schools in anyway. If you do not want to participate, do not complete or submit either or both the pre and post survey.

Contacts

If you have any questions about the study contact the investigator **Kate King** at **614-365-5825** or send an email to king1@otterbein.edu Otterbein University's Institutional Review Board (IRB) reviewed and approved the study on **September 21, 2018**.

Appendix E- Lesson Plan

Content	Time	SE Focus	Method
Objectives <ul style="list-style-type: none"> •Experience how others describe the role and practice of School Nursing •Review and evaluate data regarding School Nursing Practice •Create a one minute speech answering the question: What do School Nurses do? 	5 min	N/A	PowerPoint
What makes a good message? <ol style="list-style-type: none"> 1. Key Messages 2. Story 3. Data points- examples given 4. Cohesive Argument 5. Confidence, eye contact, smile 	10 min	Vicarious Experience Social Modeling EBP	PowerPoint Interactive Discussion
Videos of Nurses Articulating School Nurse Role and Practice	20 min	Vicarious Experience Social Modeling	Videos Interactive Discussion
Directions for small group work: <ol style="list-style-type: none"> 1. Each School Nurse will select or make 5 Cue Cards <ol style="list-style-type: none"> a. Data Points b. Key messages c. Story 2. Have another group member hold your cue cards for you 3. Another group member to use 1 minute egg timer to time speech 4. Present your 1 minute speech using cue cards for guidance 5. Elicit feedback from group members 6. Use feedback to improve presentation 	5 min	Creating successful experience	PowerPoint Verbal Direction
Implement small group work	60 min	Vicarious experience Social Modeling Social Persuasion EBP Reduced Stress reaction	Simulation Interactive Experience
Interactive Large Group Feedback- Positives	5 min	Social Persuasion Modeling	Interactive Experience

Appendix F- Budget

Description	Unit	Cost	Total
Paper, printing, evidence cards, surveys		\$400	\$400
Poster presentation	1	\$109	\$109
Nursing Contact Hours-OASN	1	\$50	\$50
			\$559.00