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How To Change Pre-Service Elementary Courses To Increase Teachers' Health Education Self-Efficacy Levels

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by
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Abstract

This study used a mixed methods approach to examine the self-efficacy of pre-service elementary education teachers after completing a health education methods course compared to an interdisciplinary course such as a science, physical education, and health education. Student scores on measures of the Professional Teaching Standards in Health Education were used as the data source. Students provided a self-evaluation of strengths and weaknesses on standards and what types of curriculum and/or instruction could help improve low self-efficacy levels. A sample of elementary education students enrolled in a health education curriculum and methods course completed the Pre-Service Health Education National Self-Efficacy Scale (PHENSS) and two open-response questions. An independent-samples *t*-test was conducted on Scale results and thematic coding was used to evaluate responses to the open-response questions. The results suggest that enrolling in a 1-2 credit methods course vs. a 3-credit interdisciplinary made a positive difference in students' self-efficacy. Students completing a 1-2 credit health curriculum and methods course had significantly higher self-efficacy scores on four of the standards compared to students completing a 3-credit interdisciplinary course. Students completing a 1-2 credit course identified creating lesson plans, conducting and reviewing research, and reviewing the standards as significant for increasing their confidence but expressed the need for more practice and additional health content instruction. Students in the 3-credit courses identified developing and implementing lesson plans as critical but desired more health content instruction, resources, discussion, and practice.

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List of Abbreviations

AACTE: The American Association of Colleges for Teacher Education

AAHE: American Association for Health Education

NCATE: National Council for the Accreditation of Teacher Education

PEDS: The Professional Education Data System

PHENSS: The Pre-service Health Education National Standards Self-efficacy

PTSHE: Professional Teacher Standards in Health Education

Chapter 1: Introduction

Introduction to the Problem

As the needs of the 21st century learner have become more diverse, the demands on teachers have increased, and the need for high quality teacher preparation programs have never been more important. The pressure teachers face each day is tremendous. This is affecting teacher job satisfaction, attrition, and most importantly, student achievement (Mee & Haverback, 2014). It is critical that teacher preparation programs are fully preparing future teachers, so teachers can fulfill their roles and responsibilities as educators and successfully deal with the many pressures they face each day.

Teachers' self-confidence in their ability to teach is important. Bandura's (1993) work on self-efficacy has been the theoretical foundation for many research studies in the past. Self-efficacy is a person's capabilities to complete given tasks to achieve a specific desired outcome (Bandura, 1977). It is a belief about the level of competence one has and influences one's thoughts and emotions that enable actions (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Bandura's (1993) research suggests that self-efficacy impacts one's ability to persevere, reach goals, and overcome obstacles. Teachers' self-efficacy plays a role in creating the best learning environment for their students, which, as a result, fosters learning for their students (Bandura, 1993).

One way to create the best learning environment and student achievement is teaching to standards in the field of education, specifically health education, using the Professional Teacher Standards in Health Education (PTSHE). These standards are

based on research in best education practices and skills needed by the health educator (Frauenknecht, 2005). Therefore, optimal training related to the Professional Teacher Standards in Health Education and high self-efficacy are important for health teachers. Although there has been significant research completed on self-efficacy, there has been limited research related to teachers' self-efficacy in their ability to successfully use the Professional Teacher Standards in Health Education.

The Importance of Quality Health Instruction in K-12 Education

The report of the Institute of Medicine's Committee on Comprehensive School Health Programs in Grades K–12 showed America's students are at risk for dropping out of school as a result of a variety of health-related problems including the use of tobacco, alcohol, and other drugs; low levels of physical fitness; poor nutrition; risky sexual activity; injuries; violence; depression; and stress (National Board of Teaching for Professional Teaching Standards, 2002). "Accomplished teachers of health education know that effective school health education programs focusing on physical, mental, emotional, social, and spiritual health assist all students in realizing their full potential as learners" (National Board of Teaching for Professional Teaching Standards, 2002, p. 11). It is critical that all educators take time to teach students about health enhancing behaviors for a high-quality life and higher academic achievement.

Academic success greatly depends on the health of students. A study conducted in Chile to evaluate if mental health problems identified by screening first graders using the Teacher Observation of Classroom Adaptation-Revised and Pediatric Symptom Checklist related to poorer academic achievement test scores in

language, mathematics and science in the fourth grade (Guzman, Jellinek, George, Hartley, Squicciarini, Canenguez, Kuhthau, Yucel, White, Guzman, & Murphy, 2011). The researchers controlled for student and family risk factors. Results showed students with mental health issues had lower achievement test scores (14-18 points lower) than those students without mental health issues. Students who were at risk for mental health problems in both screenings were approximately 33 points lower than those students who were not at risk. The results support the idea that mental health issues in elementary children do play a role in academic achievement scores (Guzman et al., 2011). The Centers for Disease Control and Prevention (2016) website stated, "Health-risk behaviors such as early sexual initiation, violence, and physical inactivity are consistently linked to poor grades and test scores and lower educational attainment" as well as a primary indicator of adult health (The Centers for Disease Control and Prevention, 2016, p. 1).

Schools play a critical role in providing programs that encourage healthy behaviors, which reduce risky behaviors and ultimately have a positive impact on academic performance and success (Centers for Disease Control and Prevention, 2016). Anyanwu and Reuben (2016) believed, "skills-based health education is an approach... that is effective, interactive, engaging, and meaningful...and it plays a significant role in preventing disease, prolonging life, and protecting health" (p. 58). They explained health education is a critical element of preventive medicine, which teaches individuals the knowledge, attitudes, and skills they need to be healthy. They argued more effort should be put into re-equipping or re-training teachers, as they are required to prepare students with skills and knowledge for the 21st century (Anyanwu

& Reuben, 2016). It is evident educators teaching in K-12 education need to be prepared to teach health education as it impacts students' academic success.

Elementary Teacher Preparation Health Requirements

In Minnesota, pre-service elementary teacher candidates have varying program requirements. Each pre-service preparation program in Minnesota has slightly different graduation requirements related to pre-service elementary teachers completing the health curriculum methods course. Some institutions require a one or two-credit curriculum and methods course focused on health education while others require a three-credit interdisciplinary science, physical education, and health education course. Since there are no set curriculum or credit requirements, each institution can decide how much instruction their pre-service elementary teachers will receive related to health education as long as they meet the knowledge and skill requirements.

This study may help institutions determine the most ideal course work for preparing their elementary teachers. This study assessed pre-service teachers' confidence in their ability to successfully implement the Professional Teacher Standards in Health Education. Evaluating the teachers' perception of their ability to teach has provided rich information in the field of education. Study findings provide data explaining why pre-service elementary education students believe they possess high and/or low areas of self-efficacy on specific standards. The data yields information related to curriculum and instruction that could best prepare pre-service teachers. Post-secondary programs will be able to use study findings to implement more effective curriculum and instruction for their teacher candidates.

Background of the Problem

Teacher preparation continues to change and evolve to better meet the needs of students. A report from the American Association of Colleges for Teacher Education (AACTE) Professional Education Data System (PEDS) shows institutions of higher education play a critical role in developing high-quality teacher preparation and continue undergoing significant reform (2013). Since the majority of pre-service educators (currently about 88%) are prepared at institutions of higher education, more should be done to align the production and capacity of future educators to meet the needs of school districts (American Association of Colleges for Teacher Education, 2013). One major need in many school districts is improving the health of students to enable better learning (New Hampshire Department of Education, 2012).

There are projections for needing more than one million new teachers in the next 10 years (American Association of Colleges for Teacher Education, 2013; U.S. Bureau of Labor Statistics Projections of Occupational Employment 2016-26, 2017). Traditionally prepared teachers not only teach more effectively than their non-traditionally prepared colleagues, they leave the profession at a much lower rate (American Association of Colleges for Teacher Education, 2013). Based on projections, there is a need for fully prepared teachers who stay in the profession.

Statement of the Problem

Inadequate teacher preparation programs are a concern in the field of education (O'Neill & Stephenson, 2013). There is support for the idea that pre-service teachers sometimes feel their undergraduate course work was inadequate. "What teacher education programs do to prepare their teachers *is* then important, and

ensuring sufficient quantity and quality of coursework content and the time to practice strategies in real classrooms under cooperating teacher supervision is needed" (O'Neill, & Stephenson, 2013, p. 142). By evaluating the perceptions of preparedness of pre-service elementary education teachers, undergraduate education programs can make necessary course changes to better their future teachers. It is expected that health educators use the professional teaching standards. Assessing teacher confidence in their ability to successfully do that is critical in order to make the necessary changes in pre-service teacher programs.

Clark, Brey, and Clark (2013) suggest that educators possessing self-efficacy in their ability to demonstrate application of the national standards will be more effective in the classroom and ultimately have a greater effect on the health status of their students. They also "determined that there was little, if any, empirical data about the self-perceived self-efficacy of pre-service education students regarding their ability to teach health education" (Clark et al., 2013, p. 719). There is a clear gap that needs to be filled. Clark et al. (2013) developed an instrument to assess perceived self-efficacy of prospective elementary education students enrolled in an elementary health curriculum methods class or prospective secondary health education teachers enrolled in a health education methods course. This instrument may assist future researchers in identifying self-efficacy areas related to standards.

Purpose of the Study

The purpose of the study was to examine the perceptions of pre-service elementary education teachers regarding their preparation programs in health education, with respect to self-efficacy regarding implementation of the Professional

Teaching Standards in Health Education in their future classrooms. It also examined why students believe they possess areas of strengths and weakness on certain standards and what curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards.

Post-secondary instructors may use study findings to develop more effective curriculum and instruction for elementary teacher candidates. Identifying the standards which pre-service teachers perceive low and high self-efficacy is important. Student feedback related to why they feel this way directly benefits post-secondary instructors. Instructors can use that information to design curriculum that better meets students' needs. Courses can be designed based on direct student feedback and data.

Research Questions

1. What difference, if any, exists in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the pre-service teachers completed a health curriculum and methods course or an inter-disciplinary course such as a science, physical education, and health education?
2. On which health education standards do pre-service elementary education teachers score themselves low and communicate a lower self-efficacy?
3. On which health education standards do pre-service elementary education teachers score themselves high and communicate a higher self-efficacy?
4. Why do pre-service teachers feel they have areas of weakness or strength on certain standards?

5. What type of curriculum and instruction could be implemented to improve low self-efficacy levels on certain standards?

Hypotheses

H1: (H_0:) There is no difference in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the teachers completed a health curriculum and methods course or an inter-disciplinary course such as science, physical education, and health education.

(H_1:) There is a difference in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the teachers completed a health curriculum and methods course or an inter-disciplinary course such as science, physical education, and health education.

Significance of the study

As Katitia (2015) noted, "No matter how good the curriculum, infrastructure or teaching aids are, at the end of the day it is the teachers who make a difference in preparation of the learners" (p. 57). Teachers play a critical role in the lives of students and their ability to succeed in school (Hendricks, 2010). Tobery-Nystrom (2011) suggested that improving teacher self-efficacy might result in an increased interest in teacher education programs, teacher retention, career satisfaction, and student achievement. Further evidence shows that, "classroom atmospheres are partly determined by teachers' beliefs in their instructional efficacy" (Bandura, 1993, p. 140).

Elementary educators who possess self-efficacy in their ability to teach the Professional Teacher Standards for Health Education will be more effective in the classroom and ultimately have a greater effect on the health status of their students (Clark, Brey, & Clark, 2013). These researchers determined there was little empirical data about the self-efficacy of pre-service elementary education students regarding their ability to teach health education. Elementary students benefit from teachers who are confident in their ability to teach health so they can adequately meet the needs of students. The kind of class that can accomplish this is one that covers decision-making, communication, and other life skills that impact the health of students the rest of their lives, such as a health education course. By identifying the Professional Teacher Standards for Health Education in which pre-service elementary education teachers possess low self-efficacy, valuable data will be provided to education preparation programs. This data will assist education preparation program educators in making decisions related to improving curriculum to better prepare elementary education teachers to teach health education.

If improvements are not made at the pre-service level, our elementary teachers will not be confident, prepared, or able to fully meet the needs of their students. "Improving the quality of the programs that prepare and educate America's teachers is crucial to the success of America's students" (Hendricks, 2010, p. 5). Monk (2015) argued that preparation programs cannot afford to wait for more definitive research to improve programing. Tschannen-Moran, Woolfolk Hoy and Hoy (1998) argued there is much work to be done related to teacher self-efficacy. Qualitative research on self-efficacy is overwhelmingly neglected and is needed to refine our understanding of the

process of developing efficacy. "One way to support teacher-educators training future teachers is to study perceptions of teacher-educator self-efficacy" (Tobery-Nystrom, 2011, p. 5).

Minnesota requires no specific curriculum or instruction in health education for pre-service elementary education teachers; only specific knowledge and skills are required to be met. This results in preparation programs determining the requirements of their teacher candidate. This study compared the self-efficacy levels of students enrolled in a health curriculum and methods course and interdisciplinary course such as a science, physical education, and health education. This study examined why the pre-service students perceived they possessed areas of strength and weakness on the standards and what type of curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards. Study findings may be helpful to preparation programs deciding the health requirements for pre-service teachers.

Definition of Terms

AACTE: The American Association of Colleges for Teacher Education is a national alliance of educator preparation programs focused on high quality teacher preparation and professional development. Members include over 800 institutions including both public and private colleges and universities in every state as well as the District of Columbia, Virgin Islands, Puerto Rico, and Guam (The American Association of Colleges for Teacher Education, 2013).

PEDS: The Professional Education Data System conducts a survey every spring, which is completed by The American Association of Colleges for Teacher Education

member institutions. This survey provides data about higher education preparation programs in the United States. Data is collected on enrollment, degrees, program completion, faculty, and resources (The American Association of Colleges for Teacher Education, 2013).

PHENSS: The Pre-service Health Education National Standards Self-efficacy is a 29-item Likert scale that is used to assess education students' self-efficacy towards using the Professional Teaching Standards in Health Education (Clark et al., 2013).

PTSHE: Professional Teacher Standards in Health Education are standards based on best education research practices and skills needed by the health educator (Frauenknecht, 2005).

Self-efficacy: Self-efficacy is a person's perception or belief about his or her capability to complete given tasks to achieve a specific desired outcome (Bandura, 1977). It is a belief about the level of competence one has and influences one's thoughts and emotions can enable actions (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

Nature of the Study

This study used a mixed methods approach to examine how pre-service elementary education teacher's self-efficacy on the Professional Teaching Standards in Health Education after completing a health education curriculum and methods course compared to an interdisciplinary course such as a science, physical education, and health education. It examined why students believe they possess areas of strengths and weakness on certain standards. Text-box response data identified what types of curriculum and/or instruction could be implemented to improve low self-

efficacy levels on certain standards. Participants in this study were students enrolled in pre-service education programs from multiple colleges or universities in Minnesota currently completing a health education curriculum and methods course or who recently completed a health curriculum and methods course. Students completed a survey, which included the Pre-Service Health Education National Self-Efficacy Scale (PHENSS) the last week of the health curriculum and methods course or during student teaching via an online Qualtrics survey (see Appendix A). Two additional text box response questions were included in the survey (see Appendix A).

Organization of the Remainder of the Study

Chapter two will consist of a review of literature. Theoretical considerations and the results of recent studies will be highlighted in this chapter. Chapter three will include the methodology of this study. A detailed description of the research design, instrumentation, data collection and analysis, limitations, and ethical considerations will be included. An examination of the results will be included in chapter four. Lastly, Chapter five will include an overview of the study and research questions, implications for educational practice, and recommendations for future research.

Chapter 2: Review of Literature

Theoretical Framework

Social learning theory.

The theoretical framework for this study is grounded in Bandura's work related to social learning theory, or, as many know it, social cognitive theory, as well as the concept of self-efficacy. Bandura's social learning theory is concerned with how an individual operates cognitively relative to his or her social experiences and how cognitive operations then come to influence one's behavior and development (Grusec, 1992). It is then believed that individuals abstract and integrate information that is encountered in a variety of social experiences (Grusec, 1992). Grusec (1992) explains the following:

> Through this abstraction and integration, they mentally represent their environments and themselves in terms of certain crucial classes of cognitions that include response-outcome expectancies, perceptions of self-efficacy, and standards for evaluative self-reactions. These cognitions are believed to affect not only how they respond to environmental stimuli but also the sorts of environments they seek out for themselves. (p. 781)

Bandura's work on cognition, abstraction, and integration has played a role in the development of his form of the social learning theory (Grusec, 1992). Since then, many refer to this form of the social learning theory as the social cognitive theory, more contemporary terminology.

Self-efficacy.

Bandura (1977) explains self-efficacy as a person's perception of capability to

complete given tasks to achieve a specific desired outcome. Self-efficacy is a belief about the level of competence one has and influences one's thoughts and emotions that enable actions (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Many people overestimate or underestimate their abilities, which may result in positive or negative results. For example, "Self-efficacy beliefs contribute to motivation in several ways: they determine the goals people set for themselves, how much effort they expend, how long they persevere in the face of difficulties, and their resilience to failure" (Bandura, 1993, p. 131). If one has low self-efficacy, one may be likely to set low standards for oneself, put little effort towards goals, and give up easily during challenging times. There are other significant ways low self-efficacy can negatively impact someone. Bandura (1993) explains that "People's belief in their capabilities affect how much stress and depression they experience in threatening or difficult situations, as well as their level of motivation" (p. 132). Belief in one's self-efficacy has other effects such as the level of effort put forth, how long one will persevere, and resilience in the face of adversity (Bandura, 1997). A person continues to believe he/she can perform a given task, one will habitually act on that belief without having to remind oneself of it (Bandura, 1997). If one does not believe in an ability to perform the task, they would act differently (Bandura, 1997). Perceived self-efficacy plays a crucial role in social cognitive theory. "By influencing the choice of activities and the motivational level, beliefs of personal efficacy make an important contribution to the acquisition of the knowledge structures on which skills are founded" (Bandura, 1997, p. 35).

The researchers in one study suggest that high levels of efficacy in learning

and performance may have positive consequences and risky performances have negative consequences (Salanova, Lorente, & Martinez, 2012). The first of three studies conducted to investigate this was a longitudinal field study of 527 undergraduate students in the learning setting with a hypothesis that the student with higher self-efficacy will have higher academic performance compared to lower self-efficacy students. The data proved this hypothesis to be true: the more self-efficacy, or belief in capability there is, the higher performance (Salanova, Lorente, & Martinez, 2012). In the second longitudinal study, 165 university participants worked to accomplish specific tasks assigned in the laboratory setting. Results suggest higher efficacy and innovative performance have a positive correlation (Salanova, Lorente, & Martinez, 2012). The last study conducted included 228 construction workers from 10 different companies to evaluate efficacy in a risky setting. The participants completed an interview guide that included open questions and a questionnaire that was given during a face-to-face interview. The data suggested there is a negative and significant correlation between efficacy and safety performance, therefore the hypothesis was correct that high and low self-efficacy in the risky setting impact safety performance (Salanova, Lorente, & Martinez, 2012).

Teacher self-efficacy.

Self-efficacy in teaching is a teacher's belief in his or her capacity to organize and execute a course of action required to successfully accomplish a specific task in a particular context (Tschannen-Moran et al., 1998). Bandura (1997) suggests that different people with similar skills may perform poorly, adequately or extraordinarily, depending on their self-efficacy beliefs. "The self-efficacy belief is an important

concept in the understanding of teachers' thoughts, decisions, feelings, behaviors, performance, and attitudes towards their students" (Erdem & Demirel, 2007, p. 576). It is essential teachers are confident in their ability to teach their content subject (Aoalsteinsson, Frimannsdottir, & Konraosson, 2014) to meet the needs of their students.

Ozder (2011) found that teachers can perceive themselves to be highly adequate in a variety of areas, such as instructional strategies and classroom management. Novice teachers believe they are, "...highly successful in 'using enriched instructional methods', 'using verbal questions', 'using educational websites', 'performing additional works with figures, posters and models', 'providing concrete examples' and 'using the drama technique' " (Ozder, 2011, p. 12). Based on Ozder's (2011) findings, "novice teachers perceive themselves to be very adequate in teaching" (p. 10). However, one area in which novice elementary teachers have a very low degree of self-efficacy belief is ensuring student engagement in class (Ozder, 2011). Another study aimed to address pre-service teachers' student teaching experience, personality, and beliefs about how children learn related to their individual teaching self-efficacy after finishing their preparation courses. Three main aspects of self-efficacy were measured in this study: student engagement, classroom management, and instructional strategies. Surveys were completed by 509 students at the beginning and end of their teacher education program at a state university. The neuroticism and extraversion subscales of the Neo Five-Factor Inventory were the measures used to assess personality in this study. The participant's belief about how children learn was measured using the Modernity Scale, the Teacher Sense of

Efficacy Scale for perceived level of influence in teaching, and the Classroom Assessment Scoring System to assess quality of participants' observed teaching practices. The results showed extroversion was positively associated with teacher self-efficacy whereas neuroticism was negatively associated with teacher self-efficacy. Pre-service teachers who had outgoing personalities had a higher sense of self-efficacy at the end of their preparation program. In addition, pre-service teachers who had a greater tendency towards anxiety felt less confident about their future in teaching. Teachers who had more democratic beliefs about how children learn were also found to have higher self-efficacy (Jamil, Downer, & Pianta, 2012).

There are many areas in which teacher self-efficacy impacts the classroom and students. One's belief about self-efficacy plays a role in a variety of aspects of teaching such as classroom management abilities, organizing courses, communicating with students, effective teaching, and motivating and communicating with students (Erdem & Demirel, 2007). Other research supports that positive teacher self-efficacy affects a teacher's willingness to try new approaches to teaching (Guskey & Passaro, 1994; Haney, Lumpe, Czerniak, & Egan, 2002; Nurlu, 2015). If a teacher is confident in his or her ability to perform a given task, he or she may feel more confident in expanding their approach.

This is important in teaching as different students learn in different ways. Today's classroom includes students from varied cultures with different languages, customs, traditions, and experiences. Therefore, many teachers use the principles and practices of differentiation to meet all student needs. Differentiation focuses on meeting the learner's needs to maximize student success (Tomlinson & Allan, 2000).

If an instructor has confidence in his or her abilities, he or she may incorporate the principles and practices of differentiation in his or her classroom. "A teacher who is comfortable and skilled with the use of multiple instructional strategies is more likely to reach out effectively to varied students than is the teacher who uses a single approach to teaching and learning" (Tomlinson & Allan, 2000, p. 1). If a teacher is not confident in his or her ability to perform a given task, he or she will likely not try new things, resulting in the same curriculum and/or instruction all the time, meeting only some of the students' needs.

Teachers who are confident in their own teaching, place more importance on building a warm relationship with students (Nurlu, 2015). Relationship building with students is especially important in the health classroom as personal topics such as human sexuality, relationships, and drug use are discussed on a daily basis. Health teachers need to create a safe and welcoming environment so students feel comfortable learning and talking about health topics. Hattie (2012) argues that teachers should know what students are thinking and what students know to provide meaningful experiences for students in addition to having content knowledge. One way to create a welcoming environment is to build a warm relationship with students and connect with them on a personal level. Teachers who are confident in their own teaching will place more importance on this, which will positively impact the health classroom.

Bandura (1997) explains that effective functioning, in this case the classroom, requires skills and the efficacy to use those skills in constantly changing environments and situations. "Perceived self-efficacy is not a measure of the skills

one has but a belief about what one can do under different sets of conditions with whatever skills one possess" (Bandura, 1997, p. 37). Working conditions for teachers are constantly changing whether it is the classroom environment, students in class, age group taught, etc. Teachers must have the confidence to teach students in the unpredictable and stressful environment they teach in every day. A teacher's self-efficacy also increases lesson planning and organization skills (Allinder, 1995). It is clear there are many benefits that result from high teacher self-efficacy.

In order to teach health education effectively, pre-service elementary teachers need confidence (self-efficacy) in their ability to demonstrate the Professional Teacher Standards in Health Education (Clark, Brey, & Clark, 2013). The researchers argue, "In turn, effective teachers have the potential to provide a greater effect on the resulting health status of their students" (Clark, Brey, & Clark, 2013, p. 719). Not only does teacher self-efficacy impact the classroom atmosphere, but also the students. Bandura (1993) explains:

> Students who end up being taught by teachers with a low sense of efficacy suffer losses in perceived self-efficacy and performance expectations in the transition from elementary school to junior high school… Students self-doubts become even more severe if the teachers to whom they transfer harbor self-doubts about their capabilities to promote academic attainment. (p. 142)

Why Health Education Matters

Education on health curriculum impacts students' knowledge, skills, and attitudes related to physical, mental, emotional, and social health and wellness (New Hampshire Department of Education, 2012). Health education instruction may,

"...result in positive changes in behavior that lower student risks around: alcohol, tobacco, and other drugs, injury prevention, mental and emotional health, nutrition, physical activity, prevention of diseases and sexuality and family life" (New Hampshire Department of Education, 2012, p. 1).

The statistics related to the health in the U.S., especially children and youth are alarming. According to the Center for Disease and Control, approximately one in five school-aged children is obese which has immediate and long-term effects on the child's physical, social, and emotional health, including asthma, sleep apnea, and more (2017). Children who are obese at a young age are more likely to be obese as an adult, which is linked to heart disease, type 2 diabetes, and cancer. Children who are obese are also bullied and are more likely to suffer from depression and low self-esteem. Obese children also miss more school than their peers potentially making it difficult to keep up academically (The Centers for Disease Control and Prevention, 2017). This is directly impacting the health of our nation and needs to be addressed.

Research has shown that unhealthy behaviors are developed during childhood and prevention is key to decreasing chronic disease (American Cancer Association, 2008). "School health education provides the fundamental basis for instilling behaviors into our young people to prevent or delay the onset of the leading causes of death in our country" (American Cancer Association, 2008, p. 3). Many organizations, such as the American Cancer Society, American Diabetes Association, and the American Heart Association, argue health education is critical and can enable students to prevent disease and injury (2008).

School health education can play a role in health literacy as well. "Health

literacy is the capacity of individuals to obtain, interpret, and understand basic health information and services in ways which are health enhancing" (American Cancer Association, 2008, p. 2). The Institute of Medicine suggests that the most effective way to improve health literacy is to provide and incorporate education on health curriculum at all levels of education (American Cancer Association, 2008).

A panel of health researchers reviewed literature related to school health programs based on the Coordinated School Health Program model to see if there was in fact evidence of academic achievement with school programs available. The results showed there is a positive effect on academic achievement from health education and parental involvement in asthmatic children, as well as a lack of negative impacts of physical education on academic achievement (Murray, Low, Hollis, Cross, & Davis, 2007). Although it is challenging to evaluate school health programs due to sample size, costs, follow-up time, etc. the researchers argue school health programs are likely to improve academic outcomes for students (Murray, Low, Hollis, Cross, & Davis, 2007).

Students' unhealthy behaviors negatively impact them in a variety of ways, including their ability to learn. Poor nutrition habits such as skipping breakfast are linked to a lack of concentration in class. Other health behaviors, such as lack of physical activity, poor sleeping habits, poor nutrition, and engaging in risky sexual or violent behaviors all influence the physical and mental health of students. Health education class is a primary place where students are able to learn healthy habits and behaviors (Nakano, Kasuga, Murase, & Kazuhiro (2013). One study examined changes in lifestyle and gender differences that affect the health of students during

childhood. Students in Grades 1-6 at six different elementary schools and Grades 7-9 in four junior high schools completed surveys related to health behaviors including diet, physical activity, sleep, hygiene, and safety. It was found that the lifestyle behaviors differ by age and sex, and health education should adjust accordingly to help maintain children's health (Nakano, Kasuga, Murase, & Kazuhiro, 2013).

Another study was conducted to determine if the diet and body mass index of students had any impact on their academic success. In this study, 128 secondary students from Ekiti State Nigeria completed a questionnaire related to body mass index, diet, and their academic performance (Ogunsile, 2012). The results showed that diet, such as eating breakfast, three meals a day, and eating fruits and vegetables, all significantly impacted their academic performance. Body mass index and a healthy diet together also impacted academic performance. The researchers concluded that it is critical students maintain a healthy diet and healthy behaviors as these will positively impact them physically, psychologically, and performance academically (Ogunsile, 2012). One limitation of this study is the small sample size of only 128 students. Despite the limitations, this data could be useful in demonstrating the impact of healthy behaviors and academic performance. Health Education plays a critical role in teaching about healthy behaviors.

Professional Teaching Standards for Health Educators

The seven responsibilities, 27 competencies, and 79 sub-competencies of health educators for all health education settings were developed in the late 1970s by a variety of professional organizations, which later were published in 1985 (American Association for Health Education, 2001). In 1986, the National Council for the

Accreditation of Teacher Education (NCATE) approved the standards, which then served as the foundation for many health education preparation programs (American Association for Health Education, 2001). NCATE later revised the standards resulting in a Teacher Education Standards Task Force responsible for reviewing and revising the responsibilities for teachers (American Association for Health Education, 2001). The new standards are based on best practices for both health education and education and use language that describe what teachers are required to do. The standards are based on the "necessary content, pedagogical, and professional knowledge and skills to teach both independently and collaboratively" (National Council for the Accreditation of Teacher Education, 2001, p. 3).

The standards and key elements of the AAHE/NCATE Professional Teacher Standards in Health Education used to develop the Pre-Service Health Education National Self-Efficacy Scale (PHENSS) used in this study can be found in Appendix G. The American Association for Health Education revised the health education teacher preparation standards and key elements in 2008, which can be found in Appendix H.

It is critical that health educators are confident in their ability to use the Professional Teacher Standards in Health Education. Health education teachers have a responsibility to teach students knowledge that facilitates skill development which will support healthy behavior change and adapt curriculum to engage and accommodate all students learning (Nobiling & Lyde, 2015). Understanding health educators' self-efficacy related to teaching the standards is critical to improving the pre-service preparation programs. Elementary teachers are expected to use these

standards and ensure every student's needs are met. If pre-service programs can identify health standards on which teachers possess low self-efficacy on, adjustments to curriculum and instruction can be made.

Teacher Education Programs in Health Education

Darling-Hammond and Bransford (2005) argue that teacher preparation programs are essential to developing effective teachers. There is a continued emphasis, "placed on the relationship between student achievement in PreK–12 public education and teacher preparation programs. Teacher-educators must become aware of their own impact on the learning and performance of pre-service and in-service teachers" (Tobery-Nystrom, 2011, p. 3). Teacher preparation programs greatly impact how successful teachers are in the future.

Education reform has played a major role in health education and teacher preparation. Goals 200: Educate America Act required schools to provide drug and alcohol education as part of a comprehensive health education curriculum. It also prompted the development of outcomes or standards that identify what K-12 students should know and be able to do. Lastly, it required standards be set for teachers in all subjects to determine the competencies for professional development (Frauenknecht, 2005). In the late 1970s, health education professional organizations developed the seven responsibilities, which became the foundation for many health education professional preparation programs (Frauenknecht, 2005). Reforms in education and teacher preparation led to revising the standards to use language that describes what teachers are required to do. These standards are developed based on the content,

pedagogical, and professional knowledge and skills health teachers need and to support the training of pre-service health educators (Frauenknecht, 2005).

One area of concern in pre-service teacher programs is preparing teachers to effectively teach content standards. In a quasi-experimental design study, Clark, Clark and Brey (2014) used 341 student participants from four institutions to complete the Pre-service Health Education National Standards Self-efficacy (PHENSS) scale at the beginning and end of the semester. The developed instrument, which had exemplary coefficient of test-retest reliability, was used to assess education students enrolled in a health curriculum methods class. Data analysis indicated statistically significant improvement of the participants' PHENSS scores in two of the seven health education standards, which included planning effective programs and implementing programs. Improvements were indicated for other subscales, which included evaluating effectiveness of coordinated school health programs and communicating health and health education needs, concerns, and resources, however these were not significant (Clark et al., 2014). Assessing individual and community needs for health education, coordinating provisions of health education programs and services, or acting as a resource person in health education increased, but no significant improvement was made for students completing a semester-long elementary health education methods course (Clark et al., 2014). The researchers suggest that educators possessing self-efficacy in their ability to demonstrate use of the national standards will be more effective in the classroom and ultimately have a greater effect on the health status of their students. Although positive results were seen in this study, there were significant limitations that should be considered.

Participants were not randomly assigned, a delayed post-test was not used, and individual teaching styles from instructors may have played a role. Lastly, self-reported data may produce an overestimation in personal capabilities (Clark et al., 2014). Based on the results of this study, it seems elementary health education methods courses can improve the pre-service elementary teacher's self-efficacy to use the Professional Teacher Standards in Health Education.

Another area of concern is educators' ability to manage classroom behavior, which relates to the Professional Teacher Standards in Health Education key element C: Candidates exhibit competence in classroom management. O'Neill and Stephenson's (2013) study focused on teachers' perceived preparedness for classroom management, based on their pre-service undergraduate coursework. This survey questionnaire included three sections, one of which was the Teachers' Sense of Efficacy Scale, which measured self-efficacy related to classroom management, instruction, and student engagement (O'Neill & Stephenson, 2013). Researchers found that educators:

> perceived themselves, at best, as only *somewhat* prepared to manage disruptive behaviours and noncompliance, then less than *somewhat* prepared to manage student disorganization, and, lastly, just above the midpoint between *not at all* prepared and *somewhat* prepared to manage aggressive, antisocial, and destructive behaviours based on their coursework preparation in classroom behaviour management. (O'Neill & Stephenson, 2013, p. 139)

This is a problem that can possibly be addressed in undergraduate teacher preparation programs. Although there are a variety of improvements that have been made in

teacher preparation programs, it is clear there are weaknesses that need to be addressed.

Pre-Service Elementary Education Programs

The Minnesota Board of Teaching oversees the requirements for teacher licensure in Minnesota. A candidate must hold a baccalaureate degree from an accredited university or college, demonstrate completion of standards set by the Minnesota Board of Teaching, and show verification of completing a teacher preparation program before they are authorized to submit for licensure requirements (Revisor of Statutes, 2016). Candidates must complete a preparation program for licensure that allows the candidate to demonstrate their knowledge and skill in items A to L listed in the Minnesota Administrative Rule by the Revisor of Statues (2016). The Revisor of Statues (2016) lists knowledge and skills on Physical Education and Health Education in Item K that states:

> A teacher of children in kindergarten through grade 6 must demonstrate knowledge of fundamental physical education and health concepts and the connections among them. The teacher must:
>
> (1) understand the knowledge needed for providing learning experiences that encourage personal and community health promotion, disease prevention and safety, and proper nutritional choices;
>
> (2) understand strategies for reducing and preventing accidents; drug, alcohol, and tobacco use; and high-risk situations and relationships;
>
> (3) understand and apply movement concepts and principles to the learning and development of motor skills; and

(4) understand the knowledge needed for providing learning experiences that develop a health-enhancing level of physical fitness. (The Revisor of Statues, 2016, p. 1)

Any elementary education candidate, regardless of the preparation in which they are enrolled, must demonstrate these knowledge and skills. How a preparation program provides these is up to the individual program. There are no required courses with set curriculum that all universities or college preparation programs must offer. The preparation program just needs to provide evidence that all the standards are met during some course that is required for their elementary education candidates. Each program can integrate the standards in different ways. Some preparation programs offer a one or two-credit health curriculum and methods course whereas others offer a three-credit science, physical education, and health education combined course. Each program is required to show they have met the standards at some point in the elementary education program.

Educators who possess high self-efficacy in their ability to demonstrate application of the national standards will be more effective in the classroom and have a greater impact on the health status of students. This study provides valuable data related to teachers' self-efficacy in their ability to successfully use the Professional Teacher Standards in Health Education and how preparation programs can change their course to better prepare future teachers. Chapter three will include a detailed description of the research design, instrumentation, data collection and analysis, limitations, and ethical considerations.

Chapter 3: Methodology

Philosophy and Justification

The purpose of the study was to examine the perceptions of pre-service elementary education teachers regarding their preparation programs, with respect to self-efficacy and implementing the Professional Teaching Standards in Health Education in their future classrooms. Study findings provide data explaining why pre-service elementary education students believe they possess high and/or low areas of self-efficacy on specific standards. The data yields information related to curriculum and instruction that could best prepare pre-service teachers. Previous research has been completed to examine pre-service elementary teachers' self-efficacy levels before and after completing a three-credit health education curriculum and methods course. This study extends that research by examining the self-efficacy levels after completing a health education curriculum and methods course or an interdisciplinary course such as a science, physical education, and health education.

Research Questions

1. What difference, if any, exists in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the pre-service teachers completed a health curriculum and methods course or an inter-disciplinary course such as a science, physical education, and health education?
2. On which health education standards do pre-service elementary education teachers score themselves low and communicate a lower self-efficacy?

3. On which health education standards do pre-service elementary education teachers score themselves high and communicate a higher self-efficacy?
4. Why do pre-service teachers feel they have areas of weakness or strength on certain standards?
5. What type of curriculum and instruction could be implemented to improve low self-efficacy levels on certain standards?

Theoretical Framework

Bandura's work related to social learning theory and the concept of self-efficacy provided the framework for this study. Self-efficacy is a belief about the level of competence one has, which influences one's thoughts and emotions that enable actions (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Many people overestimate or underestimate their teaching abilities, which may positively or negatively impact their students. Aoalsteinsson, Frimannsdottir, and Konraosson (2014) argue that the concept of self-efficacy is important in the teaching world as it is critical that teachers are confident in their ability to teach and meet the needs of students.

Variables

The independent variable in this study was the credit size of the health curriculum and methods course (1-2 credits or 3 credits) in elementary teacher preparation programs. The institutions selected teach similar course content and standards required for health methods offered by means of either a specific health curriculum and methods course or an interdisciplinary course such as methods of

teaching science, physical education, and health education. The dependent variable is the self-efficacy scores on the seven subscales on the PHENSS.

Hypotheses

H1: (H_0:) There is no difference in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the teachers completed a health curriculum and methods course or an inter-disciplinary course such as science, physical education, and health education.

(H_1:) There is a difference in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the teachers completed a health curriculum and methods course or an inter-disciplinary course such as science, physical education, and health education.

Research Design

This study used a mixed methods approach to examine the self-efficacy of pre-service elementary education teachers after completing a health education methods course compared to an interdisciplinary course such as a science, physical education, and health education. It examined why students believe they possess areas of strengths and weakness on certain standards. Text-box response data identified what types of curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards.

The two student populations examined in this study were students enrolled in pre-service elementary education programs from multiple institutions in Minnesota

who are either currently enrolled in or recently completed a health education curriculum and methods course. Students completed a survey, which included the Pre-Service Health Education National Self-Efficacy Scale (PHENSS) the last week of the health curriculum and methods course or during student teaching via an online Qualtrics survey.

An independent-samples *t*-test analysis was completed after data was collected utilizing SPSS software to examine self-efficacy level on each of the seven subscales in the Pre-Service Health Education National Self-Efficacy Scale (PHENSS). In addition to examining self-efficacy, this study used text box response questions to evaluate why students believe they possess areas of strengths and weaknesses on certain standards and what type of curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards. Further analysis was completed to compare the data of health education curriculum and methods course institutions with interdisciplinary course institutions. The researcher first organized and prepared the data for analysis by reading through all open-ended responses at least two times to become familiar with the data. Coding the data occurred during the third data reading. A combination of emerging and predetermined codes was used for this process. During the subsequent readings, the researcher determined if themes could be categorized.

Instrumentation and Measures

The instrument in this study was the Pre-Service Health Education National Self-Efficacy Scale (PHENSS) with two text box response questions added (Clark, Brey, & Clark, 2013). This survey was selected because it best matches the research

questions related to pre-service teacher's self-efficacy toward using the Professional Teaching Standards in Health Education. This scale consists of 29 items. The 29-item scale uses a 6-point Likert scale from "1- not confident" to "6- completely confident" (Clark et al., 2013). The scoring for this scale were the summation of all scores as well as the summation of items in each of the subscales. Each Professional Teacher Standard in Health Education is a subscale. Each subscale has a total of four or five items on the test. A formula inserted in Qualtrics determined final scores in each of the subscales based on student responses using the 6-point Likert scale. Participants were provided their total score for each of the subscales at the conclusion of the survey.

The development of this scale demonstrated exemplary coefficient test-retest reliability with a reliability coefficient score of r= .71 (Clark et al., 2013). The pilot study showed internal consistency based on a Cronbach's alpha value of .94 for the entire instrument and subscales between .73 and .85 (Clark et al., 2013). The study relied on students responding in a way that is true to what they think and believe. "The use of pre-service elementary education teachers to establish the instrument's psychometrics adds to the validity of the scale" (Clark et al., 2013, p. 724).

Two additional questions were added to the survey to explore why the pre-service students believe they possess areas of strengths and weaknesses on certain standards and what type of curriculum and/or instruction could be implemented in the course to improve low self-efficacy levels on certain standards. These questions were tested on a sample group during the pilot test to establish validity.

Sample

The population (N) is pre-service elementary education teachers. The sample (n) for this study was a convenience sample of elementary education students enrolled in a health education curriculum and methods course from multiple universities or colleges in Minnesota with similar content and standards. Some universities or colleges require a health education curriculum and methods course and some require an interdisciplinary methods course such as a science, physical education, and health education. A nonrandom sample was chosen for this study due to the nature of the research questions requiring students to be enrolled in a health curriculum and methods course designed specifically for pre-service elementary teachers. The researcher did attempt to diversify the sample population by including multiple colleges and universities in the study by contacting all Minnesota American Association of Colleges for Teacher Education institutions to inquire about participation in the study.

The researcher identified post-secondary institutions located in Minnesota to contact in an effort to secure participation of two institutions that offer a health curriculum and methods course and two institutions that offer an interdisciplinary course such as a science, physical education, and health education. The researcher contacted the education department chair at each institution via email (see Appendix C) to determine interest in participation as well as instructor contact information. Once interest from institutions was expressed, the researcher contacted the health education curriculum and methods course instructors for a syllabus to ensure similar content and standards were being addressed in each of the courses at the universities or colleges included in the study (see Appendix D). The researcher worked with

university department chairs and/or deans for approval to conduct the research in their university along with the health education curriculum and methods course instructor. If the university or college required Institutional Review Board (IRB) approval, the researcher submitted to the institution's IRB.

Setting

The study was conducted with multiple universities and/or colleges located in Minnesota. Institutions that participated in the study include: Bethel University which requires a one-credit Health Education curriculum and methods course, Saint Mary's State University which requires a two-credit health curriculum and methods course, and Metropolitan State University, Bethany Lutheran College, and Crown College which require a three-credit interdisciplinary course such as a science, physical education, and health education course. Data was collected during 2017-2018 using a survey through the online vendor Qualtrics.

Data Collection Procedures

Prior to collecting data, approval was received to conduct the study from the Institutional Review Board (IRB) board at Bethel University in St. Paul, Minnesota. The vendor Qualtrics was used to collect the data. A link to the online survey was distributed via university student email and/or a link to the survey from the course site. The email included information on the purpose of the study, what the information will be used for, participants' consent to participate in the study, and a URL link to the survey. An email was sent once the course had been completed to remind students to complete the survey and thank students for their participation. Students were given two weeks to complete the survey.

All participants remain anonymous as no names or student identification numbers were asked on the survey. "Annonymize response" option was selected on the Qualtrics survey to ensure confidentiality.

Field Test

Two higher education professionals and two non-sample individuals selected by the researcher tested the instrument. The purpose of this test was to ensure face validity, identify errors or confusing survey language, and determine the approximate time to complete the survey. Survey distribution and collection was evaluated during the field test. The field participants were asked to provide feedback on instructions, time commitment, language clarity, spelling and grammar errors. Additional non-sample individuals were asked to specifically review the consent form, directions for the survey, and qualitative response questions to identify confusing language and errors. After field-testing was completed, no necessary revisions to the instrument were necessary.

Analysis of Data

Before completing the *t*-test analysis, Levene's Test for Equality of Variances was used for each of the seven standards to ensure that the equal variances assumption for each standard were not violated. Once this was completed, an independent-samples *t*-test analysis in SPSS could be completed for each of the seven standards as well as the overall self-efficacy scores for both independent variables. The dependent variable is self-efficacy scores on the seven health education standards and the independent variable is the credit size and focus of the health curriculum and

methods course (one or two-credit health curriculum and methods course or three-credit interdisciplinary course).

The two text box response questions were analyzed with thematic coding. The researcher first organized and prepared the data for analysis by reading through all open-ended responses at least two times to become familiar with the data. Coding the data occurred during the third data reading. Creswell (2004) states, "coding is the process of organizing the data by bracketing chunks (or text or image segments) and writing a word representing a category in the margins" (p. 197). A combination of emerging and predetermined codes was used for this process. During the subsequent readings, the researcher determined if themes could be categorized.

Limitations and Delimitations

The researcher recognizes several limitations of this study. First of all, the study utilized a sample of college and university pre-service elementary teachers completing either a health education curriculum and methods course or an interdisciplinary course such as a science, physical education, and health education. External validity considerations include a small number of participants; therefore, the researcher is careful about generalizing results to the general population.

Selection issues exist in this study because the students are determined based on enrolled course participants. The researcher does not generalize to all pre-service elementary teachers or all elementary teachers completing a similar course. Although the researcher used a convenient sample, the convenient sample includes multiple colleges or universities which are part of the American Association of Colleges for Teacher Education. Each institution's instructor provided a syllabus that was

reviewed to ensure similar content and standards were being addressed among all institutions included in the study.

Another limitation is the voluntary participation design of the study. The researcher relied on participants to complete the study voluntarily as well as students' ability to comprehend survey questions responding in a way that is true to what they think and believe.

Lastly, a revision of the Professional Standards for Health Educators occurred adding one standard related to content knowledge, but the developers of The Pre-service Health Education National Standards Self-efficacy Scale (PHENSS) determined there were sufficient means to measure preservice teachers' content knowledge so they did not revise it, which may affect the scale's ability to fully measure the standards (Clark, Brey, Clark, 2013).

Ethical Considerations

The ethical principles and guidelines for the protection of human subjects were followed during this study, which are found in The Belmont Report published by the Department of Health, Education, and Welfare. The three basic principles that will be discussed include respect of persons, beneficence, and justice (Office for Human Research Protections, 1978.)

The first basic principle, respect of persons, states that individuals need to be treated as autonomous agents and those with diminished autonomy should be protected (Office for Human Research Protections, 1978). To ensure this, participants were reminded prior to completing the survey that participation is completely voluntary. Before completing the survey, participants read and checked

an informed consent form box that included important information on the research procedure, their purposes, risks and anticipated benefits, a statement offering the subject the opportunity to ask questions and to withdraw at any time from the research, and how to reach the person responsible for the research if any questions should arise. Participants were not allowed to complete the survey unless the informed consent box had been checked, indicating they read and understood the informed consent.

The second principle, beneficence, requires individuals to be treated in an ethical manner and securing their well-being (Office for Human Research Protections, 1978). This means to, "do no harm" (Office for Human Research Protections, 1978, p. 5) and "maximize possible benefits and minimize possible harms" (Office for Human Research Protections, 1978, p. 5). There was minimal threat to the participants in this study. Participant's demographics were not collected during the survey, and all participants remained anonymous as no names or student identification numbers were asked on the survey. Anonymize response had been selected on the Qualtric survey to ensure this.

The last ethical principle to discuss is justice or "fairness in distribution" (Office for Human Research Protections, 1978). All students eligible for extra credit at their university or college completed an additional one-question survey that is not connected to their survey results. This one-question survey allowed participants to submit their email to be put in a gift card drawing for completing the survey.

Chapter 4: Results

Sample

The sample (n) for this study was a convenience sample of elementary education students enrolled or recently enrolled in a health education curriculum and methods course from multiple universities or colleges in Minnesota with similar content and standards. The researcher contacted department chairs from 31 institutions to participate in the study. Of the 31 contacted, 14 responded supporting that the instructor at their institution be contacted to inquire about participating. Six of 14 instructors responded and five institutions participated in the study. Students from the following institutions participated: Bethel University which requires a one-credit health education curriculum and methods course, Saint Mary's University of Minnesota which requires a two-credit health curriculum and methods course, and Metropolitan State University, Bethany Lutheran College, and Crown College which require a three-credit interdisciplinary course such as a science, physical education, and health education course.

A total of 101 responses were collected, however only 75 total students completed the entire survey. Of the 75 students, 71 students identified the institution from which they completed their course. Out of the 71 students, 52 students were enrolled in a one or two-credit methods course and 19 students were enrolled in a three-credit interdisciplinary methods course.

Hypotheses

The following hypothesis was tested in the study.

H1: (H_0:) There is no difference in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the teachers completed a health curriculum and methods course or an inter-disciplinary course such as science, physical education, and health education.

(H_1:) There is a difference in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the teachers completed a health curriculum and methods course or an inter-disciplinary course such as science, physical education, and health education.

Based on the findings, the researcher was able to reject the null hypothesis.

Findings

An independent-samples *t*-test was conducted to compare student self-efficacy scores on each of the Professional Teaching Standards in Health Education for students enrolled in a one or two-credit health curriculum and methods course or a three-credit interdisciplinary course. The Professional Teacher Standards in Health Education (PHENSS) used in this study include (see Appendix G for standards and key elements): Standard I: Candidates assess individual and community needs for health education; Standard II: Candidates plan effective health education programs; Standard III: Candidates implement health education programs; Standard IV: Candidates evaluate the effectiveness of coordinated school health programs; Standard V: Candidates coordinate provision of health education programs and services; Standard VI: Candidates act as a resource person in health education; and

Standard VII: Candidates communicate health and health education needs, concerns, and resources (Frauenknecht, 2005, p. 25).

Levene's Test for Equality of Variances was tested for each of the seven standards. None of the equal variance assumptions were violated (see Table 1).

Table 1

Levene's Test of Equality of Variances and Independent t-tests Comparing 1-2 and 3-Credit Course Students Self-Efficacy

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Standard 1	Equal variances assumed	1.494	.226	3.415	69	.001	2.94231	.86162
Standard 2	Equal variances assumed	1.972	.165	1.878	69	.065	2.05668	1.09531
Standard 3	Equal variances assumed	.001	.976	2.432	69	.018	1.98077	.81450
Standard 4	Equal variances assumed	.023	.879	2.111	69	.038	1.70344	.80686
Standard 5	Equal variances assumed	.180	.672	1.936	69	.057	1.91093	.98683

Standard 6	Equal variances assumed	.001	.977	1.477	69	.144	1.37449	.93088
Standard 7	Equal variances assumed	.008	.928	2.628	69	.011	2.49089	.94767

A p-value helps determine the significance of the results and a p-value of less than .05 is significant. Students in the one or two-credit courses rated their self-efficacy on all standards higher than students in the three credit interdisciplinary courses, with the differences being significant for standards 1, 3, 4, and 7 (see Table 2 and the established p-values described in the bullets that follow).

Table 2

Means and Standard Deviations of Self-Efficacy Scores for Each Standard by Credit Size of Course

Group Statistics

	Credit Size	N	Mean	Std. Deviation	Std. Error Mean
Standard 1	1-2 Credit Course	52	17.9423	3.41515	.47360
	3 Credit Course	19	15.0000	2.56038	.58739
Standard 2	1-2 Credit Course	52	22.8462	4.30405	.59686
	3 Credit Course	19	20.7895	3.39246	.77828
Standard 3	1-2 Credit Course	52	17.9808	3.04535	.42231
	3 Credit Course	19	16.0000	3.01846	.69248
Standard 4	1-2 Credit Course	52	18.0192	3.03890	.42142
	3 Credit Course	19	16.3158	2.92599	.67127
Standard 5	1-2 Credit Course	52	17.3846	3.55436	.49290
	3 Credit Course	19	15.4737	4.01896	.92201
Standard 6	1-2 Credit Course	52	18.2692	3.39039	.47016
	3 Credit Course	19	16.8947	3.69526	.84775
Standard 7	1-2 Credit Course	52	18.5962	3.52726	.48914

3 Credit Course	19	16.1053	3.55738	.81612

The means and standard deviations of self-efficacy scores for each standard by credit size of course should also be noted in detail:

- For standard 1, students in the 1-2 credit courses ($M = 17.94$, $SD = 3.42$) had significantly higher scores than students in the 3 credit courses ($M = 15.00$, $SD = 2.56$), $t\ (69) = 3.42$, $p = .001$. The null hypothesis was rejected.
- For standard 2, the difference between students in the 1-2 credit courses ($M = 22.85$, $SD = 4.30$) and the 3 credit courses ($M = 20.79$, $SD = 3.39$) approached significance, $t\ (69) = 1.88$, $p = .065$. Failed to reject the null hypothesis.
- For standard 3, students in the 1-2 credit courses ($M = 17.98$, $SD = 3.05$) had significantly higher scores than students in the 3 credit courses ($M = 16.00$, $SD = 3.02$), $t\ (69) = 2.43$, $p = .018$. The null hypothesis was rejected.
- For standard 4, students in the 1-2 credit courses ($M = 18.02$, $SD = 3.04$) had significantly higher scores than students in the 3 credit courses ($M = 16.32$, $SD = 2.93$), $t\ (69) = 2.11$, $p = .038$. The null hypothesis was rejected.
- For standard 5, the difference between students in the 1-2 credit courses ($M = 17.38$, $SD = 3.55$) and the 3 credit courses ($M = 15.47$, $SD = 4.02$) approached significance, $t\ (69) = 1.94$, $p = .057$. Failed to reject the null hypothesis.
- For standard 6, there was not a significant difference in the scores from students in the 1-2 credit courses ($M = 18.27$, $SD = 3.39$) compared to students in the 3 credit courses ($M = 16.89$, $SD = 3.70$), $t\ (69) = 1.48$, $p = .144$. Failed to reject the null hypothesis.

- For standard 7, students in the 1-2 credit courses ($M = 18.60$, $SD = 3.53$) had significantly higher scores than students in the 3 credit courses ($M = 16.11$, $SD = 3.56$), $t(69) = 2.63$, $p = .011$. The null hypothesis was rejected.

In summary, students completing a one or two-credit health curriculum and methods course had significantly higher self-efficacy scores on standards one, three, four, and seven compared to students completing a three-credit interdisciplinary course. Additionally, students in the one or two-credit health methods course had self-efficacy scores that were higher on standards 2 and 5 than students in the three-credit interdisciplinary methods course, but the difference was not quite significant. The only standard where there was no real difference was standard six.

As can be seen in Table 3, students overall reported the lowest self-efficacy on Standard 5: Candidates coordinate provision of health education programs and services ($M = 16.92$). Students overall reported the highest self-efficacy on Standard 2: Candidates plan effective health education programs ($M = 22.31$).

Table 3

Combined Descriptive Statistics for Students' Self-Efficacy on Health Education Standards

	N	Minimum	Maximum	Mean	Std. Deviation
Standard 1	75	10.00	24.00	17.2133	3.39432
Standard 2	75	12.00	30.00	22.3067	4.14264
Standard 3	75	9.00	24.00	17.4267	3.14158
Standard 4	75	9.00	24.00	17.5600	3.11596
Standard 5	75	8.00	24.00	16.9200	3.85816
Standard 6	75	8.00	24.00	17.8533	3.44726
Standard 7	75	9.00	24.00	17.8667	3.75008

In this study the researcher investigated the questions:

- What did you do in your health curriculum and methods course that increased your confidence level in these standards?
- What types of curriculum/instruction could be implemented in your health curriculum and methods course to better prepare you in these standards?

The two text box response questions were analyzed with thematic coding. The researcher first organized and prepared the data for analysis by reading through all open-ended responses at least two times to become familiar with the data. Coding the data occurred during the third data reading. A combination of emerging and predetermined codes was used for this process. During the subsequent readings, the researcher determined themes could be categorized. The researcher then tallied the number of student responses for each category.

There were a variety of themes that emerged to address the first question (see Table 4). Taken together, these themes describe at least in part, what postsecondary pre-service elementary education courses did to prepare future teachers on the health education standards. Students completing a one or two-credit health methods courses identified that developing lesson plans, conducting and reviewing research, and reviewing the standards were significant to increasing their confidence. Many students felt that implementing the lesson plans they created, class discussion, and general education on health content helpful as well. Students in the three-credit interdisciplinary methods courses also identified developing and implementing lesson plans as critical to increasing their confidence levels.

Table 4

Students' Responses Identifying What Increased Their Confidence in Curriculum and Methods Course Related to Standards

Themes	1-2-Credit Student Response Rate	3-Credit Student Response Rate	Given Response of Total Students (%)
Developing lesson plans	19	6	35
Implementing lesson plans	6	4	14
Communication	3	3	8
Research	12	3	21
Standards	10	3	18
Education on health content	9	1	14
Professional expertise shared	2	1	4
Discussion	5	1	8

There were a variety of themes that emerged to address the second question, what types of curriculum/instruction could be implemented in your health curriculum and methods course to better prepare you in these standards? (see Table 5). Taken together, they describe at least in part, what postsecondary pre-service elementary education students feel could be implemented in their health curriculum and methods course to better prepare future teachers on the health education standards. Students'

responses were coded based on predetermined and emerging themes that could be categorized and then tallied based on the number of student responses. Students completing a one or two-credit methods course suggested *even more practice*, such as developing more lesson plans and teaching lesson plans, as curriculum that could be implemented to better prepare them. Students felt that more examples and additional *health content instruction* would better prepare them. Students in the three-credit interdisciplinary courses identified additional health content instruction as the most important thing to implement more of in their course. Students also desired more resources and discussion or practice on student assessment.

Table 5

Students' Responses Identifying Curriculum/Instruction That Could be Implemented in Health Curriculum and Methods Course

Themes	1-2-Credit Student Response Rate	3-Credit Student Response Rate	Given Response of Total Students (%)
Developing & implementing lesson plans	11	1	17
Examples	5	0	7
Resources	3	5	11
Assessments	4	4	11
Content instruction on health topics	5	7	17
Communication	4	1	7

Student comments identifying curriculum or instruction that could be implemented for each standard are described via a summarized version of student statements (see Table 6).

Table 6

Students' Comments Identifying Curriculum/Instruction That Could be Implemented in Health Curriculum and Methods Course

Standard	1-2-Credit Health Curriculum and Methods Course	3-Credit Interdisciplinary Course
1: Assess Needs	"Assess needs was my lowest and I think it is because we didn't practice the actual process of assessing needs" "I think that covering assessment of an individual child and different factors to look for in each would be beneficial"	"I think less focus on our test scores and more focus on how to test the students. For example, what do I need to do while assessing student knowledge towards healthy habits and nutrition? Yes, we know the influence of learning and nutrition etc. However, how do we ensure that our students are attaining the information and what do we do with the results?" "More focus on how to assess needs"

2: Plan effective programs	There were no students who had the lowest self-efficacy on Standard 2: Plan effective programs, therefore no students identified specific suggestions on this standard	There were no students who had the lowest self-efficacy on Standard 2: Plan effective programs, therefore no students identified specific suggestions on this standard
3: Implement health education	"Creating learning objectives"	
4: Evaluates effectiveness	"Because of the short time in this class I have not confirmed my skills in the health education area. So I feel as if my effectiveness would come with time and practice of these topics."	
5: Coordinates provisions	"Talking more about organizations that can provide for students and families in need so we are aware of them and can	"It would be helpful to talk more about how to deal with tough topics and conversations between

	intelligently suggest them to those in need" "Coordination is hard because I am new to teaching and assessing this topic, like I said these would most definitely come with time, efforts, and feedback given in this course" "...I really think that maybe if I would have learned or seen examples in which this standard is taught I would have been better prepared" "Maybe providing ideas on how to make connections to others in the community in regard to health" "How to coordinate between other educators, medical professionals, etc."	parents and the general public" "Instruction could add a focus to coordinating resources and events with other staff and experts to ensure we are properly educated on how to begin that process."

	"I feel like I could use more practice coordinating programs for the larger school population, learning how to meet the needs of all how are expecting the program(s)"	
6: Acts as a resource person	"I do not feel completely confident acting as a resource person because I have only taken a few health classes and am not a health professional. I do not believe that I am knowledgeable enough" "I had the lowest score in act as a resource person. I think talking about real-life examples of interaction with administration, principles, and families would help me to better	"Content. I can create effective lessons that support all learning styles but I cannot say that I could confidently discuss most health topics with students. It would be nice to have more content in order to prepare for what we will be teaching students" "More knowledge about health and what to do in certain situations"

	know situations/educational or school groups that I could be involved in would help" "I feel like this is one of the more difficult standards to prepare for because the best way to provide exposure to acting as a resource person is in real life situations. One possible way to try to get exposed to standard 6 is to do more case studies and learn from others' experiences."	
7: Communicates needs	"Talk more about relationship between teacher and parent and if we need permission to talk about things" "I feel that while I have many resources to use for	"...It would be helpful to talk more about how to deal with tough topics and conversations between parents and the general public"

	children that I could incorporate into the classroom. However, I do not feel that I have as much experience with interacting and informing the community on matters beyond living a healthy and holistic life" "Implementing methods for communicating with others"	

Overall, students desire more practice on lesson planning, writing objectives, and teaching. They also desire more discussion on difficult topics such as how to help support students and families. Lastly, they feel more health content knowledge would better prepare them for the future. These student comments describe, at least in part, what postsecondary pre-service elementary education students feel could be implemented in their health curriculum and methods course to better prepare future teachers on the health education standards.

Chapter 5: Discussion, Implications, and Recommendations

Overview of the Study

This study used a mixed methods approach to examine how the self-efficacy of pre-service elementary education teachers (using the Professional Teaching Standards in Health Education) changes after completing a health education curriculum and methods course compared to an interdisciplinary course such as a science, physical education, and health education. The study examined why students believe they possess areas of strength or weakness on certain standards, and what types of curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards.

The two student course populations examined in this study were students enrolled in pre-service elementary education programs from multiple institutions in Minnesota currently taking either a health education curriculum and methods course or taking an interdisciplinary methods course. Students completed a survey, which included the Pre-Service Health Education National Self-Efficacy Scale (PHENSS) the last week of the health curriculum and methods course or during student teaching via an online Qualtrics survey. Two additional text box response questions were included. An independent-samples *t*-test was completed after data was collected utilizing SPSS software to examine self-efficacy level changes on each of the seven subscales for health education curriculum and methods course and then the interdisciplinary course institutions. In addition to examining changes in self-efficacy, this study used text box response questions to evaluate why students believe they possess areas of strengths and weaknesses on certain standards and what type of

curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards. Further analysis was completed to compare the data of health education curriculum and methods course institutions with interdisciplinary course institutions.

Research Questions

1. What difference, if any, exists in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the pre-service teachers completed a health curriculum and methods course or an inter-disciplinary course such as a science, physical education, and health education?
2. On which health education standards do pre-service elementary education teachers score themselves low and communicate a lower self-efficacy?
3. On which health education standards do pre-service elementary education teachers score themselves high and communicate a higher self-efficacy?
4. Why do pre-service teachers feel they have areas of weakness or strength on certain standards?
5. What type of curriculum and instruction could be implemented to improve low self-efficacy levels on certain standards?

Conclusions

To conclude, the researcher will briefly address results for each research question and suggestions for how instructors could change pre-service elementary courses to increase teachers' health education self-efficacy levels.

Research Question 1: What difference, if any, exists in pre-service elementary education teachers' self-efficacy in teaching the Professional Teacher Standards in Health Education based on whether the pre-service teachers completed a health curriculum and methods course or an inter-disciplinary course such as a science, physical education, and health education? The results suggest that enrolling in a one or two-credit course vs. a three-credit interdisciplinary course does make a difference in students' self-efficacy on the Professional Teaching Standards in Health Education. Specifically, the results suggest that students completing a one or two-credit health curriculum and methods course have higher self-efficacy scores on standards one, three, four, and seven compared to students completing a three-credit interdisciplinary course. Based on self-efficacy ratings, it seems that the one or two-credit health curriculum and methods courses better prepare students compared to the three-credit interdisciplinary courses. It is possible that the interdisciplinary course instructors are science or physical education faculty, therefore providing less of a focus or expertise in health education.

Research Question 2: On which health education standards do pre-service elementary education teachers score themselves low and communicate a lower self-efficacy? Students reported the lowest self-efficacy on Standard 5: Candidates coordinate provision of health education programs and services. The coordination of services and resources is often not the responsibility of the classroom teacher; therefore, these results make sense.

Research Question 3: On which health education standards do pre-service elementary education teachers score themselves high and communicate a higher self-

efficacy? Students reported the highest self-efficacy on Standard 2: Candidates plan effective health education programs.

Research Question 4: Why do pre-service teachers feel they have areas of weakness or strength on certain standards? Students completing a one or two-credit course identified creating lesson plans, conducting and reviewing research, and reviewing the standards were significant to increasing their confidence. However, students expressed the need for even more practice in addition to what they are currently required to do. Students felt that implementing the lesson plans they created, class discussion, and general education on health content was critical to increasing their confidence. Several students felt that more examples of how to communicate with parents or other professionals and how to assess students as well as additional health content instruction would better prepare them. Students in the three-credit courses identified developing and implementing lesson plans as critical to increasing their confidence levels. However, they also said that not having enough health content instruction contributed to their lack of confidence.

Research Question 5: What type of curriculum and instruction could be implemented to improve low self-efficacy levels on certain standards? Students completing a one or two-credit course identified "developing and implementing lesson plans as curriculum that could be implemented" as part of the course that could better prepare them for classroom instruction. Implementing the lesson plans created, class discussion, and general education on health content was critical to increasing their confidence and should be retained. Students in the three-credit courses identified developing and implementing lesson plans as critical to increasing their

confidence levels and should be retained. These students desire more resources and discussion and practice related to assessment which could be implemented to better prepare them.

Implications for Educational Practice

The results of the study have implications for pre-service elementary education preparation programs. As stated in previous literature, there is evidence to support the inclusion of a required health methods course for preservice elementary education teachers (Clark, Brey, Clark, 2013). This study further supports that claim. The results suggest that one or two-credit health curriculum and methods courses may better prepare students compared to a three-credit interdisciplinary course as students are learning and developing skills for three content areas versus focusing on only health education content and skills. Many students completing the three-credit course expressed a desire for *more time spent on health content* which may lead to higher self-efficacy on the Professional Teaching Standards in Heath Education.

The results of the study have implications for pre-service elementary education preparation course instructors. The results demonstrated students believe they possess areas of strength on Standard 2: Candidates plan effective health education programs due to lots of hands on projects and practice such as creating a lesson plan and teaching a lesson. Although this is an area of strength, many students commented they desire more practice. Requiring students to create multiple lessons or an entire unit plan may provide the extra practice they are desiring. Curriculum and methods instructors may want to increase the amount of lesson or unit planning in addition to practicing teaching the lessons created.

The results also demonstrate what type of curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards, specifically Standard 5: Candidates coordinate provision of health education programs and services. Students expressed the desire for more discussion on organizations to help support students and families. Curriculum and methods instructors could have students research online resources and/or discuss local, state, and national organizations that are available for students and families. These resources could be provided via links on the course page. Instructors could implement case studies for students to work through and/or provide examples of when certain organizations may be accessed for students and families. Students also desire additional information on how to coordinate resources between other professionals and/or examples of how to make connections with community members. Curriculum and methods instructors could invite professionals into their classroom to speak to students. Instructors may provide videos and resources focusing on ways they can incorporate community members or other professionals in their future classroom. Class brainstorming opportunities for teachers to coordinate and make connections with community members may be beneficial.

Lastly, students expressed a desire to practice coordinating programs. One way this could be implemented is by having students create and organize a professional development program for teachers or staff on a health-related topic. This could be on a hot topic in the health field, best teaching practice in health education, or providing possible ideas related to teaching health education in the classroom. Students could be required to collaborate with other educators in an assigned school

to create a lesson or unit plan. This would require students to work with an experienced teacher and may lead to the opportunity to teach the created lesson plan in the teacher's classroom. Instructors can use this valuable information to adjust curriculum in their current course.

Recommendations for Future Research

This study could be expanded to further explore the topic. Conducting a longitudinal study that follows the preservice elementary education teachers through their first few years to evaluate their levels of self-efficacy on the Professional Teaching Standards in Health Education may provide valuable data and validate the results. Additional research could be completed with a larger sample size in order to generalize to all preservice elementary teachers and preparation programs.

Concluding Comments

It is evident that health education impacts students' knowledge, skills, and attitudes related to physical, mental, emotional, and social health and wellness and may lower student risk behavior around: alcohol, tobacco, and other drugs, mental and emotional health, and other critical health topics (New Hampshire Department of Education, 2012). Unhealthy behaviors may be developed during childhood and prevention is key to decreasing chronic disease (American Cancer Association, 2008) such as obesity. Teachers and schools have the ability to provide programs and curriculum that encourage healthy behaviors, which reduce risky behaviors and ultimately have a positive impact on academic performance and success (Centers for Disease Control and Prevention, 2016).

This study can aid in advocating for health education methods courses becoming part of the required curriculum for preservice elementary education teachers. Data will help instructors of health education method courses develop and implement curriculum to increase students' self-efficacy on the Professional Teaching Standards in Health Education. Incorporating ample time for students to practice creating and implementing lesson or unit planning is critical. Including examples, case studies, professional guest speakers, and additional hands-on activities, specifically related to coordinating health education programs and services will aid in increasing students' self-efficacy on the Professional Teaching Standards in Health Education. The results also suggest that one or two-credit health curriculum and methods courses, which are specifically focused on teaching elementary education teacher candidates about the importance of teaching health education to children, may better prepare future teachers than more complex interdisciplinary courses.

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Appendices

Appendix A

Consent Form

The purpose of this research is to examine the perceptions of pre-service elementary education teachers regarding their pre-service preparation programs, with respect to self-efficacy and using Professional Teaching Standards in their future classroom. The study will explore why pre-service elementary teachers believe they possess areas of weakness on certain standards and what type of university preparation program curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards. This study is being conducted by Lisa Kepple, a doctoral candidate in the Educational Leadership in K-12 Administration program at Bethel University.

Your participation in this study is voluntary. You may choose not to participate at any time. If you decide to participate in this study, you may withdraw at any time without penalty. Your decision to participate or not participate will not have an effect your grade in this course or relationship with the instructor in any way.

The procedure involves you filling out an online survey that takes approximately 15 minutes. You may complete the survey during or outside of class. The responses will remain anonymous as no names or other identifying information will be collected in order to protect your confidentiality. The results may be published or presented at professional meetings, but identities of the survey participants will not be revealed. The results of this study will help your instructor plan and deliver curriculum that will potentially improve student self-efficacy using the Professional Teaching Standards.

At the end of the survey you will be directed to a separate survey that is not linked to your results in any way for you to submit your email to be entered in a gift card drawing.

If you have any questions about the research or your participation, please contact the researcher: Lisa Kepple 612-770-6229 patlis@bethel.edu or my faculty advisor: Louise Wilson louise-wilson@bethel.edu.

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:

- **You have read the above information**
- **You voluntarily agree to participate**
- **You are at least 18 years of age**

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

- o Agree
- o Disagree

Directions: Please read each item and use the following scale to indicate your level of confidence in being able to complete the behavior described in each item listed below.

1- Not Confident

2- Slightly Confident

3- Somewhat Confident

4- Fairly Confident

5- Quite Confident

6- Completely Confident

1. I can access health information about social and cultural environments, growth and development factors, needs, and interests of students.
2. I can identify behaviors that are health enhancing and those that are detrimental to health.
3. I can create a student health profile based on student observation and age–related data.
4. I can determine health education needs after obtaining and reviewing health information.

5. The school district where you are employed does not have the required representative personnel on the school health advisory committee. How confident are you that you would be able to recruit the necessary people to staff this committee?
6. I can develop a logical scope and sequence plan for a health education program.
7. I can develop appropriate measurable learner objectives for health lessons and unit plans.
8. How confident are you that you could write a measurable learner objective for a lesson on a given health topic?
9. How confident are you in your ability to design educational strategies consistent with the stated learner objectives?
10. The administration of your school district is supportive of a Coordinated School Health Program, but knows there are many barriers to successful implementation. How confident are you that you could assist the administration in analyzing the factors that would support the successful implementation of a Coordinated School Health Program?
11. How confident are you that you could use media to meet the needs of a variety of different learning styles?
12. I can competently implement planned health education programs.
13. The principal of your building informs you that some of the students are not successfully meeting the learning objectives of the health education curriculum. How confident are you that you would be able to modify the

objectives and instructional strategies to improve learning outcomes for all students?

14. How confident are you that you could develop appropriate tools to assess and evaluate student achievement of program objectives?
15. Your school district has a written plan to track students' progress in their achievement of the Health Education Standards. How confident are you that you could use this plan to evaluate your students?
16. Given evaluation data regarding health education programs, how confident are you that you could identify areas of the program needing improvement?
17. The principal of your school has provided you the results of the district's program assessment document. The document provides percentages of students who have successfully met various program objectives. How confident are you that you could determine which health programs would need modification?
18. Your principal has requested that you coordinate the health education curriculum with the district's nutrition and food service director, faculty and staff health promotion administrator, and physical education instructor. How confident are you that you could develop a plan to meet this request?
19. How confident are you of your ability to facilitate cooperation among health educators, other teachers, and appropriate school staff?
20. How confident are you that you will be able to collaborate with health educators in other schools and community agencies?

17. How confident are you that you could organize professional development programs for teachers, other school personnel, community members, and other interested individuals?
18. The administration of your school district has asked that you obtain national health data for school-age children. How confident are you that you can retrieve these data from an Internet source?
19. I can establish effective relationships with students, parents, staff, and health professionals who need assistance in solving health-related problems.
20. The Parent Teacher Organization in your school district has requested your assistance in providing health information to their organization. How confident are you that you could provide them with appropriate health information?
21. The administration has provided you with a list of providers of health education materials (catalogs from health agencies and commercial groups). How confident are you that you could select credible health education resources that would meet the needs of your students?
22. I am able to interpret the purpose of health education and to apply concepts and theories in health education.
23. How confident are you of your ability to anticipate the community's reaction to controversial issues within the health education program? (i.e. parental notification of student's BMI, abstinence-only sexuality education)
24. I can use a variety of communication methods to share health information with students, parents, school personnel, and community members.

25. I am able to encourage dialogue between health care providers in my community and the students and families who are their consumers.

Standard 1 - Assess needs Your score:

Standard 2- Plan effective programs Your score:

Standard 3- Implements health education Your score:

Standard 4- Evaluates effectiveness Your score:

Standard 5- Coordinates provisions Your score:

Standard 6- Acts as a resource person Your score:

Standard 7- Communicates needs Your score:

Based on your answers, identify which standards you had the highest score. These are the standards you feel most confident.

What did you do in your health curriculum and methods course that increased your confidence level in these standards?

Standard 1 - Assess needs Your score:

Standard 2- Plan effective programs Your score:

Standard 3- Implements health education Your score:

Standard 4- Evaluates effectiveness Your score:

Standard 5- Coordinates provisions Your score:

Standard 6- Acts as a resource person Your score:

Standard 7- Communicates needs Your score:

Based on your answers, identify which standards you had the lowest scores. These are the standards you feel least confident.

What types of curriculum/instruction could be implemented in your health curriculum and methods course to better prepare you in these standards?

Please enter the name of the institution where you completed this course at:

Appendix B

Thank you for completing this survey. Your responses will remain anonymous. Please type your email address in the text box provided to be entered in the gift card drawing.

Appendix C

Dear _____,

My name is Lisa Kepple. I am a doctoral candidate in the Educational Leadership in K-12 Administration program at Bethel University. I am also an instructor at Bethel University in the Human Kinetics and Applied Health Science Department. I am conducting a study to fulfill my degree requirements and I would like to invite your elementary education students to participate in a brief 15-minute survey regarding their preparation. The survey can be completed during or outside of class time. The results of this study will help instructors plan and deliver curriculum that will potentially improve students' self-efficacy using the Professional Teaching Standards.

I would like your approval to contact the instructor of the Health Curriculum and Methods course at your institution as well as any contact information you can provide for the instructor.

If you have any questions or would like me to send a longer description of the study, please let me know.

Lisa Kepple, Doctoral Candidate

3900 Bethel Drive, St. Paul, MN 55112
Cell: 612-770-5229
Email: patlis@bethel.edu

Appendix D

Dear _____,

My name is Lisa Kepple. I am a doctoral candidate in the Educational Leadership in K-12 Administration program at Bethel University. I am also an instructor at Bethel University in the Human Kinetics and Applied Health Science Department. I am conducting a study to fulfill my degree requirements and I would like to invite your elementary education students to participate. I recently contacted the Chair of the Education Department at your institution and received approval to contact you about the study.

The purpose of this study is to examine the perceptions of pre-service elementary education teachers regarding their pre-service preparation programs, with respect to self-efficacy and using Professional Teaching Standards in their future classroom. The study will explore why pre-service elementary teachers believe they possess areas of weakness on certain standards and what type of university preparation program curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards.

If you decide to assist with inviting participants, please send a copy of your syllabus to the Researcher: patlis@bethel.edu. The researcher will compare and contrast syllabi from potential institutions to ensure consistency. Once this is complete, the survey link will be shared with you.

You will be asked to share an email link to an online survey with students in your health education curriculum and methods course the last week of the course. You may choose to have students complete the survey during or outside of class. The survey takes approximately 15 minutes to complete. The responses will remain anonymous as no names and other identifying information will be used in the study. The results may be published or presented at professional meetings, but identifies will not be revealed. Students who complete the survey will be entered in to win a gift card.

Your assistance and student participation is voluntary. You may choose not to assist and/or your students may choose not to participate. If you or your students decide not to participate in this study, you may withdrawal at any time without penalty. Your decision to participate or not participate will not affect your current or future relationship with your institution or Bethel University in any way.

This study directly benefits you and your students. The results of this study will help you plan and deliver curriculum that will potentially improve students' self-efficacy using the Professional Teaching Standards.

If you have any questions about the research, your involvement, and/or research participants' involvement, please contact the researcher: Lisa Kepple 612-770-6229 patlis@bethel.edu or my Faculty Advisor: Louise Wilson louise-wilson@bethel.edu.

Your participation is greatly appreciated. Thank you in advance.

Lisa Kepple, Doctoral Candidate

3900 Bethel Drive, St. Paul, MN 55112

Cell: 612-770-6229

Email: patlis@bethel.edu

Appendix E

Hello Students!

I am conducting a study to fulfill my degree requirements in the Educational Leadership in K-12 Administration program at Bethel University and would like to invite you to participate in a pilot test. The purpose of a pilot test is to assess reliability of my instrument prior to full study implementation.

The purpose of this study is to examine the perceptions of pre-service elementary education teachers regarding their pre-service preparation programs, with respect to self-efficacy and using Professional Teaching Standards in their future classroom. The study will explore why pre-service elementary teachers believe they possess areas of weakness on certain standards and what type of university preparation program curriculum and/or instruction could be implemented to improve low self-efficacy levels on certain standards.

The survey takes approximately 15 minutes to complete. The responses will remain anonymous as no names and other identifying information will be used in the study. The results may be published or presented at professional meetings, but identifies will not be revealed. If you are willing to participate in the field test, please respond to this email.

Your participation is voluntary. You may choose not to participate. If you decide to participate in this pilot test, you may withdrawal at any time without penalty. Your decision to participate or not participate will not affect your current or future relationship with Bethel University or me in any way.

Please let me know if you have any questions about the research or pilot test.

Your participation is greatly appreciated. Thank you in advance.

Lisa Kepple, Doctoral Candidate

3900 Bethel Drive, St. Paul, MN 55112

Email: patlis@bethel.edu

Appendix F

from: **Lisa Kepple** <patlis@bethel.edu>
to: jkclark@ilstu.edu
date: Wed, Jul 27, 2016 at 9:40 AM
subject: PHENSS questions
mailed-by: bethel.edu

Hello,

I am interested in using your Pre-Service Health Education National Standards Self-Efficacy Scale as part of my dissertation. Is there any additional information I should know about the scale? Have there been any revisions on the scale?

Thank you,
Lisa Kepple

Lisa Kepple | Human Kinetics and Applied Health Science

Bethel University | 3900 Bethel Drive | St Paul, MN 55112

e: patlis@bethel.edu | p: 651.635.2383

from: **Clark, Jeffrey** <jkclark@ilstu.edu>
to: Lisa Kepple <patlis@bethel.edu>
date: Wed, Jul 27, 2016 at 11:43 AM
subject: RE: PHENSS questions
mailed-by: ilstu.edu
signed-by: illinoisstateuniversity.onmicrosoft.com

Lisa,

Thank you for your inquiry. We have not made any revisions to the scale. It should be noted that the scale was constructed using the original national standards. Since the completion of the scale, the national standards added one more standard (knowledge). This standard is not measured on our scale. We believe there are more

comprehensive instruments to measure health knowledge and have decided not to make a revision.

Best of luck with your research.

Jeff

from: **Lisa Kepple** <patlis@bethel.edu>
to: "Clark, Jeffrey" <jkclark@ilstu.edu>
date: Tue, Jun 13, 2017 at 1:27 PM
subject: Re: PHENSS questions
mailed-by: bethel.edu

Hello Jeff,

Thank you for your work on developing the Pre-Service Health Education National Standards Self-Efficacy Scale. I am contacting you to officially request permission to use some or all of the scale as part of my dissertation.

Thank you,
Lisa Kepple

Lisa Kepple | Human Kinetics and Applied Health Science

Bethel University | 3900 Bethel Drive | St Paul, MN 55112

e: patlis@bethel.edu | p: 651.635.2383

from: **Clark, Jeffrey** <jkclark@ilstu.edu>
to: Lisa Kepple <patlis@bethel.edu>
date: Tue, Jun 13, 2017 at 1:45 PM
subject: RE: PHENSS questions
mailed-by: ilstu.edu
signed-by: illinoisstateuniversity.onmicrosoft.com

Lisa,

Thank you for your recent inquiry. You most certainly can use this scale. I would appreciate learning a little about your proposed research.

Jeff

Jeffrey K. Clark, HSD, MCHES
Professor/Chairperson
Department of Health Sciences
Illinois State University
Normal, Illinois 61790
(309) 438-8329
(309) 438-2450 (fax)

Appendix G

The standards and key elements of the AAHE/NCATE Professional Teacher Standards in Health Education used to develop the Pre-Service Health Education National Self-Efficacy Scale (PHENSS) used in this study:

Standard I: Candidates assess individual and community needs for health education.

Key Element A: Candidates obtain health-related data about social and cultural environments, growth and development factors, needs, and interests of students.

Key Element B: Candidates distinguish between behaviors that foster and those that hinder well-being.

Key Element C: Candidates determine health education needs based on observed and obtained data.

Standard II: Candidates plan effective health education programs.

Key Element A: Candidates recruit school and community representatives to support and assist in program planning.

Key Element B: Candidates develop a logical scope and sequence plan for a health education program.

Key Element C: Candidates formulate appropriate and measurable learner objectives.

Key Element D: Candidates design educational strategies consistent with specified learner objectives.

Standard III: Candidates implement health education programs.

Key Element A: Candidates analyze factors affecting the successful implementation of health education and Coordinated School Health Programs (CSHPs).

Key Element B: Candidates select resources and media best suited to implement program plans for diverse learners.

Key Element C: Candidates exhibit competence in carrying out planned programs.

Key Element D: Candidates monitor educational programs, adjusting objectives and instructional strategies as necessary.

Standard IV: Candidates evaluate the effectiveness of coordinated school health programs.

Key Element A: Candidates develop plans to assess student achievement of program objectives.

Key Element B: Candidates carry out evaluation plans.

Key Element C: Candidates interpret results of program evaluation.

Key Element D: Candidates infer implications of evaluation findings for future program planning.

Standard V: Candidates coordinate provision of health education programs and services.

Key Element A: Candidates develop a plan for coordinating health education with other components of a school health program.

Key Element B: Candidates demonstrate the dispositions and skills to facilitate cooperation among health educators, other teachers, and appropriate school staff.

Key Element C: Candidates formulate practical modes of collaboration among health educators in all settings and other school and community health professionals.

Key Element D: Candidates organize professional development programs for teachers, other school personnel, community members, and other interested individuals.

Standard VI: Candidates act as a resource person in health education.

Key Element A: Candidates utilize computerized health information retrieval systems effectively.

Key Element B: Candidates establish effective consultative relationships with those requesting assistance in solving health-related problems.

Key Element C: Candidates interpret and respond to requests for health information.

Key Element D: Candidates select effective educational resource materials for dissemination.

Standard VII: Candidates communicate health and health education needs, concerns, and resources.

Key Element A: Candidates interpret concepts, purposes, and theories of health education.

Key Element B: Candidates predict the impact of societal value systems on health education programs.

Key Element C: Candidates select a variety of communication methods and techniques in providing health information.

Key Element D: Candidates foster communication between health care providers and consumers.

(Frauenknecht, 2005, p. 25)

Appendix H

The American Association for Health Education revised the health education teacher preparation standards and key elements in 2008:

Standard I: Content Knowledge. Candidates demonstrate the knowledge and skills of a health literate educator.

Key Element: Candidates describe the theoretical foundations of health behavior and principles of learning.

Key Element B: Candidates describe the National Health Education Standards.

Key Element C: Candidates describe practices that promote health or safety.

Key Element D: Candidates describe behaviors that might compromise health or safety.

Key Element E: Candidates describe disease etiology and prevention practices.

Key Element F: Candidates demonstrate the health literacy skills of an informed consumer of health products and services.

Standard II: Needs Assessment: Candidates assess needs to determine priorities for school health education.

Key Element A: Candidates access a variety of reliable data sources related to health.

Key Element B: Candidates collect health-related data.

Key Element C: Candidates infer needs for health education from data

obtained.

Standard III: Planning: Candidates plan effective comprehensive school health education curricula and programs.

Key Element A: Candidates design strategies for involving key individuals and organizations in program planning for School Health Education.

Key Element B: Candidates design a logical scope and sequence of learning experiences that accommodate all students.

Key Element C: Candidates create appropriate and measure-able learner objectives that align with assessments and scoring guides.

Key Element D: Candidates select developmentally appropriate strategies to meet learning objectives.

Key Element E: Candidates align health education curricula with needs assessment data and the National Health Education Standards.

Key Element F: Candidates analyze the feasibility of implementing selected strategies.

Standard IV: Implementation: Candidates implement health education instruction.

Key Element A: Candidates demonstrate multiple instructional strategies that reflect effective pedagogy, and health education theories and models that facilitate learning for all students.

Key Element B: Candidates utilize technology and resources that provide instruction in challenging, clear and compelling ways and engage diverse learners.

Key Element C: Candidates exhibit competence in classroom management.

Key Element D: Candidates reflect on their implementation practices, adjusting objectives, instructional strategies and assessments as necessary to enhance student learning.

Standard V: Assessment. Candidates assess student learning.

Key Element A: Candidates develop assessment plans.

Key Element B: Candidates analyze available assessment instruments.

Key Element C: Candidates develop instruments to assess student learning.

Key Element D: Candidates implement plans to assess student learning.

Key Element E: Candidates utilize assessment results to guide future instruction.

Standard VI: Administration and Coordination. Candidates plan and coordinate a school health education program.

Key Element A: Candidates develop a plan for comprehensive school health education (CSHE) within a coordinated school health program (CSHP).

Key Element B: Candidates explain how a health education program fits the culture of a school and contributes to the school's mission.

Key Element C: Candidates design a plan to collaborate with others such as school personnel, community health educators, and students' families in planning and implementing health education programs.

Standard VII: Being a Resource. Candidates serve as a resource person in health education.

Key Element A: Candidates use health information resources.

Key Element B: Candidates respond to requests for health information.

Key Element C: Candidates select educational resource materials for dissemination.

Key Element D: Candidates describe ways to establish effective consultative relationships with others involved in Coordinated School Health Programs.

Standard VIII: Communication and Advocacy. Candidates communicate and advocate for health and school health education.

Key Element A: Candidates analyze and respond to factors that impact current and future needs in comprehensive school health education.

Key Element B: Candidates apply a variety of communication methods and techniques.

Key Element C: Candidates advocate for school health education.

Key Element D: Candidates demonstrate professionalism.

(American Association for Health Education, 2008).