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Examining Preservice Teachers' Self-Efficacy Development Throughout Teacher Education

Jenny Christine Hernandez
Lindenwood University

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by

Jenny Christine Hernandez

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A Dissertation submitted to the Education Faculty of Lindenwood University in partial fulfillment of the requirements for the degree of

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This Dissertation has been approved as partial fulfillment

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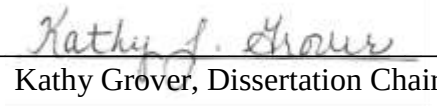


Dr. Kathy Grover, Dissertation Chair — Date 04/07/2020

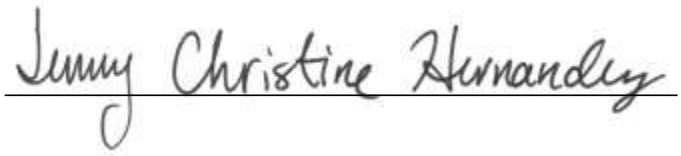
Dr. Brian Wilson, Committee Member — Date 04/07/2020

Dr. Robyn Gordon, Committee Member — Date 04/07/2020

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

Full Legal Name: Jenny Christine Hernandez

Signature:  Date: 04/07/2020

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Abstract

Teacher preparation plays an integral role in the success of American education, and many programs are not adequately preparing teachers for the classroom (Guha, Hyler, & Darling-Hammond, 2017b; National Council on Teacher Quality [NCTQ], 2018). The purpose of this study was to better understand preservice teacher self-efficacy development and perceptions of teacher education program effectiveness for program improvement. Bandura's (1977) theory of self-efficacy guided this study. Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale was distributed three times throughout the fall 2019 semester to preservice teachers completing their student teaching practicum to detect changes in self-efficacy levels. Perceptual data on the impact of Bandura's (1977) sources of self-efficacy was gathered with The Sources of Preservice Teacher Self-Efficacy Scale. Preservice teachers were also interviewed on perceptions of self-efficacy belief sources, helpful aspects of teacher education, and challenging aspects of teacher education. No significant differences were found in preservice teachers' self-efficacy levels; however, their sense of self-efficacy was consistently high. Vicarious experiences were found to be the most potent source of self-efficacy for preservice teachers. While verbal persuasion and mastery experiences also had considerably affected efficacy beliefs, emotional and physiological states had a much lower influence. The impact of the professional support system and practical relevance of coursework were perceived to be the most helpful aspects of teacher education. Challenging aspects of teacher education included a lack of relevance or practical application of coursework and a disconnect in the professional support system.

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Chapter One: Introduction

In 2016, United States Secretary of Education, John B. King Jr., called for nationwide teacher education program improvement. The positive impact highly prepared teachers have on students was cited as a major reason for improvement ("Improving Teacher Preparation," 2016). King asserted, "Prospective teachers need good information to select the right program, school districts need access to the best trained professionals…and preparation programs need feedback about their graduates' experiences in schools to refine their programs" (as cited in "Improving Teacher Preparation," 2016, para. 4).

In this chapter, the problem of the study is contextualized through the need for American teacher education program improvement and viewed through the framework of teacher self-efficacy. The purpose of this study is to more clearly understand preservice teacher self-efficacy development and perceptions of teacher education programs through quantitative and qualitative methods. Results from this study will fill a gap in research since much of the previous research in this area used exclusively quantitative methods to measure teacher efficacy levels at single points in teacher education (Ma & Cavanaugh, 2018; Martins, Costa, & Onofre, 2015; Pfitzner-Eden, 2016; Zee & Kooman, 2016). This chapter includes definitions of terms and limitations to the study and concludes with a summary.

Background of the Study

The American public education system has undergone many changes, reflecting social, political, and cultural shifts (Robinson, 2017; Zeichner, 2016b). In the colonial era, teachers received minimal training (Robinson, 2017). The first formal American

teacher education programs came with Horace Mann's education reform efforts and the birth of the common school system in the 1830s (Robinson, 2017; Teacher education, 2018).

As the demand for highly qualified teachers increased, teacher candidates at state normal schools began to receive formal education on both content and pedagogical strategies (Teacher education, 2018; Zeichner, 2016b). Teacher certification programs and requirements were still inconsistent across the country (Teacher education, 2018). Despite the growth of normal schools, many teachers prepared to enter the profession by completing a local school district-based program (Zeichner, 2016b). By the middle of the 20th century, most normal schools had transformed into state universities, and state certification systems placed a new emphasis on pedagogical coursework and passing tests of pedagogical theory (Robinson, 2017; Teacher education, 2018). At this point in history, according to Zeichner (2016b), "Universities held a virtual monopoly on preparing teachers in the U.S." (p. 108).

Recently, researchers have found that while both teacher education and professional clinical training are significantly influential for preservice teacher learning, clinical experiences, such as the student teaching practicum, more strongly influence preservice teacher learning (AlAjmi, Al-Dhafiri, & Al-Shammari, 2016; Seymour, Donnelly, & Lindauer, 2018; Sharma & Nuttal, 2016). Integrating coursework and clinical experiences is critical because teaching is rooted in practice rather than theory (Stein & Stein, 2016). Many experts have called for further reform of teacher education programs to place more emphasis on rich clinical experiences for preservice teachers with

subsequent reflection opportunities to encourage pedagogical growth (AlAjmi et al., 2016; Stein & Stein, 2016).

Since the 1970s, the theory of self-efficacy has been of interest to researchers seeking to understand teachers' beliefs regarding their professional capacity (Hendricks, 2016; Morris, Usher, & Chen, 2017). A teacher's effort level, endurance of effort, self-monitoring and motivation skills, and choices in life can be predicted based on his or her self-efficacy beliefs (Bandura, 1977, 1997; Maddux & Stanley, 1986). Efficacy beliefs are a stronger predictor of one's ultimate level of accomplishment than an individual's past performance (Bandura, 1977; Maddux & Stanley, 1986).

A positive link has been established between teacher efficacy and student outcomes (Giles & Kent, 2016; Martins et al., 2015; Zee & Koomen, 2016). The classroom teacher's efficacy beliefs have a broad spectrum of consequences for both the teacher and students (Bandura 1997; Giles & Kent, 2016; Zee & Koomen, 2016). Thus, teacher efficacy development is an area of focus for preservice teacher education improvement (Martins et al., 2015; Morris et al., 2017; Pfitzner-Eden, 2016).

Theoretical Framework

In a 1976 study on minority student achievement, the RAND Corporation measured teacher self-efficacy for the first time (Armor et al., 1976). Self-efficacy is the belief, or confidence, that one can successfully exhibit the behavior required to obtain a particular outcome (Bandura, 1977; Ma & Cavanaugh, 2018). Armor et al. (1976) combined responses to two questionnaire items regarding teachers' beliefs on their impact on student performance and found that a teacher's sense of efficacy had a greater impact on student achievement than any aspect of the teacher's background. Armor et al.

(1976) framed the concept of teacher efficacy through Rotter's (1966) social learning theory and loci of control.

Central to social learning theory is the idea that an individual's behavior expectancies affect their future choices and behaviors (Rotter, 1966). According to Rotter (1966), a behavior expectancy is "A generalized attitude, belief, or expectancy regarding the nature of the causal relationship between one's own behavior and its consequences" (p. 2). Furthermore, Rotter (1966) stated that behavior expectancies have the potential to affect an individual's behavior choices in a wide variety of situations. Rotter (1966) stated those who perceive a relationship between their behavior and reinforcements will experience a greater impact on expectancies than those who do not believe their actions or attributes are directly related to reinforcements. In turn, expectancy beliefs will affect behavior choices (Bandura, 1977; Rotter, 1966). In 1977, Bandura further clarified the theory of self-efficacy, emphasizing humans' reflective capability and the impact of that capability on future behavior and self-efficacy beliefs. An individual's self-efficacy beliefs have a sizable influence on task selection, initial effort level, and coping strategies when faced with a taxing situation (Bandura, 1977; Hendricks, 2016). More so than past performance, efficacy beliefs are a strong predictor of an individual's ultimate level of accomplishment. (Bandura, 1977, 1997; Maddux & Stanley, 1986). Bandura's (1977) theory of self-efficacy and its sources served as a framework to guide research methods and analysis in the present study.

Self-efficacy beliefs are generalizable and have implications for education (Bandura, 1977; Hendricks, 2016; Webb-Williams, 2017). In the field of education, teacher efficacy has been a topic of research over the last several decades (Hendricks,

2016; Morris et al., 2017). A positive relationship has been established between teacher efficacy and student outcomes (Giles & Kent, 2016; Hendricks, 2016; Martins et al., 2015; Zee & Koomen, 2016). Considering the importance of teacher efficacy, the sources of teacher self-efficacy beliefs have become an area of interest (Furtado Nina et al., 2016; Morris et al., 2017; Pfitzner-Eden, 2016).

Within the theory of self-efficacy, it is hypothesized that an individual's self-efficacy beliefs are derived from four primary sources (Bandura, 1977; Hendricks, 2016). According to Bandura (1977), sources include mastery experiences, vicarious experiences, verbal persuasion, and emotional and physiological states. There is a general lack of research on the sources of self-efficacy in an educational context (Hendricks, 2016; Morris et al., 2017; Pfitzner-Eden, 2016).

In a recent review, Morris et al. (2017) examined 82 empirical studies regarding teacher efficacy. Only 19 of the 82 studies investigated the sources of teacher self-efficacy (Morris et al., 2017). Several researchers recommend more research on sources of self-efficacy in the area of education to better understand the sources' impact on an individual's efficacy belief development and his or her resulting actions (Furtado Nina et al., 2016; Hendricks, 2016; Morris et al., 2017; Pfitzner-Eden, 2016). In emerging studies, teachers' experiences and cognitive processes have been investigated to better understand how they contribute to teachers' feelings of professional capability or incapacity (Furtado Nina et al., 2016; Giles & Kent, 2016; Morris et al., 2017; Pfitzner-Eden, 2016).

Statement of the Problem

Teacher preparation has a direct impact on student learning; a strong teacher is the most important in-school factor in a student's academic achievement (Guha, Hyler, & Darling-Hammond, 2017b; Stein & Stein, 2016). Thus, high-quality teacher preparation programs play an integral role in the success of American public schools (Guha et al., 2017b; National Council on Teacher Quality [NCTQ], 2016; Stein & Stein, 2016). However, researchers have concluded that there are widespread issues with teacher preparation programs in the United States (Guha et al., 2017b; NCTQ, 2016; 2018a; Stein & Stein, 2016). Many traditional and alternative teacher preparation programs are not adequately preparing teachers for the classroom (NCTQ, 2018a).

Stein and Stein (2016) found a direct correlation between the degree of teacher preparedness and the number of teachers leaving the profession. When schools are unable to retain high-quality teachers, turnover rates are high (Guha et al., 2017b; Stein & Stein, 2016). According to Carver-Thomas and Darling-Hammond (2017), "High turnover rates reduce achievement for students whose classrooms are directly affected, as well as for other students in the school" (p. 30). In order to cope, some school districts resort to hiring new and inexperienced teachers to fill teaching positions for which they are unprepared (Guha, Hyler, & Darling-Hammond, 2017a). Inadequate teacher preparation resulting in high turnover rates can compromise a school district's long-term improvement plans, causing issues at a systemic level within the school (Guha, Hyler, & Darling-Hammond, 2017b).

Positive links have been established between teacher self-efficacy and students' academic performance, teacher behaviors and practices related to classroom quality, and

teacher well-being (Martins et al., 2015; Zee & Koomen, 2016). Self-efficacy is malleable in early learning, so the first years of teaching are critical, especially experiences in teacher education and the student teaching practicum (Giles & Kent, 2016; Martins et al., 2015). To improve public education in the United States, teacher education reform is critical (AlAjmi et al., 2016; Guha et al., 2017b; NCTQ, 2016; 2018a; Stein & Stein, 2016).

Purpose of the Study

The purpose of this project was to better understand preservice teachers' self-efficacy development and perceptions of teacher education program effectiveness. Qualitative and quantitative data were collected to describe the sources of preservice teacher self-efficacy beliefs and how those beliefs develop and change throughout teacher education. Qualitative data regarding preservice teachers' perceptions of the most effective and most challenging aspects of teacher education programs were also collected. Results may be used to inform teacher education program improvement efforts.

Research questions and hypotheses. The following research questions and hypotheses guided the study:

1. What differences exist in preservice teacher self-efficacy at the end of their coursework, beginning of their student teaching practicum, and end of their student teaching practicum?

$H1_0$: There are no significant differences in preservice teacher self-efficacy at the end of coursework, beginning of student teaching practicum, and end of student teaching.

$H1_a$: There are significant differences in preservice teacher self-efficacy at the end of coursework, beginning of student teaching practicum, and end of student teaching.

2. What sources of self-efficacy did preservice teachers perceive to be most impactful?
3. What aspects of teacher education programs do preservice teachers perceive to be most effective in preparing them to work in the classroom?
4. What aspects of teacher education programs do preservice teachers perceive to be most challenging in preparing them to work in the classroom?

Significance of the Study

In an effort to fill a gap in research and inform teacher education program improvement, the formation of teacher self-efficacy beliefs during the student teaching practicum and perceptions of preparation program effectiveness were investigated. A general lack of research in the area of preservice teacher efficacy exists, especially research using qualitative data collection methods or research focusing on the sources of preservice teacher efficacy (Giles & Kent, 2016; Hendricks, 2016; Ma & Cavanagh, 2018; Martins et al., 2015; Pfitzner-Eden, 2016). Longitudinal studies to better understand the changes in preservice teacher self-efficacy throughout their professional development have been suggested (Ma & Cavanagh, 2018; Zee & Kooman, 2016). A teacher's self-efficacy beliefs are connected to both student and teacher outcomes (Bandura, 1997; Giles & Kent, 2016; Martins et al., 2015; Zee & Koomen, 2016). Generally, teachers with a strong sense of self-efficacy are more effective in classroom management and instruction, and they are also more likely to try innovative practices and

engage in professional learning than teachers with low levels of self-efficacy (Bandura, 1997; Giles & Kent, 2016; Martins et al., 2015).

Strong teacher preparation programs are critical to the success of public schools in the United States (Guha et al., 2017b; Stein & Stein, 2016). Widespread issues exist with American teacher preparation programs (Guha et al., 2017b; NCTQ, 2018a; Stein &Stein, 2016). Many traditional and alternative teacher preparation programs are not adequately preparing teachers for the classroom (NCTQ, 2018a). Inadequate preparation of teachers results in high turnover rates, and student achievement suffers (Guha et al., 2017b; Stein & Stein, 2016). American teacher education program improvement is necessary (AlAjmi et al., 2016; Guha et al., 2017b; NCTQ, 2018b; Stein & Stein, 2016).

According to Giles and Kent (2016), “Teacher education programs play an important role in the development of teacher candidates' self-efficacy and identity" (p. 34). Thus, teacher efficacy development is an area of focus for preservice teacher education improvement (Martins et al., 2015; Morris et al., 2017; Pfitzner-Eden, 2016). A gap in research exists, and further studies, which include qualitative methods, are needed to gain a deeper understanding of preservice teachers’ self-efficacy beliefs and their formation (Furtado Nina et al., 2016; Hendricks, 2016; Ma & Cavanagh, 2018; Pfitzner-Eden, 2016). Considering the impact of teacher self-efficacy, the importance of clinical experience, and the need for adequate teacher preparation, preservice teachers’ self-efficacy development during the student teaching practicum and perceptions of preparation program effectiveness were investigated. A clearer understanding of the development of self-efficacy beliefs and perceptions of teacher preparation programs may reveal areas of focus for preservice teacher education improvement.

Definition of Key Terms

For the purposes of this study, the following terms are defined:

Coursework. Coursework encompasses both methods courses that focus on how to teach a specific subject and content coursework where the content of a K-12 subject or discipline is the focus (NCTQ, 2018b).

Mentor teacher. The mentor teacher is the certified K-12 classroom teacher who helps develop the skills of a preservice teacher in a clinical placement. The mentor teacher is assigned to the preservice teacher by a teacher preparation program leader. (Hicks, 2018).

Preservice teacher. The preservice teacher is an individual with no previous teaching employment, also referred to as the teacher candidate (McElwee, Regan, Hudson Baker, & Weiss, 2018).

Student teaching practicum. The student teaching practicum is the final clinical experience where preservice teachers experience opportunities to acquire and demonstrate instructional competence, learn curricula, and reflect on effective teaching practices (Brownson, 2018). The preservice teacher is supervised by a mentor teacher and a university supervisor throughout the student teaching practicum (Brownson, 2018).

Delimitations, Limitations, and Assumptions

The scope of the study was bounded by the following delimitations:

Time frame. The study data collection was conducted during the fall 2019 semester.

Location of the study. The study was conducted at undergraduate teacher education institutions in the southwest region of a Midwestern state.

Sample. The sample consisted of university students enrolled in teacher education programs at universities in the southwest region of a Midwestern state.

Criteria. Participants who were entering their student teaching practicum in the fall 2019 semester were considered when selecting the sample.

The following limitations were identified in this study:

Sample demographics. The sample was a limitation because the focus of the study was on one region of one state and was limited to one semester.

Response rate. The number of responses received from participants was a limitation. In general, the response rate was low. Although the number of survey responses may have increased due to the convenience of the electronic survey, some participants chose not to complete all three rounds of surveys in the study. The number of participants who volunteered to participate in interviews may have been limited due to time commitment. Video chat interviews were used to increase convenience for participants.

Instruments. Data were collected from responses to survey questions over a series of three survey distributions. The ranges of survey responses were limited, and surveys did not allow for clarification by participants (Fraenkel, Wallen, & Hyun, 2019). The Sources of Preservice Teacher Self Efficacy Scale and interview questions were developed by the researcher, limiting the reliability and validity of data collected from their administration (Ary, Jacobs, Sorensen, & Walker, 2019; Fraenkel et al., 2019). During interviews, participants may have been hesitant to answer candidly; therefore, a comfortable rapport to increase participant comfort was intentionally established (Creswell & Creswell, 2018; Fraenkel et al., 2019).

The following assumptions were accepted:

1. The responses of the participants were offered honestly and willingly.
2. The participants understood the survey items.
3. The sample was representative of the general population of preservice teachers entering the student teaching practicum in fall 2019.

Summary

This study was designed to quantitatively and qualitatively investigate preservice teacher self-efficacy development and perceptions of teacher education programs throughout the student teaching practicum. Several aspects of teacher education programs have been investigated for the purpose of program improvement (AlAjmi et al., 2016; Seymour et al., 2018; Sharma & Nuttal, 2016; Stein & Stein, 2016). Experts have emphasized the importance of clinical experiences in preservice teacher pedagogical growth (AlAjmi et al., 2016; Stein & Stein, 2016). Additionally, a positive link has been established between teacher self-efficacy and student and teacher outcomes, highlighting teacher efficacy development as an area for future researchers to study for the purpose of teacher education program improvement (Giles & Kent, 2016; Martins et al., 2015; Morris et al., 2017; Pfitzner-Eden, 2016; Zee & Koomen, 2016).

Chapter One included an overview of this research project. In Chapter Two, literature and previous research are reviewed to clarify the scope and purpose of the study. Chapter Two begins with the theoretical framework of social learning theory and the concept of self-efficacy. Detailed research and background are included for each of the four theorized sources of self-efficacy. General effects of self-efficacy beliefs are discussed, along with the implications of self-efficacy in the context of teaching. Finally,

an overview of teacher education programs is presented alongside the research regarding the influence of teacher preparation on preservice teacher self-efficacy.

Chapter Two: Review of Literature

Teacher education program improvement is key to increase the quality of the American education system (Stein & Stein, 2016). A link between teacher self-efficacy and positive student and teacher outcomes has been discovered (Martins et al., 2015; Zee & Koomen, 2016). The purpose of the study is to collect quantitative and qualitative data regarding the formation and sources of teacher self-efficacy beliefs along with preservice teacher perceptions to better understand teacher self-efficacy belief development and potential implications for teacher education program improvement.

This chapter includes an overview of Bandura's (1977) self-efficacy framework and relevant research on self-efficacy. The framework was used to guide the development of the research questions, selection of data collection instruments, and data analysis techniques. The effects of self-efficacy and each of the four theorized sources of self-efficacy are defined, and relevant research is presented. The implications of self-efficacy in the context of teaching are discussed along with research relevant to preservice teacher self-efficacy the sources of preservice teacher self-efficacy. Finally, an overview of teacher preparation program research is presented.

Theoretical Framework

Following Armor et al.'s (1976) RAND study, two distinct, yet complementary, strands of teacher self-efficacy theory research emerged (Bandura, 1977; Tschannen-Moran, Hoy, & Hoy, 1998). Armor et al. (1976) framed their findings in Rotter's (1966) loci of control theory and its relation to behavior expectancies. Rotter (1966) stated individuals who believe they are generally in control of the results of their actions have an internal locus of control. Individuals who perceive other forces, such as fate or luck,

to affect the outcomes of their behaviors have an external locus of control (Rotter, 1966). An individual's locus of control can impact his or her expectancy that a particular action or attribute will result in a given reinforcement in the future (Rotter, 1966). Although Rotter's work is not the focus of this study, his loci of control theory is presented because it was used to frame the results of the landmark RAND study (Armor et al., 1976).

The second strand of self-efficacy research is focused on Bandura's (1977) work, specifically an individual's belief that he or she possesses the ability to accomplish a task (Tschannen-Moran et al., 1998). Bandura's (1977) self-efficacy theory is centered on an individual's efficacy expectancies. Bandura (1977) distinguished outcome expectancies and efficacy expectancies. An outcome expectancy is a belief that a particular course of action will result in a given outcome, while an efficacy expectancy is a belief that the individual possesses the capability to successfully carry out the actions required to produce the desired outcome (Bandura 1977). An individual's self-efficacy beliefs affect his or her effort level and persistence, connecting one's thoughts and actions (Bandura, 1977, 1997; Maddux & Stanley, 1986).

Tschannen-Moran et al. (1998) distinguished Rotter and Bandura's strands of self-efficacy research: "An individual may believe that a particular outcome is internal and controllable—that is, caused by the actions of the individual—but still have little confidence that he or she can accomplish the necessary actions" (p. 211). Essentially, Rotter's (1966) loci of control are centered on outcome expectancies or the beliefs that a given outcome is affected by the individual's actions. In contrast, Bandura's (1977) self-efficacy theory focuses on an individual's beliefs regarding his or her capacity to

successfully exhibit the necessary behaviors to obtain a particular outcome or efficacy expectancies. According to Tschannen-Moran et al. (1998):

> The efficacy question is, "Do I have the ability to organize and execute the actions necessary to accomplish a specific task at a desired level?" The outcome question is, "If I accomplish the task at that level, what are the likely consequences?" Temporally, efficacy expectations precede and help form outcome expectations. (p. 210)

Efficacy expectations can differ in three dimensions: magnitude, generality, and strength (Bandura, 1977; Maddux & Stanley, 1986). The magnitude of a person's self-efficacy beliefs can vary based upon the complexity or difficulty level of a task (Bandura, 1977). Efficacy expectations also differ based on generality (Bandura, 1977). Some efficacy beliefs are generalizable to many tasks, while others are not (Bandura, 1977; Maddux & Stanley, 1986). Tschannen-Moran et al. (1998) pointed out that unlike other self-conceptions, self-efficacy is unique in that the same individual's self-efficacy levels can vary greatly depending on the task. Efficacy expectations can also differ in strength (Bandura, 1977; Maddux & Stanley, 1986).

According to Morris et al. (2017), "Self-efficacy is not the simple product or sum of one's experiences; the effect of an experience on one's sense of efficacy depends on how a particular event is cognitively processed" (p. 798). Self-efficacy beliefs are an individual's interpretation of information regarding their capabilities, not their actual performance (Bandura, 1977, 1997; Furtado Nina et al., 2016; Morris et al., 2017; Tschannen-Moran et al., 1998). Through cyclical cognitive processing of one's

experiences, self-efficacy beliefs are shaped (Furtado Nina et al., 2016; Morris et al., 2017; Tschannen-Moran et al., 1998).

Effects of Self-Efficacy

An individual's self-efficacy beliefs serve as a bridge between one's thoughts and actions (Bandura, 1977; Morris et al., 2017). Although self-efficacy beliefs are not based on performance, these estimations of competence may affect how an individual uses the skills they possess (Bandura, 1977; Tschannen-Moran et al., 1998). According to Bandura (1977), "People process, weigh, and integrate diverse sources of information concerning their capability, and they regulate their choice behavior and effort expenditure accordingly" (p. 212). Self-efficacy beliefs are cyclical, the way an individual interprets information regarding efficacy will influence his or her level of efficacy, which then affects his or her performance (Tschannen-Moran et al., 1998).

Self-efficacy beliefs affect an individual's perception and, in turn, his or her behavior (Bandura, 1977, 1997; Furtado Nina et al., 2016; Hendricks, 2016; Tschannen-Moran et al., 1998). Self-efficacy beliefs impact persistence level and self-regulation (Bandura, 1977, 1997; Hendricks, 2016). Individuals with strong efficacy expectations tend to take more active roles in tasks, exhibit higher levels of effort, and perceive mistakes as learning opportunities (Bandura, 1977, 1997).

In contrast, those with weaker efficacy beliefs are less likely to persevere, and their failures are "unlikely to serve as a fertile source of promising strategies" (Bandura, 1997, p. 94). Morris et al. (2017) found that professionals with low levels of self-efficacy were more vulnerable to workplace stress than their colleagues with higher efficacy

levels. Those with low self-efficacy perceive tasks to be more difficult than they are and are more susceptible to feeling overwhelmed in the workplace (Morris et al., 2017).

Generally, an individual's effort level, endurance of effort, self-monitoring, and motivation skills can be predicted based on his or her self-efficacy beliefs (Bandura, 1977, 1997; Hendricks, 2016; Maddux & Stanley, 1986; Tschannen-Moran et al., 1998). According to Bandura (1977), an individual's choices in life are affected by beliefs about his or her self-efficacy. More so than past performance, efficacy beliefs are a strong predictor of an individual's ultimate level of accomplishment (Bandura, 1977; Hendricks, 2016; Maddux & Stanley, 1986).

Sources of Self-Efficacy

Within the framework of the self-efficacy theory, Bandura (1977) stated that an individual's self-efficacy beliefs are derived from four primary sources. The most potent source of self-efficacy is mastery experiences (Bandura, 1977, 1997; Pfitzner-Eden, 2016). Other sources include vicarious experiences, verbal persuasion, and emotional and physiological states (Bandura, 1977, 1997).

Mastery experiences. Mastery experiences are successes or failures experienced by an individual that contributes to self-efficacy (Bandura, 1977; Pfitzner-Eden, 2016). Mastery experiences can be conceptualized as "the achievement of goals through direct action" (Morris et al., 2017, p. 812). Of the sources of self-efficacy, mastery experiences have the greatest influence on self-efficacy beliefs, especially when an individual experiences clear success or failure (Bandura 1977; Maddux & Stanley, 1986). These experiences have a greater influence on self-efficacy beliefs than other sources because

they are based upon an individual's personal experiences (Bandura, 1977, 1997; Maddux & Stanley, 1986).

Vicarious experiences. Vicarious experiences refer to situations in which individuals observe others overcoming difficult situations without adverse consequences (Bandura, 1977; Pfitzner-Eden, 2016). Vicarious experiences have the second greatest influence on self-efficacy beliefs; when an individual watches another person succeed in a taxing situation, it may bolster his or her self-efficacy in a similar situation (Bandura 1977; Maddux & Stanley, 1986; Morris et al., 2017). Vicarious experience is less dependable than mastery experience because the focus is on someone else's capabilities (Bandura, 1977, 1997). However, when a task is new or when the observer perceives the individual modeling to be like oneself, vicarious experiences may have a stronger effect on self-efficacy beliefs (Bandura, 1977, 1997; Maddux & Stanley, 1986; Morris et al., 2017).

Verbal persuasion. Verbal persuasion refers to suggestions from individuals perceived as credible, which may lead people to believe they can successfully cope with an overwhelming situation (Bandura, 1977; Pfitzner-Eden, 2016). Verbal persuasion is a relatively easy and convenient way to build an individual's self-efficacy beliefs, but expectations induced by verbal persuasion are easily diminished when compared to those established by an individual's own experiences (Bandura, 1977). The influence of verbal persuasion is mediated by several factors, including the perceived credibility and attractiveness of the source (Bandura, 1977, 1997; Maddux & Stanley, 1986). Verbal persuasion has a lesser impact on an individual's self-efficacy beliefs than mastery experiences or vicarious experiences; however, its impact may be greater when an

individual has little experience in a given field (Bandura, 1977; Maddux & Stanley, 1986; Morris et al., 2017).

Emotional and physiological states. The emotional and physiological states are the emotional or physiological responses elicited by situations that are stressful and taxing (Bandura, 1977; Pfitzner-Eden, 2016). Interpretation of emotional and physiological arousal affect efficacy; individuals expect to be successful when they are not agitated or anxious (Bandura 1977, 1997; Morris et al., 2017). Bandura (1997) stated that moderate amounts of emotional and physiological arousal lead to optimal performance. Emotional and physiological arousal give an individual information about what they can do in any situation (Morris et al., 2017).

Teacher Efficacy

An individual's sense of self-efficacy can vary greatly depending on the task (Tschannen-Moran et al., 1998). Therefore, teacher efficacy is a teacher's belief that he or she is capable of performing the specific behaviors required to experience success in a teaching and learning related environment (Mahler, Großsched, & Harms, 2018). Teacher efficacy has been the focus of much research since Bandura's seminal work in the 1970s (Furtado Nina et al., 2016). In an analysis of research on teacher efficacy, Mahler et al. (2018) found that teacher self-efficacy is especially influential in three areas, "teachers' professional engagement, effective instructional strategies, and openness to 'demanding' students" (p. 2). A teacher's sense of efficacy within the classroom has a wide range of consequences for both the teacher and students (Bandura 1997; Giles & Kent, 2016; Gulistan, Hussan, & Mushtaq, 2017; Webb-Williams, 2017; Zee & Koomen, 2016).

Researchers agree that a teacher's sense of efficacy has an important impact on student performance (Armor et al., 1976; Bandura, 1997; Mahler et al., 2018; Zee & Koomen, 2016). Teachers with higher efficacy levels are more likely to work to find more efficient ways to promote student learning, are more receptive to new ideas, and tend to engage in helping behaviors as opposed to criticism when faced with student mistakes (Tschannen-Moran et al., 1998). A teacher's self-efficacy beliefs affect how he or she structures teaching and learning within the classroom (Bandura, 1997; Giles & Kent, 2016). Giles and Kent (2016) found that teachers with high self-efficacy maintain a greater academic focus in the classroom and are more likely to try new practices when compared to their peers with lower levels of self-efficacy.

While teacher efficacy levels have been linked to instructional behaviors, practices, and student achievement; they are also related to the teacher's commitment to the profession and attitude toward education (Armor et al., 1976; Aslan & Bakir, 2017; Bandura, 1997; Martins et al., 2015; Morris et al., 2017; Tschannen-Moran & Hoy, 2001; Zee & Koomen, 2016). Not only is a teacher's sense of efficacy the best predictor of commitment to the teaching profession, but it also affects their overall views and attitudes toward education (Bandura, 1997). Teachers who possess a higher level of instructional efficacy hold the belief that all students are teachable, and negative influences can be overcome with effective teaching (Bandura, 1997). When teachers have high levels of self-efficacy, they tend to create positive classroom environments that are conducive to student learning (Aslan & Bakir, 2017). Teachers with a low level of instructional efficacy believe there is little they can do to reach challenging students (Bandura, 1997). Teachers with a strong sense of efficacy more deeply engage in staff development

and are more receptive to new ideas (Giles & Kent, 2016; Tschannen-Moran et al., 1998). Self-efficacy has a broad range of impacts for both teachers and students alike (Webb-Williams, 2017; Zee & Kooman, 2016).

Preservice Teacher Self-Efficacy

Self-efficacy beliefs are most malleable at the early stages of teaching, and efficacy levels of teachers with experience are not easily changed (Bandura, 1977; Giles & Kent, 2016; Morris et al., 2017). Coursework during teacher education programs has a positive effect on preservice teacher self-efficacy; however, clinical experiences have a greater influence on teacher self-efficacy (Martins et al., 2015; Morris et al., 2017). Clinical experiences, such as the student teaching practicum, are the most powerful way to influence teacher self-efficacy beliefs because preservice teachers are given the opportunity to apply the knowledge and skills acquired during their coursework in a classroom setting (Morris et al., 2017). According to Martins et al. (2015), there is a clear relationship between preservice teachers' self-efficacy beliefs and their experiences during the student teaching practicum. This opportunity supports the preservice teacher's understanding that the knowledge acquired throughout teacher education programs is applicable and useful in the classroom (Morris et al., 2017).

Preservice teachers with a strong sense of self-efficacy generally feel more confident, capable, and are more effective in managing the classroom, presenting lessons, and facilitating classroom discussions (Bandura, 1997; Morris et al., 2017). Generally, preservice teachers possess high levels of self-efficacy (Demirtaş, 2018; Frazier, Bendixen, & Hoskins, 2019; Giles & Kent, 2016). According to Frazier et al. (2019),

"Prospective teachers felt quite confident in their abilities and that teaching was a job they could do and one that they would enjoy" (p. 267).

Preservice teacher self-efficacy has been recently investigated through both quantitative and qualitative methods (Aslan & Bakir, 2017; Demirtaş, 2018; Frazier et al., 2019; Giles & Kent, 2016). Demirtaş (2018) performed a quantitative examination of preservice teacher self-efficacy using Tschannen-Moran and Hoy's (2001) Teacher Sense of Efficacy Scale and found that preservice teacher self-efficacy was high across all subcategories for both male and female preservice teachers. Subcategories included efficacy for instruction, efficacy for classroom management, and efficacy for student engagement (Tschannen-Moran & Hoy, 2001). Similarly, Giles and Kent (2016) found that preservice teachers possessed high levels of self-efficacy before completion of the teacher education program. Additionally, Aslan and Bakir (2017) found that pre-service teacher perceptions of teaching self-efficacy and competence were high. Frazier et al. (2019) used qualitative methods to investigate preservice teacher self-efficacy levels and found that preservice teachers possessed high levels of positive self-efficacy and confidence. Such high levels of self-efficacy "may seem naïve to seasoned educators and educational researchers, it is important to remember that this is likely a logical starting point for many beginning preservice teachers" (Frazier et al., 2019, p. 269).

Self-efficacy beliefs are task specific, and while some self-efficacy beliefs are generalizable, others are not (Bandura, 1977; Maddux & Stanley, 1986; Tschannen-Moran et al., 1998). Lemon and Garvis (2018) found a significant difference between preservice teachers' self-efficacy levels across eight learning areas, which included English, mathematics, technology, dance, drama, media arts, music, and visual arts.

Preservice teachers' self-efficacy levels were highest in English and math, followed by technology; however, efficacy levels were lowest in dance and music (Lemon & Garvis, 2017). Similarly, Giles and Kent (2016) found preservice teachers possessed high self-efficacy levels for technology in instruction.

Research on changes preservice teacher self-efficacy levels during teacher education has resulted in conflicting findings (Berkant & Baysal, 2018; Berg & Smith, 2018). Preservice teacher self-efficacy development is a topic of interest because efficacy levels of experienced teachers are not easily changed (Furtado Nina et al., 2016; Giles & Kent, 2016; Hendricks, 2016). Tschannen-Moran and Hoy's (2001) Teacher Sense of Efficacy Scale has been used in various studies to detect changes in preservice teacher self-efficacy over time (Berkant & Baysal, 2018; Berg & Smith, 2018). Berkant and Baysal (2018) found no significant change in preservice teacher self-efficacy levels before and after a semester consisting of theoretical and practical courses in education. In contrast, Berg and Smith (2018) found a significant increase in preservice teacher self-efficacy levels between the beginning and the end of the final practicum. As a result, researchers emphasize the need for further research on preservice teacher self-efficacy development (Berkant & Baysal, 2018; Berg & Smith, 2018; Furtado Nina et al., 2016; Giles & Kent, 2016; Hendricks, 2016).

Sources of Preservice Teacher Self-Efficacy

Recently, the sources of preservice teacher self-efficacy have been investigated (Giles & Kent, 2016; Martins et al., 2015; Morris et al., 2017; Pfitzner-Eden, 2016). Findings are consistent with Bandura's (1977) four sources of self-efficacy (Furtado Nina et al., 2016; Giles & Kent, 2016; Martins et al., 2015; Morris et al., 2017; Pfitzner-Eden,

2016). Preservice teacher self-efficacy beliefs are influenced by mastery experiences, vicarious experiences, verbal persuasion, and emotional and physiological states (Martins et al., 2015; Morris et al., 2017; Pfitzner-Eden, 2016).

Pfitzner-Eden (2016) found mastery experiences most significantly predict preservice teacher self-efficacy. The most influential mastery experiences during the student teaching practicum include teaching, learning, and the characteristics of a class (Martins et al., 2015). According to Giles and Kent (2016), "Well supported preservice teacher mastery experiences lead to positive teaching efficacy and positive learning experiences for public school students while helping prevent unsuccessful experiences that can lead to negative teaching efficacy" (p. 36).

Although mastery experiences significantly affect an individual's self-efficacy beliefs, other sources of efficacy may have a stronger effect on an individual's self-efficacy beliefs when a task is new (Bandura, 1977). Preservice teachers gain vicarious experience during teacher education (Giles & Kent, 2016; Martins et al., 2015; Pfitzner-Eden, 2016). Vicarious experiences come primarily from observation of other teachers, especially the mentor teacher (Martins et al., 2015).

The impact of verbal persuasion may be greater when an individual has little experience in a given field (Bandura 199; 1997). Verbal persuasion has particular importance for teachers beginning their careers (Furtado Nina et al., 2016; Pfitzner-Eden, 2016). Preservice teachers receive verbal persuasion in the form of feedback during conversations after lessons (Martins et al., 2015). Positive words, encouragement, guidance, and advice from experienced teachers provide beginning teachers with relevant feedback that can increase a new teacher's sense of efficacy (Furtado Nina et al., 2016;

Pfitzner-Eden, 2016). Teacher education programs should give detailed feedback to preservice teachers to facilitate reflection and growth (Giles & Kent, 2016).

According to Morris et al. (2016), emotional and physiological states are the least studied source of teacher self-efficacy. Results of research on the effect of emotional and physiological states on preservice teacher self-efficacy are conflicting (Furtado Nina et al., 2016; Pfitzner-Eden, 2016). Furtado Nina et al. (2016) found that emotional and physiological states were the only source that did not influence teachers' training in preservice. In contrast, Pfitzner-Eden (2016) found that emotional and physiological states strongly contributed to preservice teacher self-efficacy; however, their effect was mediated by mastery experiences.

A significant association exists among the four sources of self-efficacy, and teacher education programs play a critical role in teacher self-efficacy development (Furtado Nina et al., 2016; Giles & Kent, 2016). "It seems probable that during a practicum experience, preservice teachers are faced with considerable information from each of the four sources and thus may reevaluate their self-efficacy beliefs in the face of the new evidence obtained" (Berg & Smith, 2018, p. 531). Considering the importance of self-efficacy beliefs, researchers recommend that the sources of self-efficacy are integrated into teacher preparation programs (Berg & Smith, 2018; Martins et al., 2015; Menon & Sadler, 2018; Morris et al., 2017; Pfitzner-Eden, 2016; Şahin, 2017).

Teacher Preparation

Teacher education and development are ongoing throughout an educator’s career, and the foundation lies in preservice teacher preparation (Verma, 2017). Preservice teacher preparation is vital for teacher retention, after their first year in the classroom,

teachers who are inadequately trained leave at more than twice the rate of those who received rigorous preparation (Guha et al., 2017b, p. 38). "Teacher education programs play an important role in the development of teacher candidates' self-efficacy and identity" (Giles & Kent, 2016, p. 34). Although teacher education programs vary in structure and quality, they all have the potential to be improved (NCTQ, 2018a; Zeichner, 2016a).

Teacher preparation is comprised of both education and training (AlAjmi et al., 2016; Sharma & Nuttal, 2016). Education takes the shape of coursework and theoretical study, while training consists of clinical experiences within classrooms (AlAjmi et al., 2016; Sharma & Nuttal, 2016). AlAjmi et al. (2016) found both education and training are significantly influential for pre-service teacher learning.

Although coursework and clinical experiences are important components of teacher preparation, clinical experience more significantly impacts teacher learning (AlAjmi et al., 2016). Thus, an argument exists for a greater focus on clinical experiences (AlAjmi et al., 2016; Seymour et al., 2018; Stein & Stein, 2016). Numerous experts have suggested increasing clinical experiences that are integrated with coursework (AlAjmi et al., 2016; Berg & Smith, 2018; Berkant & Baysal, 2018; Giles & Kent, 2016; Morris et al., 2017; NCTQ, 2019). Researchers assert that coursework should be applicable and useful in the classroom (Morris et al., 2017; NCTQ, 2019; Sharma & Nuttal, 2016).

Some proponents of increased clinical experience focus far less on coursework, citing a disconnect between theory and practice in education (Stein & Stein, 2016). In an examination of teacher education programs in the United States, Finland, and Norway;

Jenset, Klette, and Hammerness (2018) found a separation between practice and coursework. Furthermore, a recent analysis of American teacher preparation programs revealed that content presented during coursework is not always aligned with current practices in school districts (NCTQ, 2019). It is clear that a disconnect between theory and practice exists in teacher education (Foong & Nolan, 2018; Medula, 2017; NCTQ, 2019; Stein & Stein, 2016). "Lectures and practicum are usually conducted in different physical settings that may vary in ideology, philosophy, and inherent practice" (Foong & Nolan, 2018, p. 49). Preservice teachers do not receive adequate opportunities to connect practical teaching strategies to learning during coursework (Jenset et al., 2018). Stein and Stein (2016) asserted, “Teacher candidates need to spend much more time practicing than theorizing” (p. 196).

The student teaching practicum can be a valuable opportunity for preservice teachers to build on coursework through practical application (Berg & Smith, 2018; Berkant & Baysal, 2018; Giles & Kent, 2016; Martins et al., 2015; Morris et al., 2017; NCTQ, 2019). Nearly 200,000 preservice teachers participate in student teaching as a capstone experience each year (NCTQ, 2016, p. 1). According to the National Council on Teacher Quality (2017), there are two critical components for success during the student teaching practicum, the opportunity to learn how to provide effective instruction from a qualified mentor and the provision of valuable feedback from the university supervisor.

The mentor teacher plays an essential role in the student teaching practicum experience (Martins et al., 2015; NCTQ, 2016; 2017; Pfitzner-Eden, 2016). “The cooperating [mentor] teacher should be a model of effective teaching practices and be

able to offer the student teacher high-quality feedback and guidance" (NCTQ, 2017, p.2). Despite the integral role of the mentor teacher, the vast majority of teacher education programs do not mention those mentor teachers should be effective instructors or capable mentors when communicating qualifications to school districts (NCTQ, 2016; 2017). Experts recommend that teacher education programs clearly communicate that to supervise a preservice teacher, mentors must be effective instructors who can mentor adults (NCTQ, 2016; 2017). It is also recommended that teacher education program representatives should assume an active role in screening potential mentors (NCTQ, 2016; 2017). When teacher education program representatives are involved in mentor selection, preservice teachers have better experiences (NCTQ, 2016; 2017).

The role of the university supervisor is also critical to preservice teacher success (NCTQ, 2016; 2017). After a recent survey of preservice teachers' experiences, Meyer (2016) found that while mentor teachers observed preservice teachers and provided feedback often, university supervisors performed observations and gave feedback less frequently. When preservice teachers receive adequate support from their instructors, their sense of belonging and teacher self-efficacy increases (Alpaslan, Ulubey, & Yildirim, 2018). The National Council on Teacher Quality (2017) recommends that preservice teachers should be observed at least five times throughout the student teaching practicum. Observation of the preservice teacher provides university supervisors the opportunity to assess the teacher candidate's level of mastery (Giles & Kent, 2016; NCTQ, 2017). Following observations, university supervisors should give detailed feedback to preservice teachers to facilitate reflection and growth (Giles & Kent, 2016;

NCTQ, 2017). The provision of feedback and reflection can also enhance the connection between coursework and field experiences (Foong & Nolan, 2018; Giles & Kent, 2016).

Teacher education is an important aspect of preservice teacher self-efficacy development (Giles & Kent, 2016). High-quality teacher preparation is a key factor in teacher turnover (Guha et al., 2017b). Teacher education programs can be improved to better prepare preservice teachers (NCTQ, 2018b; Zeichner, 2016a).

Summary

Chapter Two began with an overview of Bandura's (1977) theoretical framework of self-efficacy. The concept of self-efficacy was detailed, and research on the effects of self-efficacy and the four theorized sources of self-efficacy was presented. Research and implications regarding teacher self-efficacy, preservice teacher self-efficacy, and the sources of preservice teacher-self efficacy were discussed. Chapter Two is concluded with a presentation of research relevant to teacher preparation programs.

In Chapter Three, the methodology of the study is outlined. The problem and purpose of the study are presented alongside the research questions. The details of this mixed-method study are presented. Research methods include a definition of the population and sample, qualitative and quantitative data collection instruments, data collection procedures, and data analysis. Chapter Three concludes with ethical considerations.

Chapter Three: Methodology

In Chapter Three, the methodology of the study is outlined. The problem and purpose of the study are described and related to the research questions. Both the quantitative and qualitative aspects of this mixed-method study are presented. The population and sample are defined, and data collection instruments are described. Data collection and analysis procedures are outlined, along with ethical considerations.

Problem and Purpose Overview

The quality of United States teacher preparation programs directly affects teacher quality and student success (Guha et al., 2017b; Stein & Stein, 2016). Inadequate teacher preparation, resulting in high turnover rates, compromises student achievement and school improvement efforts (Guha et al., 2017b; NCTQ, 2018a; Stein &Stein, 2016). Teacher education program improvement is a key step in improving American education overall (AlAjmi et al., 2016; Guha et al., 2017b; NCTQ, 2018b; Stein & Stein, 2016). One potential area of focus for improvement is the formation of teacher efficacy (Giles & Kent, 2016). Teacher self-efficacy has been linked to numerous positive student and teacher outcomes (Martins et al., 2015; Zee & Koomen, 2016).

There is a lack of research on the formation of preservice teachers' self-efficacy beliefs (Furtado Nina et al., 2016; Martins et al., 2015; Pfitzner-Eden, 2016). Further quantitative and qualitative research into the formation of teacher self-efficacy beliefs, including their sources and change over time, is needed (Furtado Nina et al., 2016; Ma & Cavanagh, 2018; Pfitzner-Eden, 2016). A clearer understanding of self-efficacy belief development and implications of efficacy beliefs could inform teacher education program improvement (Ma & Cavanagh, 2018; Pfitzner-Eden, 2016; Zee & Kooman, 2016).

The purpose of this study was to collect quantitative and qualitative data to describe the sources of preservice teacher self-efficacy beliefs and determine if there are significant differences among self-efficacy levels throughout the student teaching practicum. Qualitative data was collected to better understand preservice teachers' perceptions of the most effective and most challenging aspects of teacher education programs. The findings of this study may reveal areas in need of focus for teacher education program improvement efforts.

Research questions and hypotheses. The following research questions and hypotheses guided this study:

1. What differences exist in preservice teacher self-efficacy at the end of their coursework, beginning of their student teaching practicum, and end of their student teaching practicum?

   $H1_0$: There are no significant differences in preservice teacher self-efficacy at the end of coursework, beginning of student teaching practicum, and end of student teaching.

   $H1_a$: There are significant differences in preservice teacher self-efficacy at the end of coursework, beginning of student teaching practicum, and end of student teaching.

2. What sources of self-efficacy did preservice teachers perceive to be most impactful?
3. What aspects of teacher education programs do preservice teachers perceive to be most effective in preparing them to work in the classroom?

4. What aspects of teacher education programs do preservice teachers perceive to be most challenging in preparing them to work in the classroom?

Research Design

Mixed method research combines qualitative data collection and quantitative data collection methods into one study (Ary et al., 2019; Creswell & Creswell, 2018; Mills & Gay, 2019). A mixed-method approach includes data collection from a variety of sources to gain a more comprehensive understanding of the research questions than quantitative or qualitative data alone (Ary et al., 2019; Creswell & Creswell, 2018; Mills & Gay, 2019). A mixed design will allow for a complete understanding of the issue, including generalizable quantitative results from a larger number of participants and detailed qualitative results to more clearly understand and explain the quantitative results (Creswell & Creswell, 2018; Mills & Gay, 2019). A mixed-method design was selected for this study based on recommendations from previous researchers to conduct studies on preservice teacher self-efficacy and perceptions utilizing qualitative methods and quantitative data collection over time (Furtado Nina et al., 2016; Giles & Kent, 2016; Ma & Cavanaugh, 2018; Martins et al., 2015; Pfitzner-Eden, 2016; Zee & Kooman, 2016).

Population and Sample

The population for this research was 48 preservice teachers entering their student teaching practicum in the fall 2019 semester from the southwest region of a Midwestern state. The intended population was 246 preservice teachers; however, the population was reduced when final permission to perform research was not granted from all teacher education institutions. The sample for this study was purposive because prior information is being used in conjunction with personal judgment to select a sample that

will provide the necessary data (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). Preservice teachers entering the student teaching practicum were selected because previous research shows the early stages of teaching are particularly influential on teacher self-efficacy, specifically the student teaching practicum (Bandura, 1977; Morris et al., 2017).

In a causal-comparative study, the goal is to understand preexisting causes or differences between groups (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). This study was causal-comparative because no treatment was applied to preservice teachers; the difference in their self-efficacy beliefs over time was examined. A minimum sample of 30 participants is recommended for causal-comparative research (Fraenkel et al., 2019, p. 102; Mills & Gay, 2019, p. 156). Descriptive statistics were used to identify central tendencies in preservice teacher self-efficacy belief sources. A sample size within the range of 30 to 150 preservice teachers was the initial target for this study.

Due to the population for the study being reduced to 48 preservice teachers, the sample size was reduced as well. According to Mills and Gay (2019), it is common to sample 10% to 20% of the population (p. 156). The sample size for the causal-comparative portion of the study was eight for the first round of data collection, five for the second round, and three for the final round of data collection. The sample size for the sources of teacher self-efficacy portion, analyzed using descriptive statistics, was three. Actual sample sizes fit roughly into the guidelines of 10% to 20% of the population (Mills & Gay, 2019, p. 156).

Qualitative studies usually have a sample size of between one and 20 participants (Fraenkel et al., 2019, p. 103; Mills & Gay, 2019, p. 161). For the qualitative portion of this study, three to 10 preservice teachers, who communicated to the researcher they were willing to be interviewed, were selected. The qualitative sample for this study was purposive because the researcher selected interview participants based on the purpose of the research and personal judgment (Fraenkel et al., 2019; Mills & Gay, 2019). The intention was to select the first one to two preservice teachers to volunteer from each university as interview participants. However, when an insufficient number of preservice teachers volunteered, contact was made with university administrators. A request was made that university administrators recommend one or two preservice teachers from their institutions as potential interview candidates. Recommended preservice teachers were contacted and asked if they were willing to be interviewed. Three preservice teachers from two of the participating institutions comprised the interview sample for this study. Interview data from three to 10 preservice teachers are within the typical qualitative range of one to 20 participants (Fraenkel et al., 2019, p. 103; Mills & Gay, 2019, p. 161).

Instrumentation

Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES) Short Form (see Appendices A & B) was used to measure changes in preservice teacher self-efficacy beliefs at three points throughout the student teaching practicum. The TSES was developed after concerns were raised that existing teacher efficacy measures were not an accurate reflection of the tasks that typically comprise the demands of the teaching profession (Tschannen-Moran & Hoy, 2001). Initially, the TSES was a 52-item scale (Tschannen-Moran & Hoy, 2001). The instrument was distributed in three separate

studies; results were analyzed, and the scale was refined (Tschannen-Moran & Hoy, 2001). The short form of the TSES is comprised of 12 Likert-type items divided into three teacher efficacy subscales, including efficacy for instruction, management, and engagement (Tschannen-Moran & Hoy, 2001). Likert-type scales are typically used to measure an individual's beliefs, feelings, or attitudes (Ary et al., 2019; Mills & Gay, 2019).

According to Furtado Nina et al. (2016), there is a lack of reliable and valid instruments to investigate the sources of teacher efficacy. When a suitable instrument cannot be located, one can be created, piloted, revised, and used to collect desired data (Mills & Gay, 2019). Thus, the Sources of Preservice Teacher Self-Efficacy Scale (see Appendix C) was developed for this study. This instrument was comprised of 14 Likert-type items, divided into subscales, which represent each of Bandura's (1977) four sources of self-efficacy. An advantage to Likert-type scales is that various responses can be assigned point values, allowing for measures of central tendency to be easily calculated (Ary et al., 2019). Development of the Sources of Preservice Teacher Self-Efficacy Scale was informed by Bandura's (1977) four theorized sources of self-efficacy and previous researchers' teacher self-efficacy source instruments (Kieffer & Henson, 2000; Pfitzner-Eden, 2016).

Interview questions (see Appendix D) were developed to collect qualitative data on preservice teachers' perceptions of their experiences throughout teacher education programs, specifically during the student teaching practicum. The questions were developed to align with research questions two, three, and four, focusing on one of Bandura's (1977) four sources of self-efficacy, helpful aspects of teacher education

programs, or challenging aspects of teacher education programs. Interview questions were informed by several previous studies on preservice teacher learning and self-efficacy (Bandura, 1977; AlAjmi et al., 2016; Martins et al., 2015; Seymour et al., 2018).

Reliability. As the TSES was developed, data from three separate studies demonstrated the reliability of the instrument (Tschannen-Moran & Hoy, 2001). Developers completed factor analyses after each study, considered loading ranges, and refined the number of items on the scale (Tschannen-Moran & Hoy, 2001). After the third study, the scale was divided into three separate subscales: teacher efficacy for instruction, management, and engagement (Tschannen-Moran & Hoy, 2001). The acceptable reliability coefficient value may vary based on the instrument and its intended purpose (Ary et al., 2019; Mills & Gay, 2019). According to Mills and Gay (2019), coefficients of 0.60 and above are sufficient (p. 183). "Reliabilities for the teacher efficacy subscales were 0.91 for *instruction*, 0.90 for *management*, and 0.87 for *engagement*" (Tschannen-Moran & Hoy, 2001, p. 799). Thus, reliability coefficients for the TSES subscales fall well within the range of acceptable reliability (Mills & Gay, 2019).

The Sources of Preservice Teacher Self-Efficacy Scale and interview questions were piloted on preservice and first-year teachers. Piloting data collection instruments allows the researcher to identify inconsistencies or problems and refine the instruments (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). Feedback from individuals who piloted the instruments was considered and used to inform changes in instrument items.

To gauge the internal consistency reliability of the Sources of Preservice Teacher Self-Efficacy Scale, data from the pilot distribution were used to calculate Chronbach's alpha coefficient. Chronbach's alpha coefficient is an appropriate measure of the internal consistency reliability of Likert-type instruments (Ary et al., 2019; Mills & Gay, 2019). The minimum level of acceptable reliability differs depending on the instrument and its intended purpose (Ary et al., 2019; Mills & Gay, 2019). According to Fraenkel et al. (2019), "a useful rule of thumb is that reliability should be at least 0.70 and preferably higher" (p. 152). Chronbach's alpha had a value of 0.81 when calculated using response data from the instrument pilot, which falls in the acceptable range of 0.70 or higher (Fraenkel et al., 2019).

During interviews and interview data analysis, personal thoughts and reflections, known as researcher reflexivity, were recorded (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). Researcher reflexivity increases the reliability of the study because unusual responses are noted and later checked against other responses (Fraenkel et al., 2019). Reflexivity can also help intentionally uncover any researcher bias throughout the study (Ary et al., 2019; Mills & Gay, 2019).

Validity. Validity is the most important characteristic to consider when evaluating instruments (Ary et al., 2019; Mills & Gay, 2019). Without validity, interpretation of results lacks meaning (Mills & Gay, 2019). Construct validity is the degree to which an instrument measures the intended theoretical construct (Mills & Gay, 2019). Tschannen-Moran and Hoy (2001) demonstrated the construct validity of the TSES with both convergent and divergent evidence of validity from a series of three studies. Convergent evidence of validity is produced when a researcher demonstrates a

positive relationship between the instrument and other measures of the same construct, while divergent evidence is produced when a negative relationship is demonstrated between the instrument and measures of incorrect or incongruent constructs (Ary et al., 2019). In each study, participants completed the TSES along with other measures of teacher efficacy including items from the RAND Study, Hoy and Woolfolk's adaptation of Gibson and Dembo's efficacy scale, and two important teacher efficacy factors on Gibson and Dembo's original efficacy instrument (Tschannen-Moran & Hoy, 2001). Developers of the TSES found positive correlations between both the long and short forms of the scale and other measures of teacher efficacy, providing convergent evidence for the validity of the instrument (Tschannen-Moran & Hoy, 2001). In addition, the validity of the TSES was bolstered because it was significantly negatively related to the results of measures of work alienation and Pupil Control Ideology (Tschannen-Moran & Hoy, 2001). Both of these concepts were presumed by developers to be "conceptually distinct and negatively related to teacher efficacy" (Tschannen-Moran & Hoy, 2001, p. 798). This negative correlation is divergent evidence of validity (Ary et al., 2019).

All items on the Sources of Preservice Teacher Self-Efficacy Scale are aligned with Bandura's (1977) theory of self-efficacy sources. Qualified judges reviewed all items on the Sources of Preservice Teacher Self-Efficacy Scale and provided feedback on the consistency between the variable being measured and the scale's format and content. Judges were educational administrators, each with a background in educational theory and research. Review by competent judges is one method of obtaining evidence of content validity (Fraenkel et al., 2019). Validity was also increased through piloting the Sources of Preservice Teacher Self-Efficacy Scale and interview questions on a small

group of individuals similar to the target population (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). Feedback from the pilot group informed changes in the instrument items.

Interview responses were recorded and transcribed. A copy of the transcript was provided for participants, known as member checking (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). Member checking allows participants to review the accuracy of the report and increases validity (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). Interviews were audio and video recorded to ensure the accuracy of responses and enhance the validity of the interviews (Fraenkel et al., 2019; Mills & Gay, 2019).

Data Collection

Permission to collect data for this study was requested from colleges and universities in the southwest region of a Midwestern state. Site permission emails (see Appendix E) were sent to university research office administrators using contact information publicly available on university websites. If no email address was available online, contact was made with institutional research offices by phone, and email contact information was requested. Once site permissions were granted, permission to perform this study was obtained from the Lindenwood University Institutional Review Board (IRB). After receiving IRB approval (see Appendix F), data collection began.

Collecting quantitative data. An email explaining the study with a link to the first Qualtrics Survey (see Appendix G) was sent to university education department chairs. This email included a request that the TSES be sent approximately two to three weeks before the semester begins to all preservice teachers who have completed the required coursework and were scheduled to begin the student teaching practicum. The

survey link sent to preservice teachers contained informed consent information, and participation in the survey indicated each participant's consent (see Appendix H). The researcher's contact information was included in the message to potential participants, inviting them to contact the researcher if they were interested in participating in interviews.

The response rate for the first-round survey was below the intended target. After preservice teachers at each participating institution had at least two weeks to respond to the first survey, an email request was sent to university education department chairs asking that they send a reminder email (see Appendix I) to collect additional responses and solicit interest in interview participation. The first-round survey was available for one additional week after reminder emails were sent by university education department chairs.

Approximately three to four weeks into the semester, the second Qualtrics survey was sent to university education department chairs with the request that the TSES link was forwarded to all preservice teachers who had just begun the student teaching practicum (see Appendices J & K). This survey invitation included an additional opportunity to participate in interviews. The second-round survey was initially intended to be sent two to three weeks into the semester. The round two survey timeline was adjusted to ensure the first and second round surveys were not distributed too close together.

Based on feedback from university education department chairs, the final Qualtrics survey link was sent in late November, approximately two to three weeks before preservice teachers completed their student teaching practicums. The survey link

was sent to university education department chairs with the request that the link is forwarded to all preservice teachers who were near completion of the student teaching practicum (see Appendices L, M, & N). The final survey included the Sources of Preservice Teacher Self-Efficacy Scale and the third-round administration of the TSES.

Collecting qualitative data. Willing participants were contacted by email to schedule a video chat interview at a convenient time. Before the beginning of each interview, participants were presented with informed consent information (see Appendix O). Interviews took place via video chat near the end of the student teaching practicum, as schedules allowed. Interviews were audio and video recorded and transcribed. A copy of each interview transcript was provided to the participant. Interview participants were given the opportunity to review the transcript, add additional comments, or clarify their responses.

Data Analysis

Analyzing quantitative data. Data from the TSES was analyzed using an analysis of variance (ANOVA) to determine whether significant differences existed among teacher self-efficacy levels of participants at three points throughout the student teaching practicum. Time was the independent variable, and the preservice teacher self-efficacy level was the dependent variable. When data from more than two groups are analyzed, an ANOVA is the appropriate statistical test (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019). Responses from the Sources of Preservice Teacher Self-Efficacy Scale were analyzed using descriptive statistics, specifically measures of central tendency (Ary et al., 2019; Bluman, 2018; Mills & Gay, 2019). Participant responses were compared, and the modal data was calculated and analyzed.

Analyzing qualitative data. Qualitative data collection and analysis were simultaneous and recursive (Merriam & Tisdell, 2016). As interview data regarding preservice teacher perceptions of effective and challenging aspects of teacher education programs were collected and transcribed, responses were compiled into a database. According to Yin (2016), compiling data into a useful order is the first phase of formal analysis.

Qualitative researchers recommend the review and analysis of qualitative data as it is collected (Merriam & Tisdell, 2016; Saldaña, 2016). Following each interview, transcript data were reviewed and coded. According to Saldaña (2016), a code is "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language or visual data" (p. 4). Coded data from each interview were then organized into categories and compared with data from previous interviews. Grouping initial codes into categories takes the data to the next level of abstraction and highlights patterns in the data (Merriam & Tisdell, 2016; Saldaña, 2016; Yin, 2016).

Major categories were then compared and consolidated, progressing toward larger themes or concepts. Condensing categories into more complex themes transcends the data gathered during the study and influences the interpretation of data (Merriam & Tisdell, 2016; Saldaña, 2016; Yin, 2016). Findings were reported in a narrative description with supporting data such as relevant responses, links to existing theory and literature, frequencies, and percentages (Merriam & Tisdell, 2016; Saldaña, 2016).

Ethical Considerations

Informed consent information was provided to all participants, including an explanation of the purpose of the study and any potential risks. Participants were allowed to opt-out of the study at any point with no negative effects. The identities of participants in this study remained anonymous; no personally identifiable information was collected on surveys. Each survey included a coded identifying question. Participants were prompted to enter the first two letters of their mothers' first name, followed by a two-digit number representing the day in their date of birth.

Interview participant identity was kept confidential. Interview participants were given the opportunity to review interview transcripts and ask questions, make comments, or clarify their responses. All survey data, audio, and video recordings, and interview transcripts were stored on a password-protected computer and destroyed three years after the conclusion of the study.

Summary

This study included preservice teachers completing the student teaching practicum in fall 2019 in the southwest region of a Midwestern state. Quantitative data were collected three times throughout the semester using the Teachers' Sense of Efficacy Scale, and results were analyzed using ANOVA to determine if significant differences exist in preservice teacher self-efficacy levels over the course of the student teaching practicum. The Sources of Preservice Teacher Self-Efficacy Scale was included in the final quantitative data collection period. Results were analyzed with descriptive statistics to determine central tendencies regarding the sources of preservice teacher self-efficacy beliefs.

Qualitative data were collected through interviews with preservice teachers at the end of the student teaching practicum. Interview responses were transcribed, coded, and analyzed using qualitative data analysis methods. Coding, categorizing, and condensing data into themes informed data analysis and provided a better understanding of preservice teachers' perceptions of the most effective and most challenging aspects of teacher education programs (Merriam & Tisdell, 2016; Saldaña, 2016; Yin, 2016).

Chapter Four will include an analysis of the quantitative and qualitative data collected in the study. Significant differences and trends in preservice teacher self-efficacy development evident in qualitative data will be presented in tables and graphs. Preservice teacher perceptual themes identified from qualitative data will be discussed.

Chapter Four: Analysis of Data

American teacher education program effectiveness directly affects teacher quality and student success (Guha et al., 2017b; Stein & Stein, 2016). If teachers are inadequately prepared, student achievement suffers, school improvement efforts are compromised, and school districts experience high turnover rates (Guha et al., 2017b; NCTQ, 2018a; Stein &Stein, 2016). Teacher education program improvement is an integral part of improving the American education system (AlAjmi et al., 2016; Guha et al., 2017b; NCTQ, 2018b; Stein & Stein, 2016).

Teacher self-efficacy has been linked with a variety of positive student and teacher outcomes (Martins et al., 2015; Zee & Koomen, 2016). Thus, a better understanding of teacher self-efficacy formation could aid in teacher education program improvement efforts (Giles & Kent, 2016). The purpose of this mixed-method study was to understand preservice teacher self-efficacy development and sources of self-efficacy more fully. Additionally, preservice teachers were interviewed on their perceptions of effective and challenging aspects of teacher education programs. In Chapter Four, an analysis of the data is presented.

First, quantitative data are presented. Quantitative data were collected using two instruments. Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES) Short Form was distributed three times, and its contents aligned with research question one. The Sources of Preservice Teacher Self-Efficacy Scale, created for the purpose of this study, was distributed once and aligned with research question two. Both surveys were distributed through Qualtrics, and the data were downloaded into Excel for statistical analysis.

Next, qualitative data, in the form of interview responses, are presented. Interview items align with research questions two, three, or four. An analysis of responses to each interview question is included. Overall themes found in the data are presented, and Chapter Four concludes with a chapter summary.

Quantitative Data Analysis

Teachers' Sense of Efficacy Scale. Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES) Short Form was distributed to preservice teachers three times throughout the student teaching practicum. The TSES consists of 12 teacher belief statements, which can be separated into three teacher efficacy subscales. Teacher efficacy subscales include efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement (Tschannen-Moran & Hoy, 2001). Respondents were asked to rate their opinion regarding each statement on a Likert-type scale ranging from one to nine. For each distribution of the survey, a link to the TSES was sent via email to teacher education program administrators who forwarded it on to preservice teachers participating in the student teaching practicum. The survey was hosted and managed using Lindenwood University's survey management software, Qualtrics. Data were exported into Excel for statistical analysis.

The data gathered were analyzed to address research question one. An analysis of variance (ANOVA) was used to determine whether significant differences existed among preservice teachers' self-efficacy levels before, near the beginning, and near the end of the student teaching practicum. In this case, time was the independent variable, and the preservice teacher self-efficacy level was the dependent variable. When data from more

than two groups are analyzed, an ANOVA is the appropriate statistical test (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019).

Overall teacher efficacy results. The results of the ANOVA, when checking for significant differences in overall teacher efficacy throughout the student teaching practicum, are presented in Table 1. Results indicated the *F* value of 0.99 was less than the critical value of 3.81; thus, the null hypothesis was not rejected. Therefore, it was concluded that no significant differences exist among preservice teacher self-efficacy throughout the student teaching practicum.

Table 1

ANOVA: Overall Teacher Efficacy

Groups	Count	Sum	Average	Variance
Round 1	8	676	84.5	42
Round 2	5	443	88.6	39.3
Round 3	3	268	89.33	30.33

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	77.57	2	38.79	0.99	0.40	3.81
Within Groups	511.87	13	39.37			
Total	589.44	15				

When examining results from all 12 items on the TSES, no significant differences were found between overall preservice teacher self-efficacy levels throughout the student teaching practicum. Data collected using the TSES can be further analyzed using Tschannen-Moran and Hoy's (2001) three teaching efficacy subscales: efficacy for instructional strategies, efficacy for classroom management, and efficacy for student

engagement. ANOVA tests were applied to results from specific items to detect the existence of significant differences between teacher efficacy levels for each of the subscales.

Efficacy for instructional strategies results. An ANOVA was applied to results from TSES items, which pertained to instructional strategies (items 5, 9, 10, and 12). Results, presented in Table 2, indicated the *F* value of 1.19 was less than the critical value of 3.815. As a result, it was concluded that no significant differences exist among preservice teacher self-efficacy for instructional strategies throughout the student teaching practicum.

Table 2

ANOVA: Efficacy for Instructional Strategies

Groups	Count	Sum	Average	Variance
Round 1 Instructional	8	230	28.75	5.07
Round 2 Instructional	5	147	29.4	13.3
Round 3 Instructional	3	95	31.67	6.33

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	18.63	2	9.32	1.19	0.33	3.81
Within Groups	101.37	13	7.80			
Total	120	15				

Efficacy for classroom management results. An ANOVA was also applied to results from TSES items, which pertained to classroom management (items 1, 6, 7, and 8). Results, presented in Table 3, show the *F* value of 2.31 was less than the critical

value of 3.81. Thus, no significant differences exist among preservice teacher self-efficacy for classroom management throughout the student teaching practicum.

Table 3

ANOVA: Efficacy for Classroom Management

Groups	Count	Sum	Average	Variance
Round 1 Management	8	218	27.25	7.37
Round 2 Management	5	150	30	5.5
Round 3 Management	3	89	29.67	2.33

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	27.77	2	13.89	2.31	0.14	3.81
Within Groups	78.17	13	6.01			
Total	105.94	15				

Efficacy for student engagement results. A final ANOVA was applied to responses on TSES items regarding student engagement (items 2, 3, 4, and 11) to determine if significant differences existed. The results of the ANOVA are displayed in Table 4. The *F* value of 2.19 was less than the critical value of 3.63, so it was concluded that no significant differences exist among preservice teacher self-efficacy for student engagement throughout the student teaching practicum.

Table 4

ANOVA: Efficacy for Student Engagement

Groups	Count	Sum	Average	Variance
Round 1 Engagement	8	228	28.5	9.43
Round 2 Engagement	8	146	18.25	237.07
Round 3 Engagement	3	84	28	3

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	474.29	2	237.15	2.19	0.14	3.63
Within Groups	1731.5	16	108.22			
Total	2205.79	18				

Sources of Preservice Teacher Self-Efficacy Scale. The Sources of Preservice Teacher Self-Efficacy Scale was developed for the purpose of this study. There was a lack of reliable and valid instruments to measure sources of teacher efficacy (Furtado Nina et al., 2016). Since no suitable instrument was available, an instrument was created, piloted, revised, and used to collect the desired data, as recommended by Mills and Gay (2019). Development of the Sources of Preservice Teacher Self-Efficacy Scale was informed by Bandura's (1977) four theorized sources of self-efficacy and previous researchers' teacher self-efficacy source instruments (Kieffer & Henson, 2000; Pfitzner-Eden, 2016).

The scale was comprised of 14 statements, and respondents rated their responses on a Likert-type scale ranging from one (this does not describe me at all) to nine (this absolutely describes me). Items were divided into subscales, which represent each of Bandura's (1977) four theorized sources of self-efficacy. Bandura's (1977) sources of

self-efficacy include mastery experiences, vicarious experiences, verbal persuasion, and emotional and physiological states.

A link to the Sources of Preservice Teacher Self-Efficacy Scale was sent via email to teacher education program administrators who forwarded it on to preservice teachers participating in the student teaching practicum. The survey was hosted and managed using Lindenwood University's survey management software, Qualtrics. Data were exported into Excel for statistical analysis. Data were analyzed using descriptive statistics, specifically measures of central tendency (Ary et al., 2019; Bluman, 2018; Mills & Gay, 2019). Participant responses were compared, and the modal data was calculated and analyzed.

Descriptive statistics. Three participants completed the Sources of Preservice Teacher Self-Efficacy Scale. The mean and standard deviation scores for each of the 14 items on the Sources of Preservice Teacher Self-Efficacy Scale were calculated. Mean scores ranged from 4 to 8.33, and the standard deviation ranged from 0 to 3.79. Significant mean scores in each of the sources of self-efficacy are discussed below.

Mastery experiences. There were three items included in the first section of the survey. These items were included to better understand the impact of mastery experiences on preservice teachers' self-efficacy for teaching. Three responses were collected on this portion of the survey. Survey item 1, *During my student teaching practicum, my teaching experiences were successful,* scored the highest mean with 7.33. The collective mean score of all mastery experience items was 7 (SD = 0.5). The mean reflects the participants' general feeling that the mastery experience scale items described

them relatively well. The means and standard deviations for specific mastery experience scale items are presented in Table 5.

Table 5

Analysis of the Mean and Standard Deviation for Mastery Experiences

Sources of Preservice Teacher Self-Efficacy Scale Item	*M*	*SD*	*N*
1. During my student teaching practicum, my teaching experiences were successful.	7.33	0.58	3
2. During my student teaching practicum, I felt that I was a good teacher.	6.67	0.58	3
3. I am satisfied with my overall teaching performance during my student teaching practicum.	7	0	3

Vicarious experiences. The second section of the survey was comprised of three items. These items were included to understand the influence of vicarious experiences on preservice teachers more fully. Three responses were collected in this section of the survey. Item 4, *I learned a lot from observing strong teachers during my student teaching practicum,* scored the highest mean with 8.33. The collective mean score of all vicarious experience items was 7.89 (*SD* = 0.78). This mean score was the highest of the four sources of self-efficacy beliefs. A mean score of 7.89 reflects the participants' general feeling that the vicarious experience scale items described them well. The means and standard deviations for specific vicarious experience scale items are presented in Table 6.

Table 6

Analysis of the Mean and Standard Deviation for Vicarious Experiences

Sources of Preservice Teacher Self-Efficacy Scale Item	*M*	*SD*	*N*
4. I learned a lot from observing strong teachers during my student teaching practicum.	8.33	0.33	3
5. During my student teaching practicum, I observed teachers managing challenging situations in the classroom.	8	0.58	3
6. During my student teaching practicum, I had meaningful opportunities to observe teachers delivering high quality, effective instruction.	7.33	0.33	3

Verbal persuasion. The third section of the survey was comprised of four items. These items were included to gather data to provide a clearer understanding of the influence of verbal persuasion on preservice teachers. Three responses were collected on this portion of the survey. Two items in this section scored equally high means. Item 9, *During my student teaching practicum, I got positive feedback from my mentor,* scored a mean of 8.

Similarly, item 10, *During my student teaching practicum, I got positive feedback from other professionals,* scored a mean of 8. Item 7, *My mentor told me I will be a good teacher,* two of the three responses were high, a score of 8 and a score of 9 indicating that the statement described those respondents well. However, one participant responded with a 2, indicating that the statement did not describe him or her well at all. The collective mean score of all verbal persuasion items was 7.5 (*SD* = 1.78). The mean reflects the participants' general feeling that the verbal persuasion scale items described

them well. The means and standard deviations for specific verbal persuasion scale items are presented in Table 7.

Table 7

Analysis of the Mean and Standard Deviation for Verbal Persuasion

Sources of Preservice Teacher Self-Efficacy Scale Item	*M*	*SD*	*N*
7. My mentor told me I will be a good teacher.	6.33	3.79	3
8. Other professionals told me I will be a good teacher.	7.67	0.58	3
9. During my student teaching practicum, I got positive feedback from my mentor.	8	0	3
10. During my student teaching practicum, I got positive feedback from other professionals.	8	0	3

Emotional and physiological states. The final section of the Sources of Preservice Teacher Self-Efficacy Scale included four items. These items were included in the scale to assess the effect of emotional and physiological states on preservice teacher efficacy. Three responses were collected on this portion of the survey. In contrast to the first three sections of the survey, there was a greater disparity in responses. Responses to item 11, *I felt nervous a lot during my student teaching practicum,* varied the most. The first participant responded with 4, indicating that the statement moderately described him or her. The second participant responded with 7, indicating the statement described him or her moderately well. The third participant responded with 1, indicating that the statement did not describe him or her at all. Despite a very low response to item 11, the third participant responded to item 12, *I mostly felt overwhelmed during my*

student teaching practicum, with a 7, indicating that the statement described him or her moderately well.

Conversely, the second participant, who responded moderately high to item 11, responded to item 12 with a 3, indicating that the statement described them at a lower level than item 11. Item 13, *I get excited when I do something to help a student* learn, scored a mean of 8, the highest on this section of the survey. The collective mean score of all emotional and physiological states items was 5.33 (*SD* = 2.46). The means and standard deviations for specific emotional and physiological states scale items are presented in Table 8.

Table 8

Analysis of the Mean and Standard Deviation for Emotional and Physiological States

Sources of Preservice Teacher Self-Efficacy Scale Item	*M*	*SD*	*N*
11. I felt nervous a lot during my student teaching practicum.	4	3	3
12. I mostly felt overwhelmed during my student teaching practicum.	5	2	3
13. I get excited when I do something to help a student learn.	8	1	3
14. I feel anxious when I say something wrong to a class.	4.33	2.08	3

Qualitative Data Analysis

Research questions two, three, and four were addressed through interviews with preservice teachers nearing the end of the student teaching practicum. The instrument was an 11-item interview protocol designed to collect data on preservice teachers'

perceptions of their experiences throughout teacher education programs. Interview questions were designed to either focus on Bandura's (1977) sources of self-efficacy, helpful aspects of teacher education programs, or challenging aspects of teacher education programs.

The sample for this portion of the study consisted of three interview participants. The participants represented two of the three teacher education programs included in the study. No preservice teachers from the third teacher education program volunteered to be interviewed. Anonymity was ensured for all preservice teachers interviewed by assigning each participant a code. The first preservice teacher interviewed was referred to as Preservice Teacher 1, the second was referred to as Preservice Teacher 2, and the third was referred to as Preservice Teacher 3.

Interviews were conducted via video chat software. The interview recordings were transcribed, coded, and compared to detect similarities and differences in responses. Coded interview data were analyzed to uncover patterns and themes in preservice teachers' responses.

Interview question one. *Think about your experiences throughout your teacher education program. What has been most helpful in preparing you to work in the classroom? What has been most challenging?*

Participants indicated various aspects of teacher education programs were most helpful. Preservice Teacher 1 and Preservice Teacher 2 both expressed that coursework was most helpful in preparing them to work in the classroom. Both of these participants specifically mentioned coursework related to literacy. Preservice Teacher 2 also mentioned the benefit of coursework on lesson planning.

In contrast, Preservice Teacher 3 said that clinical experiences were the most helpful component of teacher education. Preservice Teacher 3 stated that she thought coursework had prepared her for the classroom, until her initial clinical experience when she first experienced the reality of a classroom. Preservice Teacher 3 also specifically stated that her classroom management and planning skills improved as a result of clinical experiences, noting, "Clinical work was the most beneficial just because you learn mostly classroom management and how a plan on paper, how it transfers to reality."

Although Preservice Teacher 3 found clinical work to be the most helpful, she also felt the biggest challenge was the brevity of her clinical experiences. Preservice Teacher 3 stated:

> When you go in for clinical, you're just are kind of thrown in, and you hope for the best. So, that was the most challenging just because I felt like by the time I actually figured out how to do it; it was done.

Another challenge highlighted by Preservice Teacher 3 was the lack of time in classrooms to develop relationships with students and fully understand their needs.

When asked about the most challenging aspect of teacher education, Preservice Teacher 1 and Preservice Teacher 2 focused on their experiences during the student teaching practicum. Preservice Teacher 1 mentioned struggling to meet the needs of all students. She stated, "As just a classroom teacher of one, sometimes making lessons that differentiated can be difficult when there's so much, so much gap between all the students." Preservice Teacher 2 expressed challenges with classroom management. He stated, "I think they need to do a better job at preparing [for] behaviors and mental health things in the classroom."

Interview question two. *What aspects of your coursework were most beneficial? What aspects were most challenging? What courses, in particular, were most or least helpful?*

All interview participants focused on beneficial aspects of coursework that directly applied to teaching practice. Preservice Teacher 1 reiterated the benefit of literacy coursework in meeting the needs of diverse students she taught during her student teaching practicum, "[My program's] literacy courses probably has equipped me the best to be able to be working with those students." Preservice Teacher 2 stated that literacy and mathematics methods courses were most helpful. Preservice Teacher 2 highlighted two major benefits of methods courses, planning lessons and modeling lessons in classrooms. The connection between learning about lesson planning and putting that learning into practice was beneficial for Preservice Teacher 2.

The integration of coursework and clinical experiences was also beneficial for Preservice Teacher 3. In one of her most helpful courses, the content presented in the course was immediately applied in clinical experiences. Preservice Teacher 3 said, "That was nice in that aspect that it wasn't just all clinical, but it wasn't all just information. So that was the most beneficial."

Participants also expressed some of the most challenging and least helpful aspects of their coursework. All three participants mentioned that some of their coursework was irrelevant or redundant. Preservice Teacher 3 highlighted the challenge of redundant introductory courses. She stated, "Introduction classes, that for me was almost a challenge just because I kind of sat there, and I felt like it was…obvious."

Preservice Teacher 1 and Preservice Teacher 2 specifically mentioned coursework in the areas of science and social studies. Preservice Teacher 2 emphasized the redundancy of the science and social studies methods class he took, "Besides looking at standards that are science and social studies elementary, they weren't really much different than the other elementary education class[es]. It wasn't really anything new." Preservice Teacher 1 felt the science and social studies combined course she took was not relevant to current practices in classrooms, leaving her unprepared. Preservice Teacher 1 stated, "A lot of the instruction that was directed in that methods class, in regards to how to teach elementary science and social studies, is not really how it's being done in the classroom." She later added, "I felt I had no idea what I was doing whenever I was going into taking over that science and social studies part of the classroom."

The other two participants also expressed that some coursework was not meaningful or relevant to current classroom practices. Preservice Teacher 2 felt that one challenging part of the coursework for him was that some assignments completed for courses lacked meaning or applicability. Preservice Teacher 3 specifically mentioned a course on integrating physical education, music, and art into the regular education classroom. She thought information presented in the course was highly content specific and lacked practical application to the regular education classroom. Preservice Teacher 3 stated, "I just don't think it really transferred well into the classroom, but I think it could be a beneficial class. It just wasn't done in a very beneficial way."

Interview question three. *Is there an area in which you feel more coursework would be beneficial?*

Responses to interview question three varied. Preservice Teacher 1 expressed the need for science and social studies related coursework that more closely aligned with current classroom practices. She mentioned the potential benefit of coursework focused on teaching science and social studies using a project-based model. Preservice Teacher 1 felt this would more effectively prepare teacher candidates to work in the classroom.

Preservice Teacher 3 thought more coursework was necessary in the area of reading instruction, specifically small group, guided reading. Although she received some coursework on guided reading, she said, "It wasn't very practical...not really how guided reading works." Preservice Teacher 3 added that instruction on guided reading should be more closely aligned with the pace and content of guided reading in the classroom. She said, "I wish we could have done that because, at the end of my student teaching, I find that that's still the thing I struggled with the most, guided reading groups."

In contrast to other responses, Preservice Teacher 2 did not feel that additional coursework would be beneficial. He expressed satisfaction with the amount and variety of coursework offered by his teacher education program, saying, "We have a lot of classes that we take…and they vary pretty well."

Interview question four. *What aspects of your student teaching practicum were most beneficial? What aspects were most challenging? What people or experiences, in particular, were most or least helpful?*

Although interview participants had different perspectives on the most beneficial aspects of their student teaching practicum experiences, one common thread was the benefit of their professional support systems. Preservice Teacher 1 cited the practical

application of her teaching knowledge and skills, coupled with the support of an experienced mentor as the most helpful aspect of student teaching. She said, "I think a lot of it is…being able to teach and take over the classroom, but also having that cooperating teacher there to support you." Preservice Teacher 1 also mentioned the helpfulness of her grade-level team and building principal. Preservice Teacher 1 stated, "It's nice instead of just kind of feeling like you're being thrown in the lion's den. I would say that's probably been the most successful part of my student teaching, is just having that support."

Similarly, Preservice Teacher 2 and Preservice Teacher 3 both mentioned support provided by colleagues when asked specifically which people or experiences were most helpful during the student teaching practicum. Preservice Teacher 2 emphasized the support of his grade level team and the positive relationships he built with colleagues. Preservice Teacher 3 also highlighted the support and feedback provided by her university supervisor as one of the most helpful experiences during her student teaching practicum. Preservice Teacher 3 said the following:

> My favorite was when my professor would come and observe me just because I felt like they were the ones that gave me all the knowledge, and so they were the most critical. I liked to get that kind of feedback to see how to improve.

In addition to highlighting the benefit of support from her university supervisor, Preservice Teacher 3 expressed a desire for more feedback from the university supervisor.

Along with the benefit of support systems, Preservice Teacher 2 and Preservice Teacher 3 cited the consistency of working with the same class for an extended time as

one of the most beneficial aspects of the student teaching practicum. Preservice Teacher 2 stated, "I think just actually being there and teaching in the same class…I got to know the kids a lot better." Preservice Teacher 3 also mentioned the benefit of the flexibility in pacing during the student teaching practicum allowed by her teacher education program, especially at the beginning of the practicum. She said, "Those first couple weeks I could just learn how my cooperating teacher did things and build those relationships with kids. But then if I wanted to only take on one subject the next week, I could."

Each interview participant mentioned different aspects of the student teaching practicum as the most challenging. Preservice Teacher 1 and Preservice Teacher 3 expressed challenges from within the classroom while Preservice Teacher 2's biggest challenge related to his teacher education program. Differentiation was Preservice Teacher 1's biggest challenge. She said, "Probably the most challenging has been making sure that…I am meeting them all where they're at and not just kind of teaching in the middle."

Classroom management was the biggest challenge Preservice Teacher 3 faced. Preservice Teacher 3 stated, "That was challenging, especially in the beginning of getting control over an entire classroom." Classroom management was a continual concern for Preservice Teacher 3. She added, "You can learn all the tips and tricks and still something will come up that you did not prepare for."

Preservice Teacher 2's biggest challenge centered around the lack of communication with his teacher education program. Preservice Teacher 2 said, "They told us what to do at the beginning at our first seminar, then they didn't really tell us

anything after." He expressed that he and his mentor teacher were unsure of his program's expectations, so they "just did whatever."

Interview question five. *What suggestions do you have for improving the student teaching practicum experience?*

All three interview participants had suggestions for improving the student teaching practicum. Preservice Teacher 1 expressed that initially, she had little time to observe her mentor teacher and that more observation of her mentor teacher at the beginning of the practicum would be beneficial. She suggested a slower pace for the student teaching practicum. Preservice Teacher 1 mentioned feeling overwhelmed by the weekly increase in planning and teaching responsibilities. She said, "I was barely becoming confident in my…instruction and in my abilities with two subjects. And then the next thing you know, I have two more subjects being thrown at me to start teaching, and it, it was very overwhelming."

Preservice Teacher 3 also felt that the beginning of the student teaching practicum was intense. She made a related suggestion that teacher education programs allow for a more gradual shift from short, isolated clinical experiences to full-time teaching during the student teaching practicum. Preservice Teacher 3 stated, "I just felt like a short clinical here, and then it was a very big jump. So somehow having more of a smooth transition."

Preservice Teacher 2 had a different suggestion for improving the student teaching practicum. He mentioned increasing communication and follow-up between teacher education program supervisors and preservice teachers. Preservice Teacher 2 suggested, "Having check-ins…to see how you are doing." Regarding face to face

follow-up, Preservice Teacher 2 communicated a desire for feedback on required reflections. He expressed frustration that he was expected to complete reflections that were not reviewed by university supervisors.

Similarly, Preservice Teacher 3 suggested modifications to the required assignments. When referring to a required collection of evidence, she said, "I felt like it sometimes took away my focus and time from being the best teacher I could be because I was focused on making copies of what I had done to then show as proof." Preservice Teacher 3 communicated that she knew the evidence was necessary; she also suggested it be shortened or reduced.

Interview question six. *Think about a time when your teaching was successful. How do you think that contributed to your self-confidence in teaching? What did you learn about yourself as a teacher from that experience?*

Interview question six relates to Bandura's (1977) mastery experiences as a source of self-efficacy beliefs. After interview participants reflected on successful teaching experiences, all participants stated that the successful teaching experience increased their confidence in teaching. Preservice Teacher 1 said, "They [students] were getting it; it made me feel more confident in my instruction." Preservice Teacher 1 added that the confidence she gained in teaching one subject translated to other subjects.

Along with a boost in confidence, Preservice Teacher 2 mentioned the unanticipated impact he had on students during a reading lesson, which included a passage on racial segregation and resulted in an unplanned, engaging classroom conversation. He said, "Even a lesson plan or as simple as a story that I'm putting out…can make an impact on kids, even if you don't think it will because I didn't think

the lesson would go anywhere." As a result of this experience, Preservice Teacher 2 also learned the importance of adaptability in teaching. He mentioned that he liked to have a plan but learned to be flexible so his students could ask questions or engage in conversations around their learning.

Preservice Teacher 3 also experienced increased teaching confidence following her successful teaching experience. She learned more about her established strengths as a teacher. During this experience, her university supervisor was performing an observation. Preservice Teacher 3 said, "She noticed a lot of things that I hadn't...When I teach, she says that I make all kinds of faces and…I act out a lot. And I just didn't really notice it until she pointed that out." Preservice Teacher 3 expressed that after her university supervisor pointed out her energetic teaching style, she sought out opportunities to engage students by acting out her lessons or teaching in an animated way.

Interview question seven. *What about a time that you felt your teaching was unsuccessful? How do you think that affected your confidence? What did you learn about yourself as a teacher from that experience?*

Interview question seven also aligns with Bandura's (1977) mastery experiences as a source of self-efficacy beliefs. Interview participants were asked to explain an unsuccessful teaching experience and its impact, all three participants mentioned mathematics instruction. While Preservice Teacher 1 and Preservice Teacher 2 focused specifically on one unsuccessful lesson, Preservice Teacher 3 expressed feeling unsuccessful, making the math curriculum engaging for her students. Another common thread was the negative feelings brought on by unsuccessful experiences. Preservice

Teacher 1 said, “It was kind of humiliating just because…I’ve had four years of education to be able to teach and here I am and these kids didn’t grasp it at all.” She also expressed concern that she would disappoint her mentor. Similarly, Preservice Teacher 2 was “leery” during his unsuccessful lesson and Preservice Teacher 3 felt discouraged by her unsuccessful teaching experience.

Although all participants experienced negative feelings as a result of unsuccessful teaching, they all learned about themselves as teachers. One common theme was the focus on the flexibility to adapt lessons and reteach material to meet the needs of students. Preservice Teacher 1 said, “I was less focused on…giving the perfect lesson and more focused on meeting the students and making sure that…what their work was showing was driving my instruction.” Preservice Teacher 2 stated, “I learned that not every lesson is going to go exactly how you think…but always be willing to redo it.”

Interview question eight. *Describe a time you observed a teacher successfully handle a difficult situation in the classroom. What did you learn from that situation?*

Interview question eight was included to better understand how vicarious experiences contribute to self-efficacy beliefs (Bandura, 1977). When describing a challenging situation, they observed, all three interview participants discussed student behavior. Preservice Teacher 2 recalled, “There were a few times where a kid would just blow up in the classroom or start tearing stuff or something.”

All participants also highlighted the importance of professional support systems in handling student behavior challenges. Preservice Teacher 1 mentioned the use of parent liaisons, administration, and behavior technicians as support to cope with difficult student behaviors. She stated, “My cooperating teacher did a great job at just kind of being

patient and using those around her as a support system." Similarly, Preservice Teacher 2 emphasized, "I learned that you as a teacher can't handle everything that comes your way. You need extra help from other people. There are resources in the school for you for that reason and you should utilize them."

Interview question nine. *Throughout your student teaching practicum, what type of feedback have you received from others? How do you think it affected your growth as a teacher? Which individuals provided the most valuable feedback (mentors, administration, university supervisor, etc.)?*

Data on feedback from others were collected to better understand the impact of verbal persuasion as a source of self-efficacy beliefs (Bandura, 1977). Participants all mentioned receiving feedback from university supervisors and mentor teachers. Additionally, all three interview participants received feedback on instruction and classroom management strategies. Preservice Teacher 2 and Preservice Teacher 3 received feedback from other professionals, including their grade-level teams. Preservice Teacher 3 also recalled receiving feedback from the building administrators.

All preservice teachers felt encouraged by positive feedback. According to Preservice Teacher 1, "Their feedback definitely gives me more confidence in knowing that what I'm doing is right." Preservice Teacher 2 mentioned feeling capable and reassured after receiving positive feedback. Preservice Teacher 3 reflected on feedback from her university supervisor during a lesson by saying, "Afterwards, my professor stayed back after school and discussed the feedback, and it was all positive…if someone who is a professional says it's good, I can keep going then."

Along with experiencing positive feelings after receiving encouraging feedback, all preservice teachers expressed a focus on growth after receiving constructive feedback. When discussing weekly feedback from her mentor, Preservice Teacher 3 said, "It kind of gave me small goals since it was weekly…it's like how can I maybe just focus on one or two of those for next week so that I can keep growing." Preservice Teacher 2 received feedback that he should exhibit more confidence in his teaching. He said, "I just need to work on just being more confident in what I know that I'm capable of doing."

Participants received feedback from numerous sources, when asked who gave the most valuable feedback, their responses varied. Preservice Teacher 1 thought the continuous feedback from her mentor teacher was most valuable. She said, "It's not just they say it once…and then we move on. My teacher's continually…keeping me accountable." Preservice Teacher 2 also thought his mentor's feedback was valuable, but he also appreciated the feedback from other teachers.

While Preservice Teacher 3 thought the feedback from her university supervisor was most helpful, she expressed that feedback from other teachers was her favorite. Regarding feedback from other teachers, she stated, "That was probably my favorite feedback just because I knew it's actually honest and from the heart, because they were saying it when it wasn't necessary." When talking about feedback from her university supervisor, she stated, "I know since she has known me for four years, she was also going to be very honest with me." Preservice Teacher 3 added, "I felt like they were the ones that gave me all the knowledge and so they were the most critical. I liked to get that kind of feedback to see how to improve." Preservice Teacher 3 also expressed the desire for

more opportunities to be observed by her university supervisor and receive critical feedback.

Interview question 10. *What is your general attitude as you finish your student teaching practicum? Have you experienced any stressful situations so far? How have you handled the stressful situations?*

The final source of self-efficacy beliefs is emotional and physiological states (Bandura, 1977). Interview question 10 was included to collect data on how emotional and physiological states contribute to self-efficacy beliefs. Preservice Teacher 1 reported feeling encouraged near the end of her student teaching practicum, crediting her support system. She said, "I feel a lot more encouraged…there's definitely been moments where it was hard…but the support system…has been a game-changer." She added, "It ended up being a lot better of an experience than I would have expected. And it's better than I could have hoped for."

Preservice Teacher 2 and Preservice Teacher 3 had similar attitudes as they finished their student-teaching practicums. Both participants expressed that it was difficult to leave the students in their classes, but they felt ready to finish student teaching and work in their own classrooms. Preservice Teacher 3 stated, "It definitely felt weird to leave because I felt like those students had become my students, and I'm just ready to have my own classroom now."

As interview participants discussed stressful situations, two themes emerged. Coping with the workload of the student teaching practicum was a source of stress for some preservice teachers. Some also experienced stressful situations involving classroom management.

Both Preservice Teacher 1 and Preservice Teacher 3 experienced stress when faced with the workload of the student teaching practicum. Preservice Teacher 1 specifically struggled with preparing lesson plans in advance and taking on additional teaching responsibilities. She said:

> Every time when I would look at my calendar, and I would see it's time to take on a new…subject, it would just stress me out to no ends and overwhelm me…I'm barely able to keep up with my lesson planning for half of the day.

When asked how she coped with the stress of the increasing workload, Preservice Teacher 1 said that she gave herself permission not to be a week ahead in lesson planning. She also scheduled time to get lesson planning accomplished. Similarly, Preservice Teacher 3 felt stress related to classroom preparation and time management. She dealt with these stressful situations by arriving at school early and skipping her lunch period to gain additional preparation time.

Preservice teachers also experienced stress surrounding classroom management challenges. Preservice Teacher 2 called management issues, "One of the biggest things that I've been having to deal with a lot." Preservice Teacher 3 expressed that she was not prepared for the behavior issues she encountered during her student teaching practicum. Both Preservice Teacher 2 and Preservice Teacher 3 relied on support systems to handle the stress of classroom management. While Preservice Teacher 2 relied on his grade level team for classroom management strategies, Preservice Teacher 3 primarily depended on the support of her mentor. Preservice Teacher 3 said, "Those were the moments that I did kind of grab my cooperating teacher and be like, 'This is what's happening. I don't really know what to do.' Luckily I did have that mentor that I could

go to." Preservice Teacher 3 also expressed anxiety for dealing with future classroom management challenges, "I'm still a bit nervous for handling it…I think once I have my own classroom when it comes to that; I just need to be prepared for that to happen because I never really was prepared."

Interview question 11. *Is there anything else you would like to tell me?*

Preservice Teacher 1 and Preservice Teacher 2 shared overall takeaways from their experiences in teacher education programs. Preservice Teacher 1 focused on clinical experiences, saying that clinical experience was some of the most valuable preparation she received. She mentioned that the student teaching practicum prepared her for the demands of the teaching profession. Preservice Teacher 1 stated:

> I do not feel like I would be prepared for a classroom without student teaching because it's kind of taught me what pace I need to be working at and has really shown me how much energy it takes to be in a classroom with these students all day.

Emphasizing the value and importance of the student teaching practicum, she added, "I get why they do it…those six-hour practicums a week, those nine-hour practicums a week, whatever, they do not prepare you at all for…just the grind that it takes to get through a day of teaching."

Preservice Teacher 2 spoke more about the coursework aspect of his teacher education program. He expressed that while some of his courses were redundant, overall, his coursework was a good experience. In addition, he expressed the desire for more coursework and support on classroom management, specifically how to deal with extreme behaviors.

Preservice Teacher 3 mentioned an interest in a yearlong student teaching internship program she heard about from another student teacher at her practicum site. She said, “I know at that college they do an experience where you can do a full year of student teaching. I don’t know if that would have been more beneficial or not, but I definitely think I would’ve enjoyed it, just because I didn’t want to leave.”

Summary

Data analysis in Chapter Four was organized into two parts. First, quantitative data were presented. Two instruments were used to collect quantitative data. To address research question one, Tschannen-Moran and Hoy’s (2001) Teachers’ Sense of Efficacy Scale (TSES) Short Form was distributed three times. The Sources of Preservice Teacher Self-Efficacy Scale was created for the purpose of this study and was distributed once to address research question two. The results of the two instruments were presented in tables and narrative form.

Next, qualitative data were presented. The qualitative instrument was an 11-question interview protocol. Interview data were collected to address research questions two, three, or four. An analysis of responses to each interview question was included. Overall themes found in the data were addressed. A summary of the results of this study is presented in Chapter Five. Research questions are discussed and connected with relevant literature. Chapter Five concludes with implications for practice and recommendations for future research.

Chapter Five: Summary and Conclusions

Teacher quality and success of students in the United States are directly affected by the quality of American teacher education programs. (Guha et al., 2017b; Stein & Stein, 2016). When teacher preparation is inadequate, student achievement suffers, school improvement efforts are compromised, and districts experience higher rates of teacher turnover (Guha et al., 2017b; NCTQ, 2018a; Stein & Stein, 2016). Teacher education improvement is critical to improving the American education system (AlAjmi et al., 2016; Guha et al., 2017b; NCTQ, 2018a; Stein & Stein, 2016). A link has been found between teacher efficacy and many positive student and teacher outcomes, making it a potential area of focus for teacher education program improvement (Giles & Kent, 2016; Martins et al., 2015; Zee & Koomen, 2016). A clearer understanding of self-efficacy belief development and implications of efficacy beliefs could inform teacher education program improvement (Ma & Cavanagh, 2018; Pfitzner-Eden, 2016; Zee & Kooman, 2016).

The purpose of this mixed-methods study was to better understand preservice teachers' self-efficacy development and perceptions of teacher education program effectiveness. Surveys were used to collect quantitative data, and results were analyzed to describe the sources of preservice teacher self-efficacy beliefs and determine if significant differences exist among teacher self-efficacy levels throughout the student teaching practicum. Qualitative data were collected through interviews to better understand the source of preservice teachers' self-efficacy beliefs along with preservice teachers' perceptions of the most effective and most challenging aspects of teacher

education programs. The findings of this study revealed areas of focus for teacher education program improvement efforts.

Chapter Five begins with a review of the findings from quantitative and qualitative data analysis. Next, conclusions are presented and connected with the literature discussed in Chapter Two. The chapter continues with implications for practice and recommendations for future research. Chapter Five concludes with a summation of the study.

Findings

Chapter Four included a presentation of the findings of the mixed-method study. The following section includes a discussion of the findings, organized by research question. Research question one was quantitative, research question two was quantitative and qualitative, and research questions three and four were qualitative.

Findings from the quantitative data analysis. Quantitative data was collected to answer research questions one and two.

Research question one. *What difference exists in preservice teacher self-efficacy at the end of their coursework, beginning of their student teaching practicum, and end of their student teaching practicum?* The purpose of this research question was to determine if preservice teacher self-efficacy levels changed throughout the student teaching practicum experiences. Research question one was answered by testing the null hypothesis: There are no significant differences in preservice teacher self-efficacy at the end of coursework, beginning of student teaching practicum, and end of student teaching.

Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES) Short Form was distributed to preservice teachers three times throughout the student

teaching practicum to collect data on self-efficacy levels. In this case, preservice teacher self-efficacy was the dependent variable, and time was the independent variable. Since data from more than two groups were analyzed to determine whether significant differences existed among preservice teacher self-efficacy levels, an analysis of variance (ANOVA) was the appropriate statistical test (Ary et al., 2019; Fraenkel et al., 2019; Mills & Gay, 2019).

An ANOVA of overall preservice teacher self-efficacy levels resulted in an F value of 0.99, which was less than the 3.81 critical value. There were no significant differences among overall preservice teacher self-efficacy levels throughout the student teaching practicum. Thus, the null hypothesis; there are no significant differences in preservice teacher self-efficacy at the end of coursework, beginning of student teaching practicum, and end of student teaching; was not rejected, and the alternative hypothesis was rejected (Bluman, 2018; Fraenkel et al., 2019).

To further substantiate the decision to not reject the null hypothesis, data collected using the TSES was further analyzed using Tschannen-Moran and Hoy's (2001) three teaching efficacy subscales: efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement. ANOVA tests were applied to results to detect the existence of significant differences among teacher efficacy levels for each of the subscales. An ANOVA was performed on data collected on efficacy for instructional strategies; the resulting *F* value of 1.19 was less than the critical value of 3.81. It was concluded that no significant differences exist among preservice teacher self-efficacy for instructional strategies throughout the student teaching practicum. Similarly, an ANOVA on data collected on efficacy for classroom management resulted in an *F* value of 2.31,

which was less than the critical value of 3.81. Thus, no significant differences exist among preservice teacher self-efficacy for classroom management throughout the student teaching practicum. Finally, efficacy for student engagement was explored with an ANOVA. The resulting *F* value of 2.19 was less than the critical value of 3.63, so it was concluded that no significant differences exist between preservice teacher self-efficacy for student engagement throughout the student teaching practicum.

Further examination of the data revealed preservice teacher self-efficacy levels were generally high across the three distributions of the survey. The TSES is a Likert-type scale with response options ranging from one to nine. When examining preservice teacher self-efficacy levels on each subcategory of the TSES across the three distributions, the lowest mean score of 6.8 was found on the management subcategory from the first-round distribution.

Research question two. *What sources of self-efficacy did preservice teachers perceive to be most impactful?* The purpose of this research question was to better understand which of Bandura's (1977) sources of self-efficacy were perceived to have the most impact on preservice teacher self-efficacy during the student teaching practicum. Quantitative and qualitative data were collected to more completely answer this research question. In this section, quantitative data are presented.

The Sources of Preservice Teacher Self-Efficacy Scale, a Likert-type scale, was distributed to collect quantitative data on the perceived impact of each of the four sources of self-efficacy. Three participants completed the scale by responding to each item on a scale from one (this does not describe me at all) to nine (this absolutely describes me). Results for each self-efficacy source were analyzed with descriptive statistics.

Mastery experiences. The scale included three items to better understand the impact of mastery experiences on preservice teachers' self-efficacy development. The collective mean score of all mastery experience items was 7 (*SD* = 0.5). The mean reflects the participants' general feeling that the mastery experience scale items described them relatively well. Survey item 1, *During my student teaching practicum, my teaching experiences were successful,* scored the highest mean of all mastery experience items with 7.33.

Vicarious experiences. Three items were included to gather data on the impact of vicarious experiences on preservice teachers. The mean of all vicarious experiences, 7.89 (*SD* = 0.78), was the highest of the four sources of self-efficacy beliefs. A mean score of 7.89 reflects the participants' general feeling that the vicarious experience scale items described them well. Survey item 4, *I learned a lot from observing strong teachers during my student teaching practicum,* scored the highest mean of any item on the scale with 8.33.

Verbal persuasion. The third section of the survey included four items on verbal persuasion. The collective mean score of all verbal persuasion items was 7.5 (*SD* = 1.78). The mean reflects the participants' general feeling that the verbal persuasion scale items described them well. Two verbal persuasion items scored equally high means. Item 9, *During my student teaching practicum, I got positive feedback from my mentor,* and item 10, *During my student teaching practicum, I got positive feedback from other professionals,* both scored a mean of 8. Two of the three responses were high on Item 7; *My mentor told me I will be a good teacher,* with scores of 8 and 9. These higher scores

indicate that the statement described two respondents well. However, one participant responded with a 2, indicating that the statement did not describe him or her well at all.

Emotional and physiological states. The final section of the survey was comprised of four items on emotional and physiological states. The responses to items in this section were more disparate than the other three sections of the survey, and the mean was lowest of all self-efficacy sources. Overall, the mean score of all emotional and physiological states items was 5.33 (*SD* = 2.46). Participants all responded with relatively high scores on Item 13, *I get excited when I do something to help a student learn*, resulting in a mean score of 8, the highest on this section of the survey. However, responses to other items in the section varied. Responses to item 11, *I felt nervous a lot during my student teaching practicum,* varied the most. The first participant responded with 4, indicating that the statement moderately described him or her. The second participant responded with 7, indicating the statement described him or her moderately well. The third participant responded with 1, indicating that the statement did not describe him or her at all. Although the third participant had responded to item 11 with the lowest possible score, his or her response to item 12, *I mostly felt overwhelmed during my student teaching practicum,* was 7, which indicates that the statement described him or her moderately well. Conversely, the second participant, who responded moderately high to item 11, responded to item 12 with a score of 3, indicating that the statement described them at a lower level than item 11.

Findings from the qualitative data analysis. Qualitative data were collected to address research questions two, three, and four.

Interviews were conducted to gather qualitative data. Eleven questions were developed for the interviews to better understand preservice teachers' perceptions in three major areas. Interview questions one through five were designed to gather preservice teacher perceptions of effective aspects and challenging aspects of teacher education programs. Interview questions six through 10 were included to better understand preservice teacher perception of the impact of sources of self-efficacy on self-efficacy development. Interview question 11 was an open-ended item, included to provide preservice teachers an opportunity to voice any additional perceptions or thoughts related to teacher education.

Research question three. *What aspects of teacher education programs do preservice teachers perceive to be most effective in preparing them to work in the classroom?*

Research question four. *What aspects of teacher education programs do preservice teachers perceive to be most challenging in preparing them to work in the classroom?*

Interview question one. Think about your experiences throughout your teacher education program. What has been most helpful in preparing you to work in the classroom? What has been most challenging?

Two preservice teachers reported that coursework was most helpful in preparing them to work in the classroom, specifically in the area of literacy. Preservice Teacher 2 also mentioned that coursework had helped his lesson planning abilities. Preservice Teacher 3 expressed that although coursework was beneficial, clinical experiences were the most helpful aspect of teacher education. Preservice Teacher 3 felt that clinical

experiences prepared her for the reality of a classroom by providing the opportunity to put learning from coursework into practice.

Although many aspects of teacher education were beneficial, each preservice teacher faced challenges. Clinical work was the most helpful for Preservice Teacher 3, but the brevity of clinical experiences presented the biggest challenge for her. Preservice Teacher 3 felt the lack of time in classrooms limited her opportunities to develop relationships with students, understand student needs, and develop teaching skills. Preservice Teacher 1 and Preservice Teacher 2 found their biggest challenges during the student teaching practicum. Preservice Teacher 1 struggled to differentiate instruction to meet the needs of the diverse learners in her classroom, while Preservice Teacher 2 encountered challenges with classroom management and student mental health issues.

Interview question two. What aspects of your coursework were most beneficial? What aspects were most challenging? What courses, in particular, were most or least helpful?

All preservice teachers noted the benefit of coursework that directly applied to teaching practice. Preservice Teacher 1 and Preservice Teacher 2 specifically mentioned literacy coursework as most beneficial. Preservice Teacher 2 also highlighted the benefit of a mathematics methods course. He added that methods courses, in general, provided an opportunity to learn about lesson planning and put that learning into practice. Similarly, Preservice Teacher 3 felt that the most beneficial part of her coursework was when content was presented and immediately applied in clinical experiences.

Despite finding some coursework beneficial, all participants expressed that some coursework was irrelevant or redundant. Preservice Teacher 3 felt that the information

presented in introductory courses was too basic. Two preservice teachers specifically addressed challenges coursework in science and social studies. Challenges included redundancy in methods presented in science and social studies courses, along with a lack of relevance to current classroom practices. Preservice Teacher 1 cited the disconnect between methods presented in coursework and current classroom practice in science and social studies as the reason she felt very unprepared to teach those subjects. Preservice Teacher 2 and Preservice Teacher 3 also found the lack of connection to classroom practice challenging. Preservice Teacher 2 felt frustrated that he was required to complete assignments that did not directly apply to teaching in a classroom. Preservice Teacher 3 mentioned that a highly specific course in the areas of music, art, and physical education was most challenging for her because it lacked application in the regular education classroom.

Interview question three. Is there an area in which you feel more coursework would be beneficial?

Preservice Teacher 2 did not feel additional coursework would be beneficial; he expressed satisfaction with the variety and amount of coursework included in his program. The other preservice teachers expressed a desire for coursework that more closely aligned with current classroom practices. Preservice Teacher 1 mentioned coursework on teaching science and social studies with a project-based approach. Preservice Teacher 3 suggested additional coursework on small-group guided-reading instruction, highlighting the need for practical strategies and alignment to current classroom practices.

Interview question four. What aspects of your student teaching practicum were most beneficial? What aspects were most challenging? What people or experiences, in particular, were most or least helpful?

Perspectives of the most beneficial aspects of the student teaching practicum varied; however, all preservice teachers mentioned the benefit of their professional support systems. Preservice Teacher 1 stated that the most beneficial aspect for her was the opportunity to apply her knowledge of teaching with the support of an experienced mentor. She also mentioned the help provided by her grade level team and building principal.

When asked which people or experiences were most helpful, both Preservice Teacher 2 and Preservice Teacher 3 cited support from colleagues during the student teaching practicum. Preservice Teacher 3 mentioned support and feedback from her university supervisor as one of the most helpful experiences during her student teaching practicum. She also expressed a desire for more feedback from her university supervisor.

In addition, to support systems, Preservice Teacher 2 and Preservice Teacher 3 expressed the benefit of working consistently with the same class for an extended time during the student teaching practicum. Preservice teachers felt that consistency in a classroom provided time to build relationships with students. An additional benefit was the opportunity to their knowledge of teaching into practice in a consistent setting.

Preservice Teachers faced different challenges during the student teaching practicum. Preservice Teacher 1 and Preservice Teacher 3 highlighted challenges from within the classroom while Preservice Teacher 2's biggest challenge related to his teacher education program. Preservice Teacher 1 cited differentiation of instruction to meet the

diverse needs of students as her biggest challenge. Preservice Teacher 3 mentioned classroom management as the most significant challenge she faced. Preservice Teacher 2 expressed that his biggest challenge came from a lack of communication with his teacher education program. After an initial seminar, Preservice Teacher 2 did not receive any additional communication, which resulted in uncertainty of teacher education program expectations for the student teaching practicum.

Interview question five. What suggestions do you have for improving the student teaching practicum experience?

All three participants had suggestions for improving the student teaching practicum. One common thread was to modify the transition into the student teaching practicum. Preservice Teacher 1 made two suggestions. First, she suggested beginning the student teaching practicum with a longer period of observation of the mentor teacher would be beneficial. Second, she suggested a slower pace for the practicum. Preservice Teacher 1 expressed that more initial observation and a more gradual addition of teaching responsibilities could increase preservice teachers' confidence in teaching and reduce the likelihood of becoming overwhelmed. Preservice Teacher 3 made a related suggestion of a more gradual shift from short, isolated clinical experience to full-time teaching during the student teaching practicum.

Another common thread in preservice teacher suggestions was the modification of the teacher education program's involvement and assignment requirements during the student teaching practicum. Preservice Teacher 2 expressed a desire for increased communication and follow-up between the university supervisors and preservice teachers, along with feedback on required reflection documents. Preservice Teacher 3

suggested reduction or shortening of the collection of evidence required by her teacher education program. She felt that the time required to collect artifacts and complete reflections throughout the student teaching practicum took her focus away from teaching.

Research question two. *What sources of self-efficacy did preservice teachers perceive to be most impactful?*

Interview question six. Think about a time when your teaching was successful. How do you think that contributed to your self-confidence in teaching? What did you learn about yourself as a teacher from that experience?

Mastery experiences are one of Bandura's (1977) theorized sources of self-efficacy. Interview question six was included to collect data on preservice teachers' perceptions of the impact of a successful mastery experience. All preservice teachers expressed that successful teaching experiences increased their teaching confidence. One participant added that the increase in confidence transferred to teaching other subjects. Preservice Teacher 2 added that after his successful teaching experience, he better understood the impact he had on students and learned the importance of flexibility in teaching.

Interview question seven. What about a time that you felt your teaching was unsuccessful? How do you think that affected your confidence? What did you learn about yourself as a teacher from that experience?

Interview question seven also aligns with Bandura's (1977) mastery experiences as a self-efficacy belief source. All participants described an unsuccessful mathematics teaching experience. Two preservice teachers described unsuccessful lessons in mathematics, while one preservice teacher expressed that she was unsuccessful in making

the math curriculum engaging for students. All preservice teachers expressed negative feelings following unsuccessful teaching experiences such as humiliation, fear of disappointing a mentor, and discouragement. Despite negative feelings, all preservice teachers reported that they learned about themselves as teachers after unsuccessful teaching experiences. One common theme was a renewed focus on flexibility, adaptation of lessons, and re-teaching material to meet the needs of students better.

Interview question eight. Describe a time you observed a teacher successfully handle a difficult situation in the classroom. What did you learn from that situation?

Interview question eight aligns with vicarious experience, one of Bandura's (1977) sources of self-efficacy. All preservice teachers described observing another teacher successfully handling situations related to student behavior. When describing what they learned from the described observation, all participants highlighted the importance of professional support systems to manage student behavior challenges. Preservice teachers named several professionals who provided support, including mentor teachers, administration, parents, parent liaisons, behavior technicians, and other teachers.

Interview question nine. Throughout your student teaching practicum, what type of feedback have you received from others? How do you think it affected your growth as a teacher? Which individuals provided the most valuable feedback (mentors, administration, university supervisor, etc.)?

Interview question nine was included to collect data on the impact of verbal persuasion, another source of self-efficacy beliefs (Bandura, 1977). All preservice teachers received feedback from university supervisors and mentor teachers in the areas

of instruction and classroom management. Preservice Teacher 2 and Preservice Teacher 3 received additional feedback from other professionals, including their grade-level teams. Preservice Teacher 3 also received feedback from building administration. All participants recalled feeling encouraged after receiving positive feedback. Preservice teachers stated that they experienced increased confidence and feelings of capability. Preservice teachers expressed both positive feelings following feedback, and a focus on growth after receiving constructive feedback from weekly reflections with mentors or observations by university supervisors.

When asked who provided the most valuable feedback, participant responses varied. Preservice Teacher 1 found continuous feedback from her mentor teacher to be most valuable. Preservice Teacher 2 also mentioned the value of feedback from his mentor teacher, but also appreciated feedback from other teachers. Preservice Teacher 3 expressed that the feedback from her university supervisor was most helpful because university supervisors were critical experts whose feedback could help her improve. She also expressed the desire for more opportunities to receive observation feedback from her university supervisor. In addition, Preservice Teacher 3 said that although university supervisor feedback was most helpful, the feedback from other teachers was her favorite because it was "actually honest and from the heart, because they were saying it when it wasn't necessary."

Interview question 10. What is your general attitude as you finish your student teaching practicum? Have you experienced any stressful situations so far? How have you handled the stressful situations?

Interview question 10 was included to collect data on the impact of emotional and physiological states, the final source of self-efficacy beliefs (Bandura, 1977). Preservice teachers expressed both positive and negative feelings. Preservice Teacher 1 mentioned that her professional support system helped her overcome challenges throughout the student teaching practicum, resulting in feelings of encouragement. Preservice Teacher 2 and Preservice Teacher 3 both expressed that it was difficult to leave the students in their classes, but they felt ready to complete the student teaching practicum and work in their own classrooms.

When participants responded to the question regarding stressful situations, two themes emerged. One source of stress for Preservice Teacher 1 and Preservice Teacher 3 was coping with the workload of the student teaching practicum. As lesson preparation and teaching responsibilities increased, time management became stressful. To cope, preservice teachers designated time to plan and prepare lessons.

The second common source of stress was the challenges preservice teachers faced in classroom management. Preservice teachers encountered a variety of classroom management challenges throughout their student-teaching practicums. Preservice Teacher 2 and 3 mentioned relying on their professional support systems to cope with behavior management challenges. Preservice Teacher 2 relied on his grade level team for support, while Preservice Teacher 3 depended on the support of her mentor teacher. Preservice Teacher 3 mentioned that she was not prepared to deal with the behavior management issues she encountered and that she was experiencing anxiety about dealing with classroom management in a future teaching position.

Interview question 11. Is there anything else you would like to tell me?

Preservice Teacher 1 and Preservice Teacher 2 shared takeaways from their overall experiences in teacher education programs. Preservice Teacher 1 stated that clinical experiences were some of the most valuable preparation she received and that the student teaching practicum prepared her for the demands of the teaching profession. Preservice Teacher 2 focused on the impact of coursework in his response. Overall, he felt coursework was a good experience despite some redundancy. Preservice Teacher 2 expressed the desire for more coursework and support on classroom management, specifically how to deal with extreme behaviors.

Preservice Teacher 3 mentioned an interest in other types of teacher preparation programs. Another preservice teacher at her practicum site was participating in a yearlong internship. Preservice Teacher 3 was uncertain if a longer practicum would have been more beneficial but felt that she would have enjoyed it.

Conclusions

This section includes a discussion of research conclusions. Conclusions are compared with the literature in Chapter Two. The mixed design allowed for a more complete understanding of the issue, including generalizable quantitative and detailed qualitative results to more clearly understand and explain the quantitative results (Creswell & Creswell, 2018; Mills & Gay, 2019). Although conclusions are categorized by research question, some conclusions are connected to allow for a more complete understanding.

Research question one. *What difference exists in preservice teacher self-efficacy at the end of their coursework, beginning of their student teaching practicum, and end of their student teaching practicum?*

No significant differences were found among preservice teacher self-efficacy levels at the end of coursework, beginning of student teaching practicum, and end of student teaching practicum. Results can be compared with two recent studies in which Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES) was used to measure changes of preservice teacher self-efficacy levels over time. Findings are consistent with Berkant and Baysal's (2018) study, which resulted in no significant change in preservice teacher self-efficacy beliefs over the course of a semester. In contrast, Berg and Smith (2018) found a significant difference in preservice teacher self-efficacy levels before and after their final practicum experience.

Upon further examination of the data, it was noted that overall, preservice teachers had consistently high levels of self-efficacy beliefs at the end of coursework, beginning of the student teaching practicum, and end of the student teaching practicum. These findings align with recent quantitative studies and qualitative studies of preservice teacher self-efficacy (Demirtaş, 2018; Frazier et al., 2019; Giles & Kent, 2016). Demirtaş (2018) used the TSES to measure self-efficacy levels of male and female preservice teachers and concluded, "The critical thing is that self-efficacy beliefs in terms of sub-dimensions are high for both groups" (p. 119). Giles & Kent (2016) found preservice teachers had high self-efficacy before completing their teacher education programs. Using qualitative methods, Frazier et al. (2019) found preservice teachers possessed high levels of positive self-efficacy and confidence.

In a review of studies on teacher self-efficacy, Morris et al. (2017) reported that teachers who feel well prepared and have taken a variety of pedagogical courses generally feel more confident and capable. Martins et al. (2015) found a clear

relationship between preservice teachers' self-efficacy beliefs and their clinical experiences. It is possible that preservice teachers' self-efficacy levels were consistently high due to feelings of capability stemming from a foundation of pedagogical coursework and positive clinical experiences leading up to the student teaching practicum. Another possibility is that preservice teachers with a high level of self-efficacy elected to participate in the study while those with lower efficacy levels chose not to participate. Frazier et al. (2019) contextualized high levels of preservice teacher self-efficacy, "While this may seem naïve to seasoned educators and educational researchers, it is important to remember that this is likely a logical starting point for many beginning preservice teachers" (p. 269).

Research question two. *What sources of self-efficacy did preservice teachers perceive to be most impactful?*

Mastery experiences. Examination of quantitative and qualitative data revealed that mastery experiences had a sizable impact on preservice teachers. Responses to the mastery experience items on Sources of Preservice Teacher Self Efficacy Scale resulted in a mean score of 7. Although the mean for mastery experiences was lower than two other sources of self-efficacy, it is still relatively high. Evidence of the impact of mastery experiences was uncovered during qualitative data analysis. One major theme found during qualitative data analysis was that mastery experiences positively or negatively influence preservice teachers' confidence. According to Martins et al. (2015), mastery experiences during the student teaching practicum include characteristics of the class, teaching, and planning. Mastery experiences have a sizable impact on self-efficacy because they are based upon an individual's own experience (Bandura, 1977; Maddux &

Stanley, 1986). Pftizner-Eden (2016) found mastery experiences most significantly predicted preservice teacher self-efficacy. Although Bandura (1977) asserted that mastery experiences are the most potent source of self-efficacy, he also emphasized that when a task is new, other sources of efficacy may have a stronger effect on an individual's self-efficacy beliefs.

Vicarious experiences. Quantitative data analysis revealed that responses to vicarious experience items on the Sources of Preservice Teacher Self-Efficacy Scale scored a mean of 7.89, the highest of all sources. In addition, one major theme that resulted from the qualitative data analysis was the importance of a professional support system. When asked about observing another teacher handle a difficult situation, all preservice teachers described watching another teacher rely on individuals in their professional support system to overcome the challenging situation. During the student teaching practicum, vicarious experiences consist of observing other teachers, especially the mentor teacher (Martins et al., 2015). According to Bandura (1977, 1997), vicarious experiences can be a less dependable source of self-efficacy because they are based on another individual's capabilities. However, when a task is unfamiliar, the effect of vicarious experiences increases (Bandura, 1977). If preservice teachers perceive the individual modeling to be like themselves, vicarious experiences can have a stronger effect on self-efficacy beliefs (Bandura, 1977, 1997; Maddux & Stanley, 1986; Morris et al., 2017). Vicarious experiences may have had an increased impact on preservice teachers due to their lack of professional experience and perceived similarity to teachers they observed.

Verbal persuasion. Analysis of quantitative and qualitative data indicated that verbal persuasion has a considerable impact on preservice teachers. Verbal persuasion items on the Sources of Preservice Teacher Self-Efficacy Scale scored a mean of 7.5, the second-highest of the four sources of efficacy. The analysis of qualitative data also supported the impact of verbal persuasion. One theme found in qualitative data was feedback influenced a preservice teacher's growth and confidence.

Bandura (1977; 1997) theorized that mastery experiences and vicarious experiences have a more potent impact on self-efficacy than verbal persuasion; however, the impact of verbal persuasion may be greater when an individual has little experience in a given field. Due to a lack of experience in teaching, verbal persuasion has particular importance for teachers beginning their careers (Furtado Nina et al., 2016; Pfitzner-Eden, 2016). According to Martins et al. (2015), preservice teachers often receive verbal persuasion in the form of feedback during conversations after lessons. Preservice teachers reported receiving feedback on their teaching from numerous professionals, primarily their mentors, but also university supervisors, administrators, and other teachers. The impact of verbal persuasion relies on the perceived credibility and knowledgeability of the source (Bandura, 1977; 1997; Maddux & Stanley, 1986). Analysis of qualitative data revealed that preservice teachers generally held positive views of mentor teachers and university supervisors and considered them experts. Preservice teachers must be matched with strong mentor teachers who are equipped to provide adequate feedback to facilitate reflection and growth (Giles & Kent, 2016; NCTQ, 2016). Overall, pre-service teachers received feedback which generally increased their teaching confidence and promoted a focus on continued growth. Findings align

with previous research, further reinforcing the impact of verbal persuasion, especially feedback from the mentor, on preservice teacher self-efficacy (Bandura, 1977; 1997; Furtado Nina et al., 2016; Pfitzner-Eden, 2016).

The considerable impact of verbal persuasion, namely positive feedback and encouragement received from numerous other professionals, connects with the importance of a preservice teacher's professional support system. Preservice teachers noted strong relationships with mentors, university supervisors, and other teachers. Additionally, preservice teachers emphasized the encouragement and support from other teachers, noting that it was more valuable to them because it was not required.

Emotional and physiological states. Emotional and physiological states remain the least studied source of teacher self-efficacy (Morris et al., 2016). Analysis of quantitative and qualitative data revealed a considerably lower impact of emotional and physiological states on preservice teachers. A disparity in preservice teacher responses on some emotional and physiological states items was discovered. The Sources of Preservice Teacher Self-Efficacy Scale was developed for the purpose of this study due to a lack of reliable and valid instruments (Furtado Nina et al., 2016; Mills & Gay, 2019). The use of a newly developed scale is one possible explanation for the disparity in participant responses.

Quantitative data analysis resulted in a mean score of 5.33 for emotional and physiological states, by far the lowest of the sources of self-efficacy. Quantitative findings align with previous research in which emotional and physiological states were not found to significantly influence preservice teachers (Furtado Nina et al., 2016). In contrast, Pfitzner-Eden (2016) found that physiological and affective states contributed

strongly to preservice teacher self-efficacy; however, their effect was mediated by mastery experiences. A significant association between sources of self-efficacy exists, and an individual's interpretation of source information affects the impact on their self-efficacy (Bandura, 1977; Furtado Nina et al., 2016).

Qualitative data were aligned with quantitative findings. Analysis of the qualitative data revealed that although preservice teachers experienced stressful and taxing situations during the student teaching practicum, they found ways to cope on their own or relied on their support systems. In addition, preservice teachers generally had positive attitudes as they completed the student teaching practicum. According to Bandura (1977), as individuals experiencing stressful situations do things to cope, they become less anxious. It is possible that by the end of the student teaching practicum, the impact of emotional and physiological states had diminished due to preservice teachers' coping skills and support systems.

Research question three. *What aspects of teacher education programs do preservice teachers perceive to be most effective in preparing them to work in the classroom?*

Qualitative data were collected using an 11-item interview protocol. Interviews were recorded, transcribed, coded, and compared. As coded data were analyzed, themes emerged, revealing what aspects of teacher education programs are perceived as most effective. Major themes included relevance and connection to practice, along with the impact of a professional support system. Themes are presented and discussed in the following sections.

Relevance and connection to practice. Preservice teachers found their coursework to be beneficial when it was relevant and directly applicable in the classroom. Integration of coursework and clinical experiences is essential (Berg & Smith, 2018; Berkant & Baysal, 2018; Giles & Kent, 2016; Morris et al., 2017). The opportunity to put learning from coursework into action during clinical experiences was one of the most beneficial aspects of teacher education for preservice teachers. This perception aligns with Bandura's (1977) mastery experiences as a potent source of self-efficacy; preservice teachers learn and increase their teaching confidence by spending time in the classroom teaching. The most powerful way to influence preservice teacher self-efficacy in teacher education is the opportunity to apply knowledge and skills in a classroom (Morris et al., 2017). Although coursework and clinical experiences are important components of teacher education, clinical experience more significantly impacts preservice teacher learning (AlAjmi et al., 2016). Thus, integrated clinical experiences throughout teacher education, along with the teaching experience gained during the student teaching practicum, are critical.

Impact of a professional support system. As preservice teachers discussed their experiences in teacher education programs, professional support systems were cited numerous times as a helpful aspect of teacher education. Support systems included mentor teachers, university supervisors, building administrators, and other teachers. Professional support systems provided models of good instructional practices and feedback to influence growth. According to the National Council on Teacher Quality (2017), the opportunity to learn how to provide effective instruction from a professional

and the provision of valuable feedback to student teachers are two crucial components for success in the student teaching practicum.

The student teaching practicum can be a valuable opportunity for preservice teachers to build on coursework by learning from a strong mentor (NCTQ, 2016; 2017). Mentor teachers act as a model for preservice teachers' vicarious experiences, an important source of self-efficacy (Bandura, 1977; Martins et al., 2015). Preservice teachers perceived vicarious experiences to be the most impactful source of self-efficacy. Generally, preservice teachers felt they had the opportunity to observed and learn from strong teachers delivering high-quality instruction. The mentor plays an essential role in the student teaching experience (NCTQ, 2016; 2017).

Another important aspect of the professional support system was the provision of feedback to preservice teachers. Feedback from other professionals is verbal persuasion, an important source of self-efficacy, especially when a task is new (Bandura, 1977; Martins et al., 2015; Pfitzner-Eden, 2016). Preservice teachers found feedback to be valuable. Positive feedback increased their teaching confidence, and constructive feedback revealed areas for potential growth. These results align with previous research in which positive feedback was found to build capacity in preservice teachers (Furtado Nina et al., 2016; NCTQ, 2016; Pfitzner-Eden, 2016). The influence of feedback as a form of verbal persuasion is mediated by the perceived credibility of the source (Bandura, 1977, 1997; Maddux & Stanley, 1986). Generally, preservice teachers viewed individuals providing feedback as experts, bolstering the impact of feedback. Feedback from members of a preservice teacher's professional support system is an important component of the student teaching practicum.

Research question four. *What aspects of teacher education programs do preservice teachers perceive to be most challenging in preparing them to work in the classroom?*

Data on challenging aspects of teacher education were collected using an interview protocol. As qualitative data were analyzed, themes emerged, revealing what aspects of teacher education programs are perceived as most challenging. Major themes mirrored the perceived helpful components of teacher education, including a lack of relevance and connection to practice, along with a disconnect in the impact of the professional support system. Themes are presented and discussed in the following sections.

Lack of relevance and connection to practice. Preservice teachers found relevance and connection to practice to be one of the most helpful aspects of teacher education; similarly, a lack of relevance and connection to practice was a significant challenge. Preservice teachers felt the brevity and lack of consistency in clinical experiences leading up to the student teaching practicum made the transition into full time teaching more challenging. Clinical experiences have been found to more significantly impact teacher learning than coursework (AlAjmi et al., 2016). Thus, there is an argument for a greater focus on clinical experiences (AlAjmi et al., 2016; Seymour et al., 2018; Stein & Stein, 2016).

Another challenge was irrelevant or redundant coursework. Knowledge acquired throughout coursework should be applicable and useful in the classroom (Morris et al., 2017; Sharma & Nuttal, 2016). Preservice teachers cited the disconnect between the information presented in coursework and current classroom practices as a major

challenge. According to Morris et al. (2017), clinical experiences are the most powerful way to influence preservice teacher self-efficacy because preservice teachers are given the opportunity to apply learning from their coursework in a classroom setting. Coursework and clinical experiences should be closely aligned (AlAjmi et al., 2016).

Disconnect in impact of support system. Analysis of qualitative data revealed the impact of the professional support system was critical in preservice teacher success during the student teaching practicum. A disconnect in the professional support system was revealed when examining preservice teachers' perceived challenges. Two major disconnects included lack of communication with teacher education program administrators and a low number of observations and feedback from the university supervisor.

Preservice teachers expressed the desire for additional communication and follow-up from teacher education program representatives. Challenges ranged from an overall lack of communication between program administrators and preservice teachers to a desire for more feedback and follow-up on required assignments and observations during the student teaching practicum. According to Giles and Kent (2016), "Teacher education programs play an important role in the development of teacher candidates' self-efficacy and identity" (p. 34). When teacher education program supervisors provide feedback and opportunities for reflection, the connection between coursework and clinical experiences is strengthened (Giles & Kent, 2016). An additional challenge was the low number of observations and feedback from the university supervisor. The National Council on Teacher Quality (2017) recommends that preservice teachers should be regularly observed by program supervisors at least five times over the course of the

student teaching practicum. The number of observations by university supervisors varied, but participating preservice teachers received less than five. Preservice teachers who are observed at least five times are more effective in their own classrooms (NCTQ, 2016; 2017). Feedback from university supervisors was found to have a positive impact on preservice teachers. Observations of the student-teacher provide program supervisors the opportunity to assess their level of mastery of teaching skills and provide specific feedback (NCTQ, 2017). Generally, preservice teachers cited the low number of observations by a university supervisor as a challenging aspect of teacher education. One preservice teacher, who was observed twice by a university supervisor, specifically suggested an increased number of observations. Teacher education programs should give detailed, observational feedback to preservice teachers to facilitate reflection and growth (Giles & Kent, 2016).

Implications for Practice

This study was designed to better understand preservice teachers' self-efficacy development and perceptions of teacher education program effectiveness. After evaluating the results of the study, implications for practice became evident. Implications for practice include improving preservice teachers' professional support systems and strengthening the connection between theory and practice.

Improve preservice teachers' professional support systems. Analysis of data revealed that professional support systems were a helpful aspect of teacher education programs. Preservice teachers found the mentor teacher and university supervisor to be the most critical members of their support systems. Learning how to provide effective

instruction by observing a mentor and receiving valuable feedback are the two crucial components for success during the student teaching practicum (NCTQ, 2017).

Observation of a mentor is a vicarious experience (Bandura, 1977; Martins et al., 2015). Preservice teachers perceived vicarious experiences to be the most impactful source of self-efficacy. Thus, teacher education programs should work to maximize the amount of high-quality vicarious experiences preservice teachers are provided throughout the teacher education program. One way to accomplish this is to provide more flexibility in the pace of the student teaching practicum. If preservice teachers feel they would benefit from more observation of the mentor, they should be allowed to do so before assuming additional teaching responsibility. Furthermore, an effort should be made to match preservice teachers with high-quality mentors. When teacher education programs were evaluated based on their level of effort in matching preservice teachers with strong mentors, most programs scored poorly (NCTQ, 2016; 2017). Program supervisors should assume an active role in establishing clear mentor qualifications and screening potential mentors to ensure they meet qualifications. To be considered qualified, mentor teachers must be highly effective teachers who are capable of successfully mentoring adults (NCTQ, 2016; 2017). According to the National Council on Teacher Quality (2017), when program supervisors participate in mentor selection, the student teachers have a better experience.

Preservice teachers need opportunities to observe examples of high-quality instruction and "high-quality feedback and guidance" (NCTQ, 2017, p. 2). Throughout the student teaching practicum, feedback is a form of verbal persuasion that comes primarily from the mentor teacher and the university supervisor (Bandura, 1977; Martins

et al., 2015). Preservice teachers perceived verbal persuasion as a potent source of self-efficacy. Positive feedback builds capacity in preservice teachers (Furtado Nina et al., 2016; NCTQ, 2016; Pfitzner-Eden, 2016). Teacher education programs should provide practical strategies to mentor teachers on how to provide feedback in a way that encourages growth and supports preservice teacher self-efficacy development. Furthermore, university supervisors should work to provide guidance to preservice teachers by strengthening the connection between the teacher education program and the preservice teacher. This relationship can be strengthened through clear communication of expectations for the student teaching practicum, continuous monitoring of preservice teacher progress, and an increased number of classroom observations with feedback. Preservice teachers who are observed at least five times are more effective in their own classrooms (NCTQ, 2017).

Strengthen the connection between theory and practice. A major theme that emerged during the analysis of preservice teachers' perceptions of teacher education programs was the importance of relevance and practical application of coursework. Preservice teachers felt that irrelevant or redundant coursework left them unprepared to teach. Content presented throughout coursework should be applicable and useful in the classroom (Morris et al., 2017; Sharma & Nuttal, 2016). Preservice teachers also felt the brevity and lack of consistency in clinical experiences leading up to the student teaching practicum made the transition into full time teaching a challenge. AlAjmi et al. (2016) found that clinical experiences more significantly impact preservice teacher learning than coursework. Application of learning in a classroom setting is a mastery experience and can powerfully affect preservice teacher self-efficacy (Morris et al., 2017). To more

effectively connect theory and practice, teacher education programs should align coursework with clinical experiences (AlAjmi et al., 2016).

To better integrate coursework and clinical experiences, teacher education program supervisors should examine coursework offerings. Content presented throughout coursework should align with current educational best practices and clinical experience opportunities. One way to evaluate the practicality of coursework is to survey preservice teachers and recent graduates to better understand how well coursework prepared them for the classroom. Exit interviews could also be conducted to better understand teacher candidates' perceptions of preparedness as they complete a teacher education program.

Recommendations for Future Research

The examination of the results revealed several directions for future research. The first recommendation is a replication of the causal-comparative and descriptive portions of the study with a larger sample. The distribution of the TSES throughout the student teaching practicum resulted in three data sets; however, the response rate was quite low. A larger sample size would yield more statistically robust results when performing an ANOVA on the results of a causal-comparative study. A minimum sample of 30 participants is recommended for causal-comparative research (Fraenkel et al., 2019, p. 102; Mills & Gay, 2019, p. 156). Results of previous research on changes in preservice teacher efficacy throughout the student teaching practicum are inconsistent (Berg & Smith, 2018; Berkant & Baysal, 2018). Thus, further studies on preservice teacher self-efficacy levels throughout the student teaching practicum are needed.

Similarly, the descriptive portion of the study resulted in a very low response rate. A sample of 100 or more is recommended for descriptive studies (Fraenkel et al., 2019, p. 102). Descriptive statistics calculated from a larger sample would be more generalizable and provide a clearer understanding of the sources of preservice teachers' self-efficacy beliefs.

A second recommendation is to replicate the study with a wider variety of teacher education institutions, including various program types. This study was limited to one region of one state. All three teacher education programs in this study were traditional four-year institutions where preservice teachers completed a semester-long student teaching practicum at the end of the program. A study that included a larger geographical region and a variety of teacher education program types may deepen understanding of preservice teacher self-efficacy and program perceptions.

Further studies to evaluate the reliability and validity of the Sources of Preservice Teacher Self-Efficacy Scale are also recommended. There is a lack of reliable and valid instruments to measure the sources of teacher self-efficacy (Furtado Nina et al., 2016). The Sources of Preservice Teacher Self-Efficacy Scale was piloted and revised before being used in this study. However, further evaluation of the instrument with a larger sample size would be beneficial.

The final recommendation is to conduct a study in which a cohort of preservice teachers is followed throughout their first few years of teaching. Analysis of results from the present study, among others, indicated that preservice teachers had high self-efficacy levels and felt generally prepared to enter the classroom (Demirtaş, 2018; Giles & Kent, 2016; Frazier et al., 2019). However, experts have concluded that many teacher

candidates are inadequately prepared for the realities of the classroom, resulting in high teacher turnover rates (Guha et al., 2017b; NCTQ, 2018a; Stein & Stein, 2016). A longitudinal study of preservice teacher self-efficacy beliefs could reveal the stability of self-efficacy levels as preservice teachers transition into full-time teaching. Future studies examining changes in self-efficacy from the student teaching practicum into the first years of teaching could provide a deeper understanding of teacher self-efficacy development and perceived level of preparedness.

Summary

This mixed-methods study was designed to examine preservice teacher self-efficacy development and perceptions of teacher education program effectiveness. Four research questions guided the study. The first research question was quantitative and was designed to determine if significant differences existed in preservice teacher self-efficacy levels throughout the student teaching practicum. Preservice teachers were surveyed three times to gauge their self-efficacy levels. The second research question was qualitative and was designed to determine which source of self-efficacy preservice teachers perceived to be the most impactful. A self-efficacy source survey was used to collect data on perceptual data from preservice teachers. Research questions three and four were qualitative and were designed to understand what aspects of teacher education preservice teachers perceived to be the most beneficial and most challenging. Preservice teachers were interviewed to gather perceptual data on teacher education programs.

In Chapter Two, a review of the literature relevant to the study was presented. First, Bandura's (1977) theory of self-efficacy was presented as the framework for this

study. The literature review continued with various aspects of self-efficacy in the context of teaching, sources of self-efficacy, and teacher education programs.

The methodology of the study was outlined in Chapter Three. A mixed-method design was used for this study. A mixed-method approach includes data collection from a variety of sources to gain a more comprehensive understanding of the research questions than quantitative or qualitative data alone (Ary et al., 2019; Creswell & Creswell, 2018; Mills & Gay, 2019).

In Chapter Four, an analysis of the data collected was presented. First, quantitative data collected with Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale were described. The results of statistical analysis were presented in tables and discussed. Next, quantitative data from the Sources of Preservice Teacher Self-Efficacy Scale were described. The survey results were presented in tables and narrative form. Qualitative analysis was then presented in narrative form. Preservice teachers were interviewed to answer research questions two, three, and four.

Finally, conclusions were explained in Chapter Five within the context of the literature presented in Chapter Two. Research question one was answered through statistical analysis. Findings included that no significant differences exist in preservice teacher self-efficacy levels. However, it was noted that efficacy levels were high from the beginning, which is a logical starting point for preservice teachers (Frazier et al., 2019). Research question two was investigated through the analysis of survey data alongside interview data. Vicarious experiences were found to be the source of self-efficacy that had the greatest impact on preservice teachers. Verbal persuasion and mastery experiences also had a considerable impact on preservice teacher self-efficacy.

Finally, research questions three and four were answered through the analysis of interview data. Analysis of findings also revealed that preservice teachers perceive a relevance and connection to practice, along with the impact of a professional support system to be the most helpful aspects of teacher education. Preservice teachers perceived major challenges to be lack of relevance or connection to practice and a disconnect in the professional support system.

Implications for practice were presented and connected with the conceptual framework. Implications included two major areas of focus for teacher education program improvement. The first area is improving preservice teachers' professional support systems. Teacher education program administrators can work to strengthen preservice teachers' professional support system by ensuring preservice teachers are placed with effective mentors and that they receive high-quality feedback from the university supervisor (NCTQ, 2017). The second area is strengthening the connection between theory and practice. Coursework should be evaluated and adapted to ensure it closely aligns with clinical experiences, and content presented should be directly applicable in the classroom (AlAjmi et al., 2016; Morris et al., 2017; Sharma & Nuttal, 2016).

Recommendations for future research include replication or extension of the study. Suggestions for replication with a larger sample size were presented. Previous research on preservice teacher self-efficacy development resulted in inconsistent findings (Berg & Smith, 2018; Berkant & Baysal, 2018). Further research on preservice teacher-self-efficacy is needed. A recommendation to replicate the study with a wider variety of teacher education institutions was presented. Finally, it was recommended to extend the

study by measuring the self-efficacy of teacher candidates through their first few years of teaching. Further longitudinal studies are needed to better understand teacher self-efficacy development and stability.

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Appendix A

Teachers' Sense of Efficacy Scale (short form)

Directions: This survey is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below.

Teachers answer each question on a 1-9 scale where 1 is Nothing, 3 is Very Little, 5 is Some, 7 is Quite A Bit, and 9 is A Great Deal.

Teacher Beliefs

1. How much can you do to control disruptive behavior in the classroom?

2. How much can you do to motivate students who show low interest in school work?

3. How much can you do to get students to believe they can do well in school work?

4. How much can you do to help your students value learning?

5. To what extent can you craft good questions for your students?

6. How much can you do to get children to follow classroom rules?

7. How much can you do to calm a student who is disruptive or noisy?

8. How well can you establish a classroom management system with each group of students?

9. How much can you use a variety of assessment strategies?

10. To what extent can you provide an alternative explanation or example when students are confused?

11. How much can you assist families in helping their children do well in school?

12. How well can you implement alternative strategies in your classroom?

Appendix B

Teachers' Sense of Efficacy Scale (short form) Permission

William & Mary
School of Education

MEGAN TSCHANNEN-MORAN, PHD
PROFESSOR OF EDUCATIONAL LEADERSHIP

March 21, 2019

Jenny,

You have my permission to use the Teacher Sense of Efficacy Scale (formerly called the Ohio State Teacher Sense of Efficacy Scale), which I developed with Anita Woolfolk Hoy, in your research. You can find a copy of the measure and scoring directions on my web site at http://wmpeople.wm.edu/site/page/mxtsch . Please use the following as the proper citation:

> Tschannen-Moran, M & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.

I will also attach directions you can follow to access my password protected web site, where you can find the supporting references for this measure as well as other articles I have written on this and related topics.

All the best,

Megan Tschannen-Moran
William & Mary School of Education

P.O. Box 8795 • Williamsburg, VA 23187-8795 • (757) 221-2187 • mxtsch@wm.edu

Appendix C

Sources of Preservice Teacher Self-Efficacy Scale

All items are rated on a 9-point scale ranging from "this does not describe me at all" to "this absolutely describes me."

Mastery Experiences

During my student teaching practicum, my teaching experiences were successful.

During my student teaching practicum, I felt that I was a good teacher.

I am satisfied with my overall teaching performance during my student teaching practicum.

Vicarious Experiences

I learned a lot from observing strong teachers during my student teaching practicum.

During my student teaching practicum, I observed teachers managing challenging situations in the classroom.

During my student teaching practicum, I had meaningful opportunities to observe teachers delivering high quality, effective instruction.

Verbal Persuasion

My mentor told me I will be a good teacher.

Other professionals told me I will be a good teacher.

During my student teaching practicum, I got positive feedback from my mentor.

During my student teaching practicum, I got positive feedback from other professionals.

Emotional and physiological states

I felt nervous a lot during my student teaching practicum.

I mostly felt overwhelmed during my student teaching practicum.

I get excited when I do something to help a student learn.

I feel anxious when I say something wrong to a class.

Appendix D

Interview Questions

1. Think about your experiences throughout your teacher education program. What has been most helpful in preparing you to work in the classroom? What has been most challenging?
2. What aspects of your coursework were most beneficial? What aspects were most challenging? What were courses in particular most or least helpful?
3. Is there an area in which you feel more coursework would be beneficial?
4. What aspects of your student teaching practicum were most beneficial? What aspects were most challenging? What people or experiences, in particular, were most or least helpful?
5. What suggestions do you have for improving the student teaching practicum experience?
6. Think about a time when your teaching was successful. How do you think that contributed to your self-confidence in teaching? What did you learn about yourself as a teacher from that experience?
7. What about a time that you felt your teaching was unsuccessful? How do you think that affected your confidence? What did you learn about yourself as a teacher from that experience?
8. Describe a time you observed a teacher successfully handle a difficult situation in the classroom. What did you learn from that situation?
9. Throughout your student teaching practicum, what type of feedback have you received from others? How do you think it affected your growth as a teacher?

Which individuals provided the most valuable feedback (mentors, administration, university supervisor, etc.)?

10. What is your general attitude as you finish your student teaching practicum? Have you experienced any stressful situations so far? How have you handled the stressful situations?
11. Is there anything else you would like to tell me?

Appendix E

Permission Letter

Date: January 10, 2019

Dear _____,

I am writing to request permission to conduct a research study at _____. I am a doctoral student at Lindenwood University and am completing a dissertation titled, *Examining Preservice Teachers' Self-Efficacy Development throughout Teacher Education*, under the guidance of Dr. Kathy Grover. The purpose of the study is to learn more about the sources and development of preservice teacher self-efficacy beliefs and related implications for teacher education programs.

For the quantitative portion of the study, I would like to send the following three electronic surveys to preservice teachers participating in their student teaching practicum during the fall 2019 semester:

- Teachers' Sense of Efficacy Scale (Two to three weeks before the semester begins.)
- Teachers' Sense of Efficacy Scale (Two to three weeks after the semester begins.)
- Teachers' Sense of Efficacy Scale and Sources of Preservice Teacher Self-Efficacy Scale (Two to three weeks before the semester ends.)

For the qualitative aspect of the study, I hope the school administration will allow me to recruit 1-2 individuals to participate in interviews. Interested students, who volunteer to participate, will be given a consent form to be signed and returned at the beginning of the first interview. If approval is granted, student participants will be interviewed at the beginning and end of their student teaching practicum, either in person at a convenient location or online via video chat. The interviews should take no longer than 30 minutes to complete. No costs will be incurred by either your center or the individual participants.

Your approval to conduct this study will be greatly appreciated. If you have questions, you may contact me at my email address: [redacted] or contact my dissertation chair, Kathy Grover, at [redacted].

Sincerely,

Jenny Hernandez
Doctoral Student
Lindenwood University

Appendix F

Lindenwood University Institutional Review Board Approval Letters

Jul 2, 2019 11:05 AM CDT

RE: IRB-19-253: Initial - Examining Preservice Teachers' Self-efficacy Development Throughout Teacher Education

Dear Jenny Holman,

The study, Examining Preservice Teachers' Self-efficacy Development Throughout Teacher Education, has been approved as Exempt.

> **Category:** Category 2.(ii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording). Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation.

The submission was approved on July 2, 2019.

Here are the findings:

Regulatory Determinations

This study has been determined to be minimal risk because the research is not obtaining data considered sensitive information or performing interventions posing harm greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

IRB Discussion

Please be reminded that according to LU IRB Policy, researchers must obtain approval from each site according to the policy of that site prior to conducting research with any subjects associated with the site. In this case, the PI has confirmed that remaining site approvals will be added to the application through modification forms when they are received. In this case, [redacted] is requiring the investigator to complete an approval at their institution. [redacted] is requiring confirmation of IRB approval prior to authorizing access to any subjects at their institution.

Sincerely,

Lindenwood University (Lindenwood) Institutional Review Board

Oct 14, 2019 5:03 PM CDT

RE:
IRB-19-253: Modification - Examining Preservice Teachers' Self-efficacy Development Throughout Teacher Education

Dear Jenny Holman,

The study, Examining Preservice Teachers' Self-efficacy Development Throughout Teacher Education, has been approved as Approved.

Category: Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

The submission was approved on October 14, 2019.

Here are the findings: **Regulatory Determinations**

- This modification entails additional documentation regarding research performances sites. This modification does not alter the previously approved risk determination.

Sincerely,

Lindenwood University (Lindenwood) Institutional Review Board

Appendix G

Letter of Introduction and Recruitment

Date: August 1, 2019

Dear Preservice Teachers,

My name is Jenny Hernandez, and I am a doctoral student at Lindenwood University. I am conducting a study for a dissertation titled, *Preservice Teacher Self-Efficacy Development and Sources*. The purpose of the study is to learn more about the sources and development of preservice teacher self-efficacy beliefs and related implications for teacher education programs.

As a participant in this study, you will be asked to complete a brief online survey and *will have the opportunity to volunteer to be interviewed*. The current survey is the first of three that will be sent throughout the semester. The amount of time required to complete each survey is approximately 10 minutes.

If you are willing to participate in the survey portion of the study, please click the link provided below. A letter of informed consent is presented prior to beginning the survey. Your consent for the survey will be considered signed and accepted if you complete the survey. The web address will be open for two weeks for you to respond.

If you are interested in being interviewed about your experiences and perceptions of teacher education, please email me at [redacted]. *Two online video chat interviews will take approximately 30 minutes each and will be scheduled at your convenience near the beginning and end of the semester. If you are selected for an interview, a letter of consent will be provided in advance.*

If you have any questions about the survey or the study, please feel free to contact me. Thank you in advance for your time and participation!

https://lindenwood.az1.qualtrics.com/jfe/form/SV_0vnF6DjA5VLhlFb

Sincerely,

Jenny Hernandez
Doctoral Student
Lindenwood University

Appendix H

Survey Informed Consent (Round 1)

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Jenny Hernandez under the supervision of Dr. Kathy Grover at Lindenwood University. We are doing this study to learn about the sources and development of preservice teacher self-efficacy beliefs and related implications for teacher education programs. It will take about 10 minutes to complete this survey.
Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window. There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:
Jenny Hernandez [redacted]
Dr. Kathy Grover [redacted]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at [redacted] or [redacted].

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Appendix I

Follow Up to First Letter of Recruitment

Date: September 12, 2019

Dear Preservice Teachers,

Hello! As you know, I am a doctoral student at Lindenwood University, conducting a study to learn more about preservice teacher self-efficacy beliefs.

If you have not yet completed the first brief online survey, you are invited to click the link below to participate. It should take less than 10 minutes. I would greatly appreciate your input!

https://lindenwood.az1.qualtrics.com/jfe/form/SV_0vnF6DjA5VLhlFb

I am also still looking for several preservice teachers to interview via video chat. If you are interested in sharing your experiences, please email me at [redacted].

If you have any questions about the survey or the study, please feel free to contact me. Thank you in advance for your time and participation!

Sincerely,

Jenny Hernandez
Doctoral Student
Lindenwood University

Appendix J

Letter of Introduction and Recruitment (Round 2)

Date: September 30, 2019

Dear Preservice Teachers,

Hello again! I hope this email finds you well as you begin your student teaching practicum. As you may remember, I am sending three surveys throughout the semester for my study on preservice teacher self-efficacy. Below you will find the link to the second survey. It should take about 10 minutes to complete.

A letter of informed consent is presented prior to beginning the survey. Your consent for the survey will be considered signed and accepted if you complete the survey. The web address will be open for two weeks for you to respond.

I am still looking for at least one interview participant from your school. If you're interested in a brief interview about your experiences, please email me.

If you have any questions about the survey or the study, please feel free to contact me. Thank you in advance for your time and participation. Best wishes as you dive into your student teaching!

https://lindenwood.az1.qualtrics.com/jfe/form/SV_cZPvmpuDzHR8E17

Sincerely,

Jenny Hernandez
Doctoral Student
Lindenwood University

Appendix K

Survey Informed Consent (Round 2)

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Jenny Hernandez under the supervision of Dr. Kathy Grover at Lindenwood University. We are doing this study to learn about the sources and development of preservice teacher self-efficacy beliefs and related implications for teacher education programs. It will take about 10 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window. There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Jenny Hernandez [redacted]

Dr. Kathy Grover [redacted]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at [redacted] or [redacted].

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Appendix L

Letter of Introduction and Recruitment (Round 3)

Date: November 11, 2019

Dear Preservice Teachers,

Hello! Can you believe the semester is almost over? I am sure you have learned a lot throughout your student teaching experience! As you may remember, I am sending three rounds of surveys throughout the semester for my study on preservice teacher self-efficacy. *For this final round, there are **two** short surveys, each linked below.* Each one should take about 10 minutes to complete.

A letter of informed consent is presented prior to beginning the survey. Your consent for the survey will be considered signed and accepted if you complete the survey. The web address will be open for two weeks for you to respond.

If you have any questions about the survey or the study, please feel free to contact me. Thank you for your time and participation throughout the semester. I greatly appreciate your help! Good luck and congratulations as you near graduation!

Sources of Self-Efficacy: https://lindenwood.az1.qualtrics.com/jfe/form/SV_5jZl1IXgnEKInKl

Teacher Efficacy Scale: https://lindenwood.az1.qualtrics.com/jfe/form/SV_cuxUufXUlwGHlNr

Sincerely,
Jenny Hernandez
Doctoral Student
Lindenwood University

Appendix M

Survey Informed Consent (Round 3-Teachers' Sense of Efficacy Scale)

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Jenny Hernandez under the supervision of Dr. Kathy Grover at Lindenwood University. We are doing this study to learn about the sources and development of preservice teacher self-efficacy beliefs and related implications for teacher education programs. It will take about 10 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window. There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Jenny Hernandez [redacted]
Dr. Kathy Grover [redacted]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at [redacted] or [redacted].

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Appendix N

Survey Informed Consent (Round 3- Sources of Preservice Teacher Self-Efficacy Scale)

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Jenny Hernandez under the supervision of Dr. Kathy Grover at Lindenwood University. We are doing this study to learn about the sources and development of preservice teacher self-efficacy beliefs and related implications for teacher education programs. It will take about 10 minutes to complete this survey.
Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window. There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:
Jenny Hernandez [redacted]
Dr. Kathy Grover [redacted]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at [redacted] or [redacted].

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Appendix O

Interview Informed Consent

LINDENWOOD

Research Information Sheet

You are being asked to participate in a research study. We are doing this study to learn about the sources and development of preservice teacher self-efficacy beliefs and related implications for teacher education programs. During this study, you will participate in two interviews. It will take about 20-30 minutes per interview to complete this study.

Your participation is voluntary. You may choose not to participate or withdraw at any time.

There are no risks from participating in this project. There are no direct benefits for you participating in this study.

> We are collecting data that could identify you, such as name, contact information, and audio and video recording. Every effort will be made to keep your information secure and confidential. Only members of the research team will be able to see your data.

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.

Who can I contact with questions?

If you have concerns or complaints about this project, please use the following contact information:

Jenny Hernandez [redacted]
Dr. Kathy Grover [redacted].

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at [redacted] or [redacted].

Vita

Jenny Hernandez attended Truman State University in Kirksville, Missouri, where she earned a Bachelor of Arts in Psychology in 2009. Jenny obtained her Master of Arts in Education from Truman State University in 2010. In 2017, she became a National Board Certified Teacher. Prior to her current role, Jenny served as a second and third-grade teacher at Hollister Elementary School in the Hollister School District for nine years. She is currently a fifth-grade teacher at Hollister Elementary School.