

ASSESSING PRE-SERVICE TEACHER BELIEFS:
DEVELOPMENT OF THE EFFECTIVE
TEACHER EFFICACY SURVEY

by

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I am not a teacher, but an awakener.

- Robert Frost

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ABSTRACT

Education is a dynamic process that requires effective teachers who design instruction that personalizes learning for each student. The complexities of effective teaching are described in Danielson's *Framework for Teaching* (FFT) (2007). The description of the responsibilities of teachers to impact student achievement can often be found in performance expectations of P-12 teachers (Danielson, 2007). Teacher education programs must develop teachers who are ready and able to take on the responsibilities expected in twenty-first-century classrooms to make an impact on student success. The focus of this research is on the validity and reliability of an instrument created to measure effective teacher efficacy of pre-service teachers. The research first examines the alignment of the FFT and InTASC (Interstate Teacher Assessment and Consortium) standards to better understand effective teaching in P-12 schools and pre-service teacher development. An instrument aligned to the FFT was created to measure the effective teacher efficacy of pre-service teachers. The focus of the research was to test the validity and reliability of the survey. The understandability and expert review analysis was conducted in the research. The survey was administered to 216 pre-service teachers. Principal component analysis was conducted on the data, and the factor model's internal consistency and reliability was strong. Seven components emerged in the factor structure. The coefficient alpha for all seven factors was high (*Classroom Environment, Professional Responsibilities, Student-Centered Assessments, Critical Thinking, Unanticipated Changes in Plans, Student-Centered Planning, and Connections in Planning*). The factors of *Classroom Environment* and *Professional Responsibilities* aligned to the FFT. The other five factors that emerged focused on various elements of planning, preparation, and instruction. This research recommends using the instrument that was developed to inform pre-service teacher development as a reflective tool for pre-service teachers and as a way to improve teaching and learning in teacher education programs.

CHAPTER ONE

INTRODUCTION

Education reform has been a priority since the mid-1960s with the introduction of the Elementary and Secondary Education Act (ESEA, 2014). As effective teaching became a larger focus of education reform as the years went on, the definition of a highly effective teacher became more complex. According to Strong (2011), the definition of an effective teacher stretches among four categories: competence, personal qualities, pedagogical standards exhibited, and teacher's ability to increase student achievement. The categories of competence (exam scores, certification requirements), pedagogical standards exhibited (use of effective management and instructional strategies as measured through performance assessments and evaluations), and ability to increase student achievement scores (as shown through teacher work samples and portfolios) can all be measured objectively and are often a part of the certification standards of states. However, the personal qualities of a teacher (i.e., belief in ability to affect student achievement and growth) are more subjective, which makes measuring this category less of a priority in teacher development.

Teachers struggle in the first few years of their career and are known to be the least effective teachers during that time. Hoy (2000) suggests that novice teacher efficacy beliefs are related to the preparation received through their TEP (teacher education programs). Therefore, it is important to understand the teacher-efficacy levels of pre-service teachers in their field experiences to better prepare them for the complexities of teaching as a novice teacher (Alger & Kopcha, 2009).

The information in this chapter presents the ways in which teacher education programs develop and evaluate pre-service teachers' competencies, the standard to which they exhibit pedagogical expectations, and impact on student growth. Although it is easier to use certification requirements, performance assessments, and teacher work samples to measure the effectiveness of a teacher, research is also presented that describes the importance and necessity of measuring personal qualities of teachers.

Background

The Elementary and Secondary Education Act (ESEA) of 1965 marked the beginning of federal funding of K-12 education in order to provide “equal access to education and establish high standards and accountability” (OSPI, n.d.). The reauthorization of ESEA in 2001, known as No Child Left Behind (NCLB), brought about many changes to education such as increased measures of accountability and a continued equal access to a high-standards education in the twenty-first century. The result of rising accountability was adequate yearly progress (AYP), which used student performance on high-stakes standardized tests to determine effectiveness of schools and school districts, eventually requiring schools and school districts to meet with 100% student proficiency in 2014.

In wake of the pressures of NCLB on schools and school districts, the U.S. Department of Education proposed a reauthorization to the ESEA in 2010 in hopes of amending the 100% proficiency component of NCLB. The proposition included increased rigor in instruction and standards to better prepare K-12 students to be college-

and career-ready. Although the reauthorization still emphasized student achievement, more attention was given to instruction and preparing students with “real-world” skills and knowledge instead of performance on constructed-response tests. President Obama stated, “If we want America to lead in the 21st century, nothing is more important than giving everyone the best education possible—from the day they start preschool to the day they start their career” (The White House, 2013). Therefore, in order to improve student achievement from preschool to higher education, the reauthorization provided a blueprint of increased teacher and school accountability to prepare college- and career-ready students through effective teaching (U.S. Department of Education, 2010).

A Blueprint for Reform: The Reauthorization of the Elementary and Secondary Education Act (2010) describes the U.S. Department of Education’s proposed changes to the education system. The plans for reauthorization include five priorities for P-16 (preschool through college) education: (a) college- and career-ready students, (b) great teachers and leaders in every school, (c) equity and opportunity for all students, (d) raise the bar and reward excellence, and (e) promote innovation and continuous improvement. It is the second priority that has caused a wave of reform among teacher education programs and K-12 districts. The three subcomponents within this priority provide greater accountability to higher education to develop effective teachers, and for K-12 districts to continue that development and retain effective teachers. The pending blueprint proposes that each state create a statewide definition of an “effective teacher” rooted in student achievement and performance in the classroom to inform teacher evaluation and standards. It also suggests a data system that will “link information on

teacher...preparation programs to the job placement, student growth, and retention outcomes of their graduates” (U.S. Department of Education, 2010, p. 15).

Teacher education programs’ accountability focuses on the foundational development of highly effective teachers (Vandal & Thompson, 2009). TEPs are expected to produce classroom-ready teachers who can increase student achievement and meet, if not exceed, standards in evaluation systems at the K-12 school level. Levine (2006) suggests that this is a challenging task for TEPs as the role of the teacher has drastically shifted in the past decade. Teachers must now support *every* student and increase *every* student’s achievement level, which adds to the complexity of teaching. *Transformations in Educator Preparation: Effectiveness and Accountability* (AACTE, 2011) states “all...teachers must be prepared to implement high-impact instruction designed to realize attainment of demanding objectives for all learners” (p. 3). Teaching “is complex work that looks deceptively simple” (Grossman, Hammerness, & McDonald, 2009, p. 273) and it requires knowledge of the content and understanding of effective pedagogy. Teaching pre-service teachers to understand and effectively perform that complexity is a challenge unto itself.

The complexity of effective teaching is described through the *Framework for Teaching* (2013) and *InTASC Model Core Teaching Standards and Learning Progressions for Teachers* (2013). The domains and standards of each framework provide the “big picture vision” of effective teacher development, define levels of performance, and support professional growth. Both identify areas of effective teaching: planning (individual learner’s needs, appropriate pedagogy for instruction), learning

environment (supportive, positive, focused on learning), instruction (assessments and strategies), content (understanding of central concepts and content knowledge), and professional practice (ethical practice, teacher-leader, professional development) (Danielson, 2013; InTASC, 2013). Each framework is a continuum that describes different performance levels that make it possible for teachers of varying experiences (pre-service teacher to the veteran teacher) to focus on improving their effective-teaching practice.

The National Council for Accreditation of Teachers (NCATE) (n.d.) suggests the expected level of performance of a novice teacher in the first year of teaching is the responsibility of the TEP in which the individual received his or her certification. TEPs are expected to produce highly effective teachers who demonstrate effective-teaching skills in *Planning and Preparation*, *Classroom Environment*, *Instruction*, and *Professional Responsibility* (Danielson, 2007). Unfortunately, new teachers continue to struggle as they are faced with the “steep learning curve characteristic of these early years” (New Teacher Project, 2013, p. iii). As a result, many K-12 schools and school districts have support systems in place to assist the struggling first-year teachers to adjust and adapt to the demands of the classroom (Darling-Hammond, 2012; Desimone, Bartlett, Gitomer, Mohsin, Pottinger, & Wallace, 2013).

As new teachers continue to struggle in their first years after graduating from a TEP, a closer look is needed at standards and expectations of TEPs and the development of effective teachers. Researchers suggest standards and rigorous programs of study in TEPs are lacking across the nation (Bleicher, 2007; Guarino, Santibanez, & Daley, 2006;

Hill, 2003; Mehta & Doctor, 2013). Guarino et al. (2006) state, “Those who entered teaching had significantly lower scores than the non-teachers” who enter other fields (p. 181). In 2005, the Illinois Education Research Council reported the quality of teacher performance on these scores: ACT composite scores, ACT English Scores, Basic Skills Test, provisional certification, undergraduate ranking, and teaching experience, makes a difference in teacher-candidate and first-year-teacher performance. Hill (2003) suggests pre-service teachers’ understanding of content “is often insufficient to provide the confidence required to teach...effectively and in a manner that achieves positive and conceptual learning outcomes in their students” (Bleicher, 2007, p. 841).

The Reform Support Network (2013) suggests that increased rigor of standards of instruction must result in an increased demand of effective instruction. First-year teachers, as a result of their TEPs, must already know and be able to put into action the knowledge and skills necessary to teach effectively and meet the expectations of their district (Reform Support Network, 2013). The *Teacher Preparation’s Effects on K-12 Learning* (2012) report states that content knowledge acquisition is “not the only significant outcome of effective teacher education...education has important civic functions that extend beyond knowledge to include personal conduct” (pp. 1-2). Effective teachers “must possess pedagogical knowledge linked with content knowledge, as well as personal qualities and attitudes, to be effective in the classroom” (Hill, 2003, p. 256). A program of study should provide the necessary experiences and opportunities necessary for pre-service teachers to gain the confidence in their abilities to contribute to the “level

of motivation and performance accomplishments” necessary for effective instruction (Bleicher, 2007, p. 842).

Previous mandatory assessments for initial licensure consisted of multiple-choice tests that measured a pre-service teacher’s basic skills, which does not reflect a teacher’s effectiveness in the classroom (Butrymowicz, 2012; Hill, 2003). Therefore, state licensure and TEPs are now using the Teacher Performance Assessment (TPA) because “it measures [pre-service teachers’] work more accurately than other regulations” (Darling-Hammond, 2012). Pre-service teachers complete this capstone assessment in the student-teaching semester to demonstrate their knowledge and teaching skills in the classroom through planning, instruction, assessment, and reflection (CSU Center for Teacher Quality, n.d.; Hill, 2003; AACTE, 2011). It is a way to assess a pre-service teacher’s performance in the classroom with students instead of assessing using a multiple-choice exam (The New Teacher Project, 2013).

The TPA provides evidence that pre-service teachers have an *understanding* and are able to *demonstrate* their ability to negotiate the complexities of effective teaching. Pre-service teachers are guided by their cooperating teachers, field supervisors, and university instructors to move from their “current state of understanding to a state that is progressively closer to experts’ understanding” throughout their development in the TPA (Bleicher, 2007, p. 843). These performance assessments may provide evidence that pre-service teachers understand and know how to use planning, instruction, assessment, and reflection in the classroom; however, it is important to note that TPAs are often evaluated by individuals who have not been thoroughly trained as a means to standardize the

evaluation, which affects the inter-rater reliability (Strong, 2011). In addition, TPAs only show one level of a teacher's skill and knowledge (Swanson, 2013).

One component of teacher development that is left out of TPAs is the beliefs pre-service teachers have about their own effectiveness as teachers. When examining effective teaching, it is important to identify what makes a teacher effective in the classroom. Oakes et al. (2013) suggest that an effective teacher is one who “[creates] positive, safe, and orderly learning environments and [offers] instructional experiences to enable all students to meet rigorous education standards, despite students coming to school with a range of learning and behavioral skill sets” (pp. 95-96). Those teachers who set higher goals than others, are less afraid of failure, and persist longer than others when things get difficult are more likely to be effective in the classroom (Swanson, 2013). Those teachers who do not persist and give up easily will have a more difficult time developing into an effective teacher (Swanson, 2013).

Oakes et al. (2013) state, “Teachers’ judgments about their ability to plan and execute actions necessary to achieve a desired outcome...influence their goals, effort, and persistence with teaching tasks, which in turn influences their teaching performance” (p. 99). These judgments and beliefs are referred to as teacher efficacy. The term “teacher efficacy” is closely related to self-efficacy and is defined as “one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Low levels of efficacy in a teacher can contribute to teacher burnout, which often leads to shorter teaching careers. The stress teachers feel due to “prolonged feelings of ineffectiveness” is the result of low levels of teacher efficacy,

which leaves a teacher feeling emotionally exhausted, depersonalized, and with a reduced sense of personal accomplishment (Oakes, 2013, p. 99).

Nurturing and developing a teacher's self-efficacy affects a teacher's career-long drive towards teaching excellence and effectiveness. Pre-service teachers expect to learn how to be effective teachers. Temiz and Topcu (2013) suggest pre-service teachers are "expected to improve all of their knowledge and skills to instruct effectively while completing the compulsory courses in their education programs" (p. 1436). They continue to state that teacher self-efficacy is "consistently related to teachers' commitment, enthusiasm, and instructional behavior" (Temiz & Topcu, 2013, p. 1436). Therefore, TEPs must better understand the efficacy levels of their pre-service teachers throughout their development as effective teachers in their programs. If a "teacher's sense of efficacy will determine the amount of effort he or she puts into teaching, the degree of persistence when confronted with difficulties, and the task choices made" (as cited in Temiz & Topcu, 2013, p. 1438), then it is important that TEPs determine how much a pre-service teacher believes in their knowledge and skills as effective teachers. Identifying levels of teacher efficacy in areas of effective teaching at early stages in the development of a teacher is important to determining impacts of TEPs. Ultimately, it is the TEP's goal to develop effective teachers who have a positive impact on the learning environment and create engaging instructional experiences that challenge students and support their academic and social achievement (Oakes et al., 2013). It is an important piece of data for education that is needed to better understand the long-term impact the

pre-service teacher will have on student achievement (Armor et al., 1976; Gibson & Dembo, 1984; Tschannen-Moran, Hoy, & Hoy, 1998; Wagner, 2008).

Research suggests that one of the reasons for ineffective teaching is low levels of teacher efficacy (Aiken & Day, 1999; Darling-Hammond, 2010; Hoy, 2000; Wagler, 2007). Researchers of effective teaching identify self-efficacy, or teacher efficacy, as the biggest factor of a teacher's impact in the classroom (Tschannen-Moran & Hoy, 2001; de la Torre Cruz & Arias, 2007). Teacher efficacy is defined as a teacher's belief in his or her ability to affect engagement and performance of *all* students (Tschannen-Moran & Hoy, 2001; de la Torre Cruz & Arias, 2007). According to Bandura (as cited in Bleicher, 2007), teachers must have confidence in their teaching abilities and effectiveness that their actions will produce desirable outcomes. Tschannen-Moran and Hoy (2001) suggest:

Teachers' sense of efficacy has been related to student outcomes, such as achievement, motivation, and students' own sense of efficacy. In addition, teachers' efficacy beliefs also relate to their behavior in the classroom. Efficacy affects the effort they invest in teaching, the goals they set, and their level of aspiration. Teachers with a strong sense of efficacy tend to exhibit greater levels of planning and organization. They are also open to new ideas and are more willing to experiment with new methods to better meet the needs of their students. (p. 783)

Therefore, understanding the level of self-efficacy in effective-teaching knowledge and skills of pre-service teachers "is crucial to ensuring that new teachers will succeed in their practice" (Bleicher, 2007, p. 858).

Statement of the Problem

Higher standards for teachers create increased pressure on TEPs to prepare teachers who are able to successfully meet the demands of a twenty-first-century classroom. As the national education system moves from a K-12 to a P-16 college- and career-ready system, a closer look is needed at the alignment of effective teacher expectations of teacher preparation and K-12 schools. These expectations should influence how universities prepare pre-service teachers to be effective, career-long teachers.

The K-12 education system relies on TEPs to develop and train teachers ready for the classroom. Research indicates that for pre-service teachers to transition successfully to the K-12 system, they must believe in their ability to impact the lives of their students. This belief includes that they can demonstrate effective-teaching knowledge and skill, understand how that knowledge and skill work together, and recognize the impact effective teaching can have on student achievement. Other than performance assessments focused on planning, instruction, assessment, and reflection, as well as multiple-choice exams for licensure purposes, little is known about pre-service teachers' beliefs of their ability to be effective teachers.

Statement of Purpose

This research will examine the Framework for Teaching's (FFT) four domains and InTASC Model Core Teaching Standards and Learning Progressions for Teachers to develop a survey to measure the effective teacher efficacy of pre-service teachers in their

field experiences. The instrument will inform TEPs of the levels of effective teacher efficacy of pre-service teachers throughout their programs of study.

The researcher developed the term “effective teacher efficacy” to emphasize the importance of not just having teacher efficacy but having teacher efficacy aligned to the qualities and characteristics of effective teaching. The literature supports that social learning theory provides the groundwork for self-efficacy (Bandura, 1997). Building on that is research of teacher efficacy, which is similar to self-efficacy but is dependent on the context of teaching. As there are greater expectations of effective teaching, the *Framework for Teaching* (Danielson, 2009) and InTASC standards define in detail the knowledge and skill that teachers must demonstrate, understand, and recognize to be effective in the classroom. Therefore, the researcher developed the term “effective teacher efficacy” to reflect the importance that it is not only a teacher’s belief in their ability to teach but the teacher’s belief in their ability to demonstrate effective teaching knowledge and skill, understand how that knowledge and skill work, and recognize the impact effective teaching can have on student achievement.

Rationale for the Study

An instrument to measure pre-service teacher effective teacher efficacy aligned to the FFT and InTASC could provide insight for TEPs on how to improve and continue to meet the demands and expectations of producing teachers who are highly effective in the classroom. The FFT and InTASC provide the foundation for the items in the instrument. This tool will go through validity and reliability analyses in order to consider it a reliable

instrument. The instrument will give insight into the effective teacher efficacy levels of pre-service teacher development throughout their programs of study. This instrument can also be used to bring awareness of strengths and weaknesses to TEPs. It can be used to provide a better understanding of what and how courses, field experiences, and other TEPs support systems impact pre-service teachers' development of effective teacher efficacy.

Research Questions

This study will examine FFT and InTASC as they relate to pre-service teacher development in TEPs. The study will develop a valid instrument to measure effective teacher efficacy of pre-service teachers based on the domains within FFT and InTASC.

This study will address the following research questions:

1. What components of FFT and InTASC standards do pre-service teachers believe they are able to do effectively?
2. What components of FFT domains align with InTASC standards and TEPs' development of effective teachers?
3. Do the survey items accurately measure pre-service teachers' effective teacher efficacy in teaching skills and knowledge as identified in the FFT and InTASC standards?

Significance of the Study

“One must reconsider teacher education preparation programs to ensure that effective teachers are enrolled into the teaching profession” (Lee, 2007, p. 545). The National Council on Teacher Quality (NCTQ) released a report in 2013, *Teacher Prep Review*, stating 90% of the 1,130 TEPs in the study are producing teachers who are unable to meet the demands of the classroom in their first year. The findings from this review identify the knowledge and skills of first year teachers as inadequate to what is expected at the K-12 level. NCTQ (2013) identified three major reasons why TEPs are failing: (a) TEPs have few restrictions, if any, on student admission, (b) content instruction at the TEP level is not to the rigor of what is needed to teach to the Common Core Standards, and (c) the appropriate reading instructional strategies necessary to increase the number of proficient readers are not taught in TEPs. Levine (2006) reiterates that lower admission standards and lower quality faculty achievement contribute to the development of teachers who are unprepared for the demands of the classroom. Another criticism of TEPs is the lack of rigorous standards and steadfast accountability at the state level to develop and maintain high-performing programs that produce effective teachers (Carey, 2007).

The Report of the Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning (2010) calls for changes in TEPs to include: (a) more rigorous accountability, (b) strengthening candidate selection and placement, (c) revamping curricula, incentives, and staffing, (d) supporting partnerships, (e) and expanding the knowledge base to identify what works and support continuous

improvement. The Illinois Education Research Council (2005) also suggests an increase to rigor, especially in content knowledge, of TEPs. The research suggests these changes must be made in order to develop highly effective teachers who will improve student achievement in K-12 schools, thus meeting the demands of the twenty-first-century classroom (Presley, White, & Gong, 2005).

Highly effective teachers must have high levels of efficacy, and increased efficacy in teachers increases effective teaching in the classroom (Wagner, 2007). “A person with the same knowledge and skills may perform poorly, adequately, or extraordinarily depending on fluctuations in self-efficacy thinking” (Bandura, 1993, p. 119). A teacher’s self-belief in their efficacy is essential to their response and actions to various tasks and scenarios, therefore making them effective or ineffective in a classroom (Bandura, 1993).

Self-efficacy plays an important role in the development of effective teachers because it affects how a teacher responds to different situations (Tschannen et al., 1998). Although individuals may underestimate or overestimate their abilities, “these estimations may have consequences for the courses of action they choose to pursue or the effort they exert in those pursuits. Over- or underestimating capabilities may also influence how well people use the skills they possess” (Tschannen-Moran & Hoy, 1998, p. 211). The skills and knowledge desired for effective teaching are capabilities that Bandura suggests are “only as good as [their] execution. The self-assurance with which people approach and manage difficult tasks determines whether they make good or poor use of their capabilities” (as cited in Tschannen-Moran & Hoy, 1998, p. 211). Therefore, developing an instrument that is reliable and valid to measure effective teacher efficacy

of pre-service teachers will provide support to TEPs and their development of effective teachers.

TEPs will have a greater understanding of effective teacher efficacy of pre-service teachers through the process and results of the survey developed in this research. It may provide insight into how programs can improve coursework and field experiences to support the development of pre-service teachers with high levels of effective teacher efficacy. This instrument may be used for program improvement to better understand the strengths and weaknesses of coursework and field experiences as it relates to the program of study in TEPs.

Definition of Terms

1. Effective Teacher Efficacy: A teacher's belief in his or her ability to affect engagement and performance of all students aligned to the *Framework for Teaching* (de la Torre Cruz & Arias, 2007; Tschannen-Moran & Hoy, 2001).
2. In-service Teacher: Any certified teacher employed in a K-12 school system.
3. Learner: "Implies an active role in learning whereas 'student' could be seen as more passive. 'Learner' also connotes a more informal and accessible role than that of 'student'" (InTASC, 2013, p. 6).
4. Learning Environment: "'Classroom' was replaced with 'learning environment' wherever possible to suggest that learning can occur in any number of contexts and outside of traditional brick and mortar buildings that classroom and school imply" (InTASC, 2013, p. 6).

5. Locus of Control: “Generalized expectancy concerning whether responses influence the attainment of outcomes such as successes and rewards” (Schunk, 2012, p. 367).
6. Mental Processing Steps: “(1) Comprehension of the survey question in the manner intended by the designer, (2) Recall or retrieval from memory of information necessary to answer the question correctly, (3) Decision and estimation processes that are influenced by factors such as item sensitivity, social desirability, or the respondent’s assessment of the likelihood that the retrieved information is correct, and (4) The response process, in which the respondent produces an answer to the question in the form desired by the data collector” (Cognitive Aspects of Survey Methodology, 2008).
7. Outcome Expectations: Personal beliefs about the anticipated/desired outcomes of actions (Schunk, 2012).
8. P-16 Education: Preschool through undergraduate education.
9. Perception: “Subjective process of acquiring, interpreting, and organizing sensory information. Survey of perceptions aims to identify the processes that underlie how individuals acquire, interpret, organize, and generally make sense of the environment in which they live, and help measure the extent to which such perceptions affect individual behaviors and attitudes as a function of an individual’s past experiences, biological makeup, expectations, goals, and/or culture” (Perception Question, 2008).
10. Pre-service Teacher: A student enrolled in a teacher education program.
11. Self-efficacy: “Refers to the beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997).

12. Survey: “Interdisciplinary science of involving the intersection of cognitive psychology and survey methods...to determine how mental information processing by respondents influences the survey response process and, ultimately, the quality of data obtained through self-report” (Cognitive Aspects of Survey Methodology, 2008).
13. Teacher Candidate: A pre-service teacher enrolled in student teaching.

Assumptions

The assumption is made that all pre-service teachers were placed in a high-quality field experience where the cooperating teacher and field supervisor provided the necessary support to grow and develop as effective teachers. Another assumption is that the TEP provided the same quality instruction and field experiences for pre-service teachers in the program of study. In addition, all instructors, cooperating teachers, and field supervisors have an understanding of the knowledge and skill needed to be and to train effective teachers.

Delimitations and Limitations

The delimitation set in this study was to develop an instrument to examine the population of pre-service teachers’ effective teacher efficacy. Pre-service teachers who participated in a field experience were selected because the research supports the importance of field experience and pre-service teacher development (Darling-Hammond, 2006). The research suggests that the content and pedagogy taught throughout a TEP does not begin to make sense to the pre-service teacher until he or she is able to apply and

integrate the different complexities of effective teaching in field experience (Chamberlin & Chamberlin, 2010; Darling-Hammond, 2006; Darling-Hammond, 2012; Hallman, 2012; Lee, 2007). “Some of the most powerful influences on the development of teacher efficacy are mastery experiences” in practicum and student teaching experiences (Hoy, 2000, p. 2).

The limitations of this study consist of the variability of pre-service teachers’ self-reports of their knowledge and skills of effective teaching. The instrument developed is meant to provide triangulation to a TEP’s data on pre-service teachers’ performance and development (e.g., Teacher Work Sample, formal observations). Outcomes on the survey depend on a number of extraneous variables to include quality of placement, quality of the cooperating teacher, quality of field supervisor, and quality of the program of study. Further validity and reliability testing will determine the fit of the instrument to measure the effective teacher efficacy of pre-service teachers in this and other populations, which will provide triangulation to the data collected for accreditation in TEPs. The study makes the assumption that all participants received the same training from their Montana Board of Education-approved TEP, only differing in content instruction (e.g., English content for 5-12, K-8 science methods, etc.).

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

Bryk and Raudenbush (1988) report that the “central phenomenon of interest [in educational research]...is the growth in knowledge and skill of individual students” (p. 65). Researchers have long searched to better understand students and “how personal characteristics of students, such as their ability and motivation, and aspects of their individual educational experiences, such as the amount of instruction, influence their academic growth” (Bryk & Raudenbush, 1988, p. 65). This study examines the phenomena of effective teacher efficacy of pre-service teachers and describes the development of an instrument designed to measure pre-service teacher effective teacher efficacy. Charlotte Danielson’s *Framework for Teaching* and CCSSO’s *InTASC: Model Core Teaching Standards and Learning Progressions* informed the framework used to measure the construct of effective teacher efficacy.

The research in the literature review is divided into two parts. The first section is focused on the theory behind effective teacher efficacy. The review traces the expectations of effective teaching for in-service teachers to TEPs’ development of pre-service teachers. Student achievement, expectations of classroom teacher effectiveness, and pre-service teacher development illustrate the expectations and demands in TEPs and K-12 school districts. The review describes how teachers with higher effective teacher efficacy demonstrate highly effective teaching practices in the classroom.

The second part of the literature review addresses the theory of survey development. Research is presented on instrument and item development, including validity and reliability. The process of conducting survey research is discussed in this section.

Part I

School Effects and Student Achievement

There has been debate over the years about what the greatest impact is on student achievement (Guarino, Santibanez, & Daley, 2006). The research suggests impacts such as student background, school environment, and previous achievement. Coleman et al. (1966) were the first to study school effects on student achievement. The study reported that the most significant factors in student achievement were an individual's background and social context. This report sparked further inquiries of what school effects influenced student achievement (Konstantopoulos, 2006). Jenck et al. (as cited in Konstantopoulos, 2006) agree that family background and class size are indicators of student achievement. Mostellar (1995) suggests that a smaller class size is better because it "reduces the distractions in the room and gives the teacher more time to devote to each child" (p. 125). In contrast, Wright, Horn, and Sanders (1997) found class size and class demographics to have a minimal effect on student achievement. They also suggest previous achievement level is a factor in student achievement; however, they also found that "teacher effect is highly significant in every analysis...[higher] than any other factor" in their research (p. 63). Harris and Sass (2011) suggest a shortcoming in this early research on teacher

effectiveness is that the most effective teachers taught the highest-achieving students in these studies.

Teacher effectiveness, according to the *Strategic Data Project* (2011), is defined as “an individual teacher’s impact on the amount his or her students learn from one year to the next, as measured by their performance on a standardized test of student achievement” (p. 4). It was found that teachers “improve their effectiveness most in their first two years of teaching in both math and ELA” (Strategic Data Project, 2011). *The Cumulative and Residual Effects of Teachers on Future Student Academic Achievement* (1996) report suggests student achievement is the effect of the “development and implementation of strategies, which...lead to improved teacher effectiveness” and includes teacher training programs (p. 6).

According to Jordan, Mendro, and Weerasinghe (1997), student achievement can determine teacher effectiveness, and is a way for schools to develop training and further professional development in areas of need in instruction. Sanders and Horn (1998) state, “It is only when educational practitioners—teachers as well as school and school system administrators—have a clear understanding of how they affect their students in the classroom that they can make informed decisions about what to change and what to maintain” (p. 255).

Teaching Twenty-First-Century Learners

The twenty-first-century learner is someone who can think critically, problem-solve, understand information literacy, has a global awareness, and has mastered the knowledge necessary for a given field (Rotherham & Willingham, 2009). These traits are

desired in both employees and students; however, employers and colleges are finding significant gaps in their expectations and an individual's capabilities and proficiencies (Rotherham & Willingham, 2009). As a result of the gaps and shortcomings higher education and employers see in individuals, the focus for high-quality employees and proficient college students has turned to the U.S. K-12 education system and its ineptness to develop twenty-first-century learners (The Hunt Institute, 2012). The state-led Common Core State Standards Initiative is an effort toward developing clear-set outcomes for K-12 students nationwide that support student development (National Governors Association & CCSO, 2010). The Common Core State Standards are based on the necessity to prepare individuals for the demands of the twenty-first century and develop the skills needed to be productive in higher education and the workplace (Dean, Hubbell, Pitler, & Stone, 2012; The Hunt Institute, 2012; National Governors Association & CCSO, 2010; Pearson, 2013).

Twenty-first-century learning supports the development of students to be good citizens, effective workers, and competitive in a global economy (Pearson, 2013). As there is an increase in rigor and relevance through the Common Core Initiative and an emphasis on twenty-first-century learning, teachers must understand that the new student-learning outcomes are focused around the students' ability to blend skills, demonstrate mastery of content knowledge, demonstrate expertise in relevant subject areas, and understand literacies from different content areas (Common Core State Standards Initiative, 2014; Partnership for 21st Century Skills, 2011). In addition to these outcomes, Partnership for 21st Century Skills (2009) suggests that students master (a) Learning and

Innovation Skills (critical thinking and problem solving); (b) Information, Media, and Technology Skills (evaluation and management of sources, create media, and application of technology); and (c) Life and Career Skills (flexibility and adaptability, initiative and self-direction, and social and cross-cultural). Dean, Hubbell, Pitler, and Stone (2012) suggest additional outcomes to develop twenty-first-century learners are personal learning goals for students, such as “self-check for understanding, access tools and resources for enhancing their understanding, and us[ing] what they have learned in real-world contexts” (p. xix).

Rotherham and Willingham (2009) suggest that schools need to be deliberate in instruction and curriculum to teach and develop students’ twenty-first-century skills. Teachers must “develop new skills or modify existing skills to meet the needs of students” (Dean, Hubbell, Pitler, & Stone, 2012, p. xvii). *Twenty-First-Century Skills: The Challenges Ahead* (2009) recommends that more training needs to be provided for teachers in order to fully understand how to intertwine skills and knowledge in instruction to support student development in the areas of critical thinking, problem solving, and collaboration (Dean, Hubbell, Pitler, & Stone, 2012; Rotherham & Willingham, 2009). Effective teaching of twenty-first-century learners includes assessments to inform instruction, ongoing professional development, establishment of a supportive learning environment, and the integration of student-centered teaching methods such as project-based and problem-based learning (American Association of School Librarians, 2007; Danielson, 2007; Partnership for 21st Century Skills, 2011; Pearson, 2013; Rotherham & Willingham, 2009).

Measuring K-12 Teacher Effectiveness

Teacher effectiveness in K-12 education is determined through evaluations of a teacher's performance. As education practices shift to focus on the development of twenty-first-century learners, teacher evaluations must change as well. Lee (2007) suggests that 5% to 15% of public-school teachers "perform at incompetent levels" (p. 545). To make a judgment of whether a teacher's performance is effective or ineffective, it is necessary for a school system to have reliable evaluation measures. Organizations are moving quickly to reform teacher evaluation and develop more accurate evaluations to assess teacher effectiveness (Marzano, 2012). In the past, evaluations have done little to inform the practitioner of their ability to effectively teach students (Marzano, 2013). According to Marzano (2012), the majority of teachers believe that an evaluation should include measurement, but should emphasize development. An evaluation that is focused on improvement and growth should be comprehensive and specific, include a developmental scale, and acknowledge and reward growth (Marzano, 2013).

Feedback for Better Teaching (2013b) suggests that when school systems fully understand effective teaching and are able to accurately measure it, then they will be able to "close the gap between their expectations for effective teaching and the actual teaching occurring in classrooms" (p. 2). It also suggests a teacher-evaluation system of multiple, valid, and reliable measures is the most accurate way to evaluate teaching. The *Measures of Effective Teaching Project* (2013a) proposes the Framework for Improvement-Focused Teacher-Evaluation Systems. This framework describes how the domains of (a) Measure Effective Teaching, (b) Ensure High-Quality Data, and (c) Invest in Improvement can

work together to create an effective evaluation system to improve effective teaching. The first domain, Measure Effective Teaching, includes (a) set expectations of teacher knowledge, skills, and behaviors that affect student achievement; (b) use multiple measures, such as student surveys, content tests, observation, and student achievement scores; and (c) balance weights into a single index of the scores from the multiple measures. The second domain is to Ensure High-quality Data in terms of validity, reliability, and accuracy of the measures used. The final domain, Invest in Improvement, includes (a) making meaningful distinctions between levels of performance in evaluations, (b) prioritizing support and feedback, and (c) referring to data to make all decisions. The measures discussed in the research brief are meant to be used only as a framework and should be altered when there is a shift in policy and expectations for students, teachers, and administrators.

The Two Purposes of Teacher Evaluation (2012) recommends a comprehensive evaluation first be specific and include “elements that research has identified as associated with student achievement” and “identifies classroom strategies and behaviors at a granular level” (p. 2). Evaluations should address this question: “Is the teacher delivering instruction that helps students learn and succeed?” (Weisberg, Sexton, Mulhern, & Keeling, 2009). Secondly, an effective evaluation has a scale or rubric to guide a teacher’s skill development. Marzano (2012) states, “Such a score would articulate developmental levels, such as not using, beginning, developing, applying, and innovating” (p. 4). The final characteristic of an evaluation, and one that is most important to growth and professional development, is that teachers are able to identify

“elements on which to improve, and then chart their progress throughout the year” (Marzano, 2012, p. 5). Teachers then can “select specific growth targets to accomplish during the year” (Marzano, 2012, p. 5).

It is important to consider what the main purpose is of the evaluation (Marzano, 2013). Is it just a score that measures classroom skills? Or is it a means to foster teacher development and is comprehensive and specific on strategies the teacher uses? The latter is the direction in which evaluations are developing. In order to improve effective instruction, an evaluation must make a teacher aware of his or her current level of performance, and ensure he or she knows both what it takes to improve performance and believes it can be accomplished (Bandura, 1993; Danielson, 2007).

Pre-Service Teacher Development

It is the responsibility of approximately 1,400 higher-education institutions to produce nearly 200,000 highly effective, beginning teachers each year (Greenberg, Pomerance, & Walsh, 2011; Sandholtz, 2011). Many researchers agree that even though these teacher candidates leave TEPs with the credentials that certify them as effective teachers, the first-year teacher struggles immensely to meet the demands of the classroom (Darling-Hammond, 2012; Harris & Sass, 2011; Lee, 2007; Shul & Ritter, 2013; Weisberg et al., 2009). Some research suggests that most teachers experience their greatest professional development during their first few years of teaching; unfortunately, they are also considered the least effective during their beginning years (Harris & Sass, 2011; Shul & Ritter, 2013; Weisberg et al., 2009). Harris and Sass (2011) suggest that it is the growth within a teacher’s first few years that makes them an effective teacher and

not their training in a TEP. However, Desimone et al. (2013) suggest that a strong foundation of content and pedagogy developed during TEPs helps make a smoother transition from pre-service teacher to an effective practitioner.

The newest accrediting body for educator preparation, Council for the Accreditation of Educator Preparation (CAEP), suggests the “ultimate goal of educator preparation is the impact of program completers on P-12 student learning and development” (p. 2). CAEP recommends that content and pedagogical knowledge; clinical partnerships and practice; and candidate quality, recruitment, and selectivity are “factors ‘likely to have the strongest effects’ on outcomes for students” (p. 2). These standards are further articulated through InTASC standards (CCSSO, 2013). TEPs must ensure that pre-service teachers

develop a deep understanding of the critical concepts and principles of their discipline and, by completion, are able to use discipline-specific practices flexibly to advance the learning of all students toward attainment of college- and career-readiness standards....ensure that effective partnerships and high-quality clinical practice are central to preparation so that candidates develop the knowledge, skills, and professional dispositions necessary to demonstrate positive impact on all P-12 students’ learning and development. . . .[and] that development of candidate quality is the goal of educator preparation in all phases of the program. (pp. 2-8)

National Council for Accreditation of Teacher Education (n.d.), before consolidating into CAEP, suggested “preparation/knowledge of teaching and learning, subject matter knowledge, experience, and the combined set of qualifications measured by teacher licensure are all leading factors in teacher effectiveness” (p. 3). Three key findings in the NCATE (n.d.) report emphasized standards for effective teacher development in teacher-education programs as follows: (a) teacher preparation helps

build pre-service teachers' development and understanding of knowledge and skills needed to be successful in the classroom, (b) teachers who are prepared when entering teaching are more likely to remain in education, and (c) teachers who are prepared will have higher student achievement. The teacher must know the content that needs to be taught, how to teach it to students, and believe that their efforts will improve student achievement (Bandura, 1993).

Desimone et al. (2013) conducted a qualitative study of first-year teachers and the inadequacies of their TEPs. The three themes that emerged were: (a) ill-prepared to handle a diverse student population, (b) student teaching was poorly aligned to their first job, and (c) first-year teachers lacked content knowledge. The researchers reported that the first-year teachers did not complain about a lack of training in management, although that was something they struggled with in the classroom. They reported that first-year teachers would have liked more training in management throughout their TEP. There were reported gaps in the theory to practice of strategies and approaches taught in the TEPs. In addition, the sample of first-year teachers in the study felt they were not ready to teach certain content to their students.

Grossman, Hammerness, and McDonald (2009) suggest that TEPs should “move away from a curriculum focused on what teachers need to know to a curriculum organized around core practices in which knowledge, skill, and professional identity are developed in the process of learning to practice” (p. 274). This shift would provide stronger connections between effective-teaching practices and teacher training instead of a disconnect between theory and practice (Maxie, 2001). Many pre-service teachers learn

about effective methods of management and instruction, but are not given the opportunity to attempt these methods in a real-life situation (Grossman et al., 2009). Lampert (2005) suggests “learning about a method or learning to justify a method is not the same thing as learning to do the method with a class of students” (p. 36). Teaching these skills in isolation may impact the effective-teaching development of pre-service teachers.

Teachers consider the various forms of field experience (early field experiences and student teaching experiences) as the most important component of their teacher education program. Field experience is defined as an opportunity when pre-service teachers observe and work with students, in-service teachers, and curriculum in an educational setting (Freeman, 2010; Huling, 1998). TEPs integrate field experiences as a key component to pre-service teacher development because it supports the development of effective teachers (Aiken & Day, 1999; Erdman, 1983; Greenberg, Pomerance, & Walsh, 2011). Effective field experiences that are closely connected with coursework allow pre-service teachers to improve their practice and enter the field as highly effective teachers. Shuls and Ritter (2013) suggest that a meaningful field experience is working alongside highly effective teachers within partner schools instead of passively observing in the classroom. The “hands-on” approach helps connect theory to practice, ultimately creating a powerful learning experience (Shuls & Ritter, 2013).

Field experiences provide pre-service teachers the opportunity to reflect on the development of their knowledge and skills, which results in improvement of their teaching practices. John Dewey (1933) considers reflective thinking to be highly valuable in education:

[Reflective] thinking enables us to direct our activities with foresight and to plan according to ends-in-view, or purposes of which we are aware. It enables us to act in deliberate and intentional fashion to attain future objects or to come into command of what is now distant and lacking. (p. 116)

Reflective thinking allows pre-service teachers to construct their own ideas of the complexities of teaching based on their experiences (Erdman, 1983; Maxie, 2001). The more diverse the settings of field experiences, the more effective pre-service teachers will be with students (Freeman, 2010).

An important aspect of teacher education is to understand the developmental thinking of pre-service teachers as they progress through TEPs' coursework and field experiences. TEPs integrate field experiences to improve teacher development as mandated by accrediting organizations such as CAEP. The work of Frances Fuller (1969) illuminates the metacognitive journey of a teacher in training through the concerns-based model, a classic theory of stages for teacher development (Conway & Clark, 2003). Field experiences are the common-sense answer to provide stronger connections between theory and practice; however, pre-service teachers may struggle in these areas due to decreased motivation and the view that education courses are irrelevant (Fuller, 1969).

Fuller (1969) suggests that as pre-service teachers move through the three phases of teaching (the pre-teaching phase, early teaching phase, and late-teaching phase), different concerns arise that affect individual development as teachers. She explains that the pre-teaching-concern stage is when pre-service teachers have ambiguous concerns about their teaching in areas of discipline, receiving a good grade in the course, and completing course assignments. The early teaching phase sees pre-service teachers begin

to have concerns about students, but struggle to understand the “parameters of the school situation” (Fuller, 1969, p. 220). The final phase, late-teaching, is when the teacher focuses on the student and is able to self-evaluate teaching skills.

Conway and Clark (2003) advance Fuller’s concern model of 1969 and build on the revised concern model by Fuller and Bown in 1975, which identifies the three stages as (a) concerns about self, (b) concerns about tasks/situations, and (c) concerns about impact on students. Instead of stages distinctly marked by a teacher’s ability to think either inwardly or outwardly, the researchers explain that through each phase, pre-service teachers and in-service teachers integrate the three. As each individual engages in reflective thinking and experiences diverse settings, they move through the different stages trying to balance both thoughts of self and students (Conway & Clark, 2003; Freeman, 2010). Pre-service teachers’ development of skills and knowledge throughout the stages is “based on their experience during practicum as well as their self assessment of their knowledge and anticipated capability to translate it into action” (Albion, Jamieson-Proctor, & Finger, 2010, p. 3778).

Social Learning Theory

Teachers must be aware of effective-teaching skills and be conscious of their actions and how they affect student achievement in the classroom (Danielson, 2007). Research suggests that when a teacher does something that positively affects his or her students, they are more likely to repeat that action and even improve upon it (Bandura, 1971; Bandura 1993; Danielson, 2007). This type of thinking and behavior falls under social learning theory (Schunk, 2012). Early research of social learning theory suggests

that internal causes affected behavior instead of outside forces affecting the individual and their responses (Bandura, 1971). However, Bandura states “researchers repeatedly demonstrated that response patterns, generally attributed to underlying forces, could be induced, eliminated, and reinstated simply by varying external sources of influence” (Bandura, 1971, p. 2). As a result of continuous research, behaviorists support the view that the “causes of behavior are found, not in the organism, but in the environmental forces” thus establishing the beginning of the social learning theory (Bandura, 1971, p. 2). Bandura’s theory “posits that we are motivated to perform an action if we believe that action will have a favorable result (outcome expectation) and we are confident that we can perform that action successfully (self-efficacy expectation)” (as cited in Bleicher, 2007, p. 842). This explains why a teacher is more likely to repeat a strategy that is successful and improves student achievement than one that produces no change in the students.

Bandura’s (1971) work on social learning theory emphasizes vicarious, symbolic, and self-regulatory processes. First, all learning can result in vicarious experiences observing other people’s behavior. Second, an individual’s cognitive capacity helps to determine the impact of actions in the present and future. The third emphasis in Bandura’s social learning theory is that an individual is able to self-regulate his or her behavior based on the activity and possible consequences of actions. This supports Rotter’s (1966) early work on social learning theory that it is the “effect of a reinforcement following some behavior on the part of a human subject...[a process that] depends upon whether or not the person perceives a causal relationship between his own

behavior and the reward” (p. 1). It focuses on the strength of the “expectancy that a particular behavior or event will be followed by that reinforcement in the future” (Rotter, 1966, p. 1). As a result of these expectations, an individual strengthens his or her own expectations of personal effectiveness (Bandura, 1977). The steps of social learning theory can be seen throughout TEPs from early field experiences to student teaching experiences where pre-service teachers observe and teach in the classroom. When effective-teacher practices result in desirable outcomes, the pre-service teachers strengthen their expectations of their own personal effectiveness as a teacher, which increases their teacher efficacies (Bandura, 1977).

Teacher Efficacy

Bandura (1993) states, “Efficacy beliefs influence how people feel, think, motivate themselves, and behave” (p. 118). Bandura (1997) defines self-efficacy as the “judgments of personal capability” (p. 11). The cognitive process of efficacy begins with an individual thinking about different actions in a certain task or scenario based on the level of belief in his or her capability of completing the task. It influences “an individual’s choice of activities, goal levels, persistence, and performance in a range of contexts” (Zhao, Seibert, Hills, 2005, p. 1266). Bandura (1993) suggests, “Those who have a high sense of efficacy visualize success scenarios that provide positive guides and supports for performance. Those who doubt their efficacy visualize failure scenarios and dwell on the many things that can go wrong” (p. 118). The four main sources that influence efficacy are: (a) performance accomplishments or mastery experiences, (b)

vicarious experiences, (c) verbal persuasion to be successful, and (d) anxiety and vulnerability level to stress (Bandura, 1977; Tschannen-Moran & Hoy, 2007).

Tschannen-Moran and Hoy (2001) define teacher efficacy as a teacher's "judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (p. 783). A teacher's level of efficacy will "affect the effort they invest in teaching, the goals they set, and their level of aspiration" (Tschannen-Moran & Hoy, 2001). When teacher efficacy is high, "teachers tend to utilize a variety of instructional strategies that are autonomy-supportive and positive for student engagement and achievement outcomes" (Duffin et al., 2012, p. 828). Tschannen-Moran and Hoy (2007) suggest:

Efficacy beliefs are raised if a teacher perceives her or his teaching performance to be a success, which then contributes to the expectations that future performances will likely be proficient. Efficacy beliefs are lowered if a teacher perceives the performance a failure, contributing to the expectation that future performances will also fail. (p. 945)

Teacher efficacy is rooted in Rotter's (1966) locus of control theoretical perspective "where teacher efficacy is defined as a teacher's competence beliefs based on whether or not he/she perceives control over the learning situation" (Duffin, French, & Patrick, 2012, p. 828). It also is based on Bandura's (1971) social-cognitive theory "where teacher's self-efficacy for teaching refers to the belief a teacher holds regarding his/her capability to carry out instructional practices in the educational context that result in positive student outcomes such as motivation and achievement" (Duffin, French, & Patrick, 2012). Teachers look at the school level and setting, availability of teaching

resources, and the quality of the school facilities when determining how successful they will be at the teaching task (Tschannen-Moran & Hoy, 2007). Bandura suggests (as cited in Tschannen-Moran and Hoy, 2007) that it is best when “teachers slightly overestimate their actual teaching skills, as their motivation to expend effort and to persist in the face of setbacks will help them make the most of the skills and capabilities they do possess” (p. 946).

The internal-locus-of-control theory, “a generalized expectancy concerning whether responses influence the attainment of outcomes such as successes and rewards” developed by Rotter (1966), serves as the theoretical backbone for research on self-efficacy (Schunk, 2012, p. 367). RAND Corporation was the first to study teacher efficacy focusing on “whether teachers believed they could control the reinforcement of their actions” and influence student achievement (Armor et al., 1976, p. 4). The researchers, using Rotter’s social cognitive theory, developed two survey items to measure teacher efficacy (Tschannen-Moran & Hoy, 1998; Tschannen-Moran & Hoy, 2001; Guskey & Passaro, 1994). The results indicated that teacher efficacy was the “most powerful variable in predicting program implementation success” (Guskey & Passaro, 1994, p. 628).

The groundbreaking research of RAND resulted in over 30 years of teacher-efficacy research to further develop the theory and measurements of the construct (Tschannen-Moran & Hoy, 1998). Bandura’s theory on social learning and locus of control (acquiring new behaviors and retaining those behaviors as a result of cognitive processes) evolved in response to the RAND study and Rotter’s theoretical framework

(Bandura, 1978). Bandura identified “teacher efficacy as a type of self-efficacy—a cognitive process in which people construct beliefs about their capacity to perform at a given level of attainment” (Bandura, 1978; Tschannen-Moran & Hoy, 1998, p. 203).

Guskey developed a thirty-item instrument where participants were asked to weight the importance of two choices per item (Tschannen-Moran & Hoy, 2001). This instrument measured the responsibility teachers felt they had for their students’ achievement. The results were found consistent with the RAND study in that there were “significant positive correlations between teacher efficacy and responsibility for both student success and student failure” (Tschannen-Moran & Hoy, 2001, p. 785).

Gibson and Dembo (1984) investigated the reliability and validity of measuring teacher efficacy. The researchers developed the Teacher Efficacy Scale, which measured General Teacher Efficacy (a teacher’s belief about the impact of demographic factors such as race, gender, and class versus the impact of the school and teacher on an individual), and Personal Teacher Efficacy (a teacher’s belief). Their findings supported Bandura’s research and “lend support to the applicability of Bandura’s conceptualization of self-efficacy in research on teacher efficacy” (Gibson & Dembo, 1984, p. 574).

Tschannen-Moran and Hoy (2001) developed an instrument to measure teacher efficacy based on the recommendations of this earlier teacher-efficacy research. The Ohio State Teacher Efficacy Survey (OSTES) assessed “teaching in support of student thinking, effectiveness with capable students, creativity in teaching, and the flexible application of alternative assessment and teaching strategies” (Tschannen-Moran & Hoy, 2001, p. 801). The instrument specifically addressed the limitations of earlier studies,

particularly Gibson and Dembo, which focused on “coping with student difficulties and disruptions as well as overcoming the impediments posed by an unsupportive environment” (as cited in Tschannen-Moran & Hoy, 2001, p. 801). The OSTES had three dimensions of efficacy for “instructional strategies, student engagement, and classroom management [to] represent the richness of teachers’ work lives and the requirements of good teaching” (Tschannen-Moran & Hoy, 2001, p. 801).

Pre-Service Teacher Efficacy

Pre-service teachers enter a TEP with a foundational awareness of schools, classrooms, and teaching practices (Duffin et al., 2012). For most pre-service teachers, they have at least 13 years of experience in the K-12 school system that inform their perceptions of effective teaching and teacher efficacy (Duffin et al., 2012; Tschannen-Moran & Hoy, 2001). Evans and Tribble (1986) suggest that different perceptions of a pre-service teacher’s ability within certain areas will differ based on their field experiences. Saklofske, Michaluk, and Randhawa (as cited in Hoy 2000) suggest:

Undergraduates with a low sense of teacher efficacy tended to have an orientation toward control, taking a pessimistic view of students’ motivation, relying on strict classroom regulations, extrinsic rewards, and punishments to make students study. Once engaged in student teaching, efficacy beliefs also have an impact on behavior. [Pre-service teachers] with higher personal teaching efficacy were rated more positively on lesson-presenting behavior, classroom management, and questioning behavior by their supervising teacher on their ...evaluations. (p. 2)

It is important to consider the dual role of pre-service teachers and how it impacts their teacher efficacy. Not only do pre-service teachers have to learn how to be effective teachers while in their field experiences, but they must also learn new content and

material through coursework in their role as a college student (Bandura, 1993). Hoy suggests, “general teaching efficacy appears to increase during college coursework, then declines during student teaching” because of the complexities and realities of teaching that are seen during their student teaching placement (p. 2).

TEPs must balance the support given to the pre-service teacher as both a student and teacher. A focus of TEPs should be on teacher efficacy as an important part of pre-service-teacher development and effective teaching in the classroom field experiences. Duffin et al. (2012) suggest support of pre-service teachers’ self-efficacy, or teacher efficacy, is important to developing effective teachers because it affects their performance in their field experience classrooms. Field experiences in a TEP heavily emphasize vicarious and mastery experiences for pre-service teachers as a way to affect their teacher efficacy (Tschannen-Moran & Hoy, 2007). Tschannen-Moran and Hoy (2007) describe vicarious experience as the pre-service teacher’s observation of the cooperating teacher’s teaching and modeling. Mastery experiences are defined as those moments when the pre-service teacher experiences a teaching accomplishment with students (Tschannen-Moran & Hoy, 2007). Bandura (1993) suggests these experiences affect pre-service teachers’ “beliefs in their personal efficacy to motivate and promote learning to affect the types of learning environments they create and the level of academic progress their students achieve” (p. 117).

As suggested in the CAEP standards, TEPs should develop highly qualified teachers who are effective in the classroom and who can raise student achievement (Strong, 2011). Evans and Tribble (1986) suggest that in order to do this, TEPs must

“maintain and increase...efficacy levels that pre-service teachers might bring” to their program (p. 85). “Efficacy beliefs are presumed to be relatively stable once set,” but field experiences, supervisors, mentoring programs, and structures and supports of TEPs may impact a pre-service teacher’s sense of efficacy (Tschannen-Moran & Hoy, 2001, p. 802). TEPs must foster the development of “not only skills, but self-beliefs of efficacy to use them well...a [pre-service teacher] with the same knowledge and skills may perform poorly, adequately, or extraordinarily depending on fluctuations in self-efficacy thinking” (Bandura, 1993, p. 119).

Different levels in teacher efficacy do influence pre-service teachers’ views of effective teaching as well as their performance. Collins (as cited in Bandura, 1993) reported that individuals with higher self-efficacy had a more positive view of the content area. He concluded, “people who perform poorly may do so because they lack the skills or they have the skills, but they lack the sense of efficacy to use them well” (as cited in Bandura, 1993, p. 119). Tschannen-Moran and Hoy (2007) suggest that, when new teachers report low self-efficacy, they either find strategies to improve in areas, leave the profession, have higher stress, or lack commitment to the profession.

Construct Development I: Framework for Teaching

Teaching is a complex career (Hollins, 2011). Hollins (2011) describes teaching as a “multidimensional process that requires deep knowledge and understanding in a wide range of areas and the ability to synthesize, integrate, and apply this knowledge in different situations, under varying conditions, and with a wide diversity of groups and individuals” (p. 395). In fact, effective teaching requires ongoing professional learning

and improvement (Danielson, 2008; Danielson, 2009). Danielson's *Framework for Teaching* assists teachers in identifying their current professional practices and areas for improvement. This framework describes what "teachers should know and be able to do in the exercise of their profession" (Danielson, 2007, p. 1). There are four domains with 22 components in the framework that describe the complexity of the role of the teacher. These four domains are: (a) *Planning and Preparation*, (b) *The Classroom Environment*, (c) *Instruction*, and (d) *Professional Responsibility*.

Danielson (2007) explains that a framework for teachers serves as a means to communicate the professionalism of teaching and many school districts use it as the foundation of their teacher evaluations. The framework serves to meet the needs of all teachers, from novice to veterans, and provides a "road map" to improve teaching practices. It serves to develop a common language in education where all teachers of varied experiences can have conversations about their practice and developing skills. The detailed performance levels and criteria can be a way for teachers to self-assess their performance. As a reflective exercise, teachers can identify where they are as a professional and what they need to do to improve their practice due to the clarity of the framework.

As accountability increases in teacher education, the framework can also be used as an evaluation tool for pre-service teachers. It is a tool that can help guide pre-service teachers through the reflective process, as well as to guide TEP improvements and alignment to K-12 education systems (Danielson, 2008). Danielson states in *The Handbook for Enhancing Professional Practice* (2008):

Teacher educators have found the framework for teaching to be a useful organizing structure for their programs. If the framework represents good teaching, the argument goes, are we teaching our candidates the skills delineated in the framework? Are they aware of these concepts and ideas? Can they design instruction to ensure student engagement? ...the framework can help to ensure that all graduates of a program are fully equipped to succeed as the teacher of record in a classroom. (pp. 25-26)

Danielson (2008), CAEP (2013), and CCSSO (2013) suggest TEPs align coursework, intended outcomes of field experiences, and accreditation standards with expectations of effective teaching to support their program structure. Other than performance assessments of field supervisors and cooperating teachers, little is known about the level of teacher efficacy in pre-service teachers within the four domains of the framework (*Planning and Preparation, The Classroom Environment, Instruction, and Professional Responsibilities*). Graduating teacher candidates should enter their first year of teaching with an awareness, ability, and belief that they can effectively teach within the areas of the four domains to raise student achievement.

Domain 1. *Planning and Preparation* is connected to content knowledge of a teacher. In order to make content and material accessible to K-12 students, teachers must understand what they are teaching to guide student understanding. Danielson (2007) defines content as “concepts, principles, relationships, methods of inquiry, and outstanding issues” (p.44). An effective teacher must know more than the content; he or she must be able to teach it through techniques appropriate to that subject. Teachers must be able to demonstrate that they have developed the knowledge and skills necessary to be effective under this domain. The components under *Planning and Preparation* include (1a) demonstrating knowledge of content and pedagogy, (1b) demonstrating knowledge

of students, (1c) setting instructional outcomes, (1d) demonstrating knowledge of resources, (1e) designing coherent instruction, and (1f) designing student assessments.

Knowledge of content and pedagogy intertwine throughout this domain. In order to effectively teach content and anticipate misconceptions, the teacher must have knowledge of the pedagogy related to the content, which includes appropriate learning outcomes and assessments. It is important that teachers are always developing in this particular domain because approaches, ideas, and content are always changing. Effective teachers must “transform that content into meaningful learning experiences for students” (Danielson, 2007, p. 45).

Domain 2. *The Classroom Environment* focuses on the environment of the classroom as an influence on student achievement. A classroom must be supportive of students, a positive learning environment, and focus on learning. If a classroom does not have this, it makes the components under *Planning and Preparation* very difficult to demonstrate. Domain 2 is primarily focused on classroom management and relationships with students. Components of this domain include (2a) creating an environment of respect and rapport, (2b) establishing a culture for learning, (2c) managing classroom procedures, (2d) managing student behavior, and (2e) organizing physical space. If a teacher is not able to demonstrate that his or her classroom environment meets these five components, Danielson (2007) suggests there will be little instruction and learning occurring in the classroom.

Domain 3. Instruction is the “heart of the framework for teaching” (Danielson, 2007, p. 77). It is the area in which teachers are able to engage students in meaningful instruction of content. The components within this domain promote learning through questioning, discussion, and formal and informal assessments. Teachers must focus on how students perform during instruction, and respond and adjust their instruction to meet the needs of students. The components of Domain 3 include (3a) communicating with students, (3b) using questioning and discussion techniques, (3c) engaging students in learning, (3d) using assessment in instruction, and (3e) demonstrating flexibility and responsiveness.

Domain 4. Professional Responsibilities is similar to Domain 1 in that it is the work that teachers do outside of teaching and interacting with students. Domain 4 focuses on the ethical and professional practices of effective teachers. The components under this domain include (4a) reflecting on teaching, (4b) maintaining accurate records, (4c) communicating with families, (4d) participating in a professional community, (4e) growing and developing professionally, and (4f) showing professionalism.

Construct Development II: InTASC

The Interstate Teacher Assessment and Support Consortium (InTASC): Model Core Teaching Standards and Learning Progression for Teachers (2013) provide a continuum of performance expectations of effective teachers from pre-service to in-service teachers. InTASC (2013)

outline[s] what teachers should know and be able to do to ensure every PK-12 student reaches the goal of being ready to enter college or the

workforce in today's world...[and] outlines the principles and foundations of teaching practice that cut across all subject areas and grade levels and that all teachers share. (p. 3)

These research-based standards help to illustrate effective-teaching practices and guide TEPs to develop highly effective teachers. The focus of the standards is on real-life application of knowledge and skills. InTASC assists teachers and TEPs in knowing how to develop effective-teaching skills to meet the demands of PK-12 (Preschool-12th grade) student achievement. InTASC (2013) suggests the standards are also intended to serve as a tool for TEPs:

Preparation program providers and cooperating PK-12 teachers can use the [framework] to inform the preparation curriculum, including what content focus is included and how coursework is sequenced, how experiences during clinical practice should be scaffolded, and what should be included in a “bridge plan” for continued growth for pre-service teachers as they move to in-service and their induction period. (p. 12)

Another suggestion for the use of the standards and progressions is that it can be helpful as a self-assessment tool to “reflect on [TEPs’] individual practice against a framework for development” (InTASC, 2013, p. 11).

The framework provides a rubric of the progressions within each standard. The levels represent the different stages of development for teachers and the progression of development under the new vision of teaching—preparing students to be college- and career ready. “The progressions are a type of rubric in that they consist of descriptive criteria against which a teacher...can compare performance and make formative judgments to support a teacher’s growth” (InTASC, 2013, p. 10). The level descriptors were once used to determine the level of practice for new teachers to experienced

teachers; however, now the descriptors focus on how the teacher provides the instruction, learning environment, and additional support to promote success amongst learners.

A large emphasis of the standards and progressions is based on how the individual applies the knowledge, skill, and dispositions necessary for effective practice under each standard. The standards are designed for three purposes: (a) “announce[s] a big picture vision” of effective teaching, (b) “defines a specific bar or level of performance” for a teacher, (c) and “articulate[s] the opportunity to learn...that must be in place to ensure a teacher has opportunity to meet the standards” (InTASC, 2013, p. 7). The InTASC standards are interwoven and one cannot be isolated from the other. The four general categories of InTASC standards (The Learner and Learning, Content, Instructional Practice, and Professional Responsibility) are “integrated and reciprocal processes” (InTASC, 2013, p. 7). It is the purpose of the standards to “describe a new vision of teaching to which we aspire as we work to transform our education system to meet the needs of today’s learners” (InTASC, 2013, p. 7).

The standards in the Learner and Learning category include Learner Development, Learning Differences, and Learning Environments. These standards are rooted in the importance of teachers’ knowledge and understanding of the development and differences of every student in the classroom. It is the teacher’s responsibility to create an environment that supports all learners to take ownership of their learning and work collaboratively and independently. All three of these standards describe effective teaching as the knowledge of learners’ development “across the cognitive, linguistic, social, emotional, and physical areas” (InTASC, 2013, p. 8). The teacher must use

information about learners to create and maintain learning environments that are inclusive and support learner growth in the above mentioned areas.

The Content category focuses on the necessity of teachers' deep understanding of content knowledge. This type of understanding enables teachers to "draw upon content knowledge as they work with learners to access information, apply knowledge in real world settings, and address meaningful issues" for students (InTASC, 2013, p. 8).

Teachers must know the content to a degree in which they are able to facilitate learning using technology and cross-curricular skills. InTASC suggests that these cross-curricular skills include "critical thinking, problem solving, creativity, [and] communication...to help learners use content to propose solutions, forge new understandings, solve problems, and imagine possibilities" (InTASC, 2013, p. 8). A teacher must be able to successfully make connections in the content to real-world local, national, or global issues.

The category of Instructional Practice includes standards centering on the importance of teachers' effectiveness in their instruction. Instruction is defined as the "understand[ing] and integrat[ion] of assessment, planning, and instructional strategies in coordinated and engaging ways" (InTASC, 2013, p. 9). Backwards design is a core piece of this category where teachers should be "thinking a great deal, first, about the specific learnings sought, and the evidence of such learnings, before thinking about what we, as the teacher, will do or provide in teaching and learning activities" (Wiggins, 2005, para. 1). In other words, teachers must identify objectives for learners, appropriate content standards, and determine assessments to measure those objectives. Assessments are used to inform instruction. Teachers must consider the differences of all learners and reflect

that in planning and instruction. Instructional strategies must be appropriate to the learners and “encourage learners to develop deep understanding of content areas...and to build skills to apply knowledge in meaningful ways” (InTASC, 2013, p. 9).

The standards under Professional Responsibility support teacher engagement in ongoing self-improvement to provide the necessary support to learner achievement. According to InTASC (2013), “teachers must engage in meaningful and intensive professional learning and self-renewal by regularly examining practice through ongoing study, self-reflection, and collaboration” (p. 9). Professional development can help teachers improve practices in instruction and learning. Teachers who engage in professional development (self-improvements and collaboration with other professionals) become leaders in the field “by modeling ethical behavior, contributing to positive changes in practice, and advancing their profession” (InTASC, 2013, p. 9).

Part II

Instrument Development

Measuring pre-service teachers’ effective teacher efficacy requires a valid and reliable instrument that measures the latent construct of teacher efficacy. Latent constructs are “abstract” attributes that are not directly observable or quantifiable, but are something present in an individual and capable of emerging (Burton & Mazerolle, 2011; DeVellis, 2012; Netemeyer, et al., 2003). Netemeyer, Bearden, and Sharma (2003) suggest a standardized measure of a latent construct helps to establish norms of a construct when “(a) rules of measurement are clear, (b) it is practical to apply, (c) it is not

demanding of the administrator or respondent, and (d) results do not depend on the administrator” (p. 2). Moreover, establishing a standardized measure of a construct that is not directly observable increases objectivity, produces quantifiable results, and takes time to design (Netemeyer et al., 2003). DeVellis (2012) suggests that a measurement scale is developed when a researcher has a theoretical background of directly unobservable phenomena and wants to increase the understanding of its existence. A primary purpose of this research is to develop an instrument to examine the phenomena of pre-service teachers’ effective teacher efficacy and use findings to inform the research of teacher development to strengthen the “bridge” from pre-service to in-service teachers.

The emphasis on effective teaching as a measure of accountability makes the theory of teacher development and teacher efficacy the primary focus in the measurement scale. An understanding of the theory is necessary to operationalize and quantify the construct in order to objectively test pre-service teachers’ development of effective teacher efficacy. Developing a valid and reliable instrument helps to “capture the targeted construct more accurately” and allows the researcher to confidently report results (Netemeyer, et al., 2003, p. 10; Burton & Mazerolle, 2011).

Validity

Validity is important to survey design and administration. An instrument can be considered valid “from the manner in which a scale was constructed, its ability to predict specific events, or its relationship to measures of other constructs” (DeVellis, 2012, p. 59). Instrument development requires that it validly measure a construct. *Standards for Educational and Psychological Testing* (1999) describe validity as a foundational

component of test development and one that requires multiple forms of evidence. Burton and Mazorelle (2011) suggest validity is the “degree that an instrument actually measures what it is designed or intended to measure” (p. 1). American Educational Research Association (AERA) (1999) recommends validity as the “degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests” (p. 9). The process of validating an instrument is both the responsibility of the test developer and test taker (AERA, 1999). There are several types of instrument validity; four types of the most frequently used validity processes are face validity, content validity, criterion-related validity, and construct validity (Brown, 1983; Burton & Mazerolle, 2011; DeVellis, 2012; Fink, 2003; Hox, 1997).

Face validity is the “evaluation of an instrument’s appearance by a group of experts and/or participants” (Burton & Mazerolle, 2011, p. 29). Many researchers consider this type of validity to be informal and a limited form of content validity (DeVellis, 2012; Netemeyer, et al., 2003). It is suggested that assessing the validity of an item simply by looks is wrong and is based on personal perceptions (DeVellis, 2012). DeVellis (2012) states that face validity should not be used to determine if “a measure assesses what it looks as though it is assessing” (p. 70), if a measure is evident in the item, and if the purpose is clear on the face of the instrument. Therefore, face validity should only consist of feedback from experts and participants based on “ease of use, proper reading level, clarity, easily read instructions, and easy-to-use response formats” (Netemeyer, et al., 2003, p. 12-13).

Content validity is the evaluation of an instrument's item alignment and representation of a construct's theory and domain (Burton & Mazerolle, 2011; DeVellis, 2012; Netemeyer, et al., 2003). It accurately measures the construct it is meant to measure (Fink, 2003). Unlike face validity, content validity digs deeper into the items themselves and not merely at the "face" of the instrument. DeVellis (2012) suggests the items on the test must reflect a content domain for high content validity. An example of this is in using the FFT as the framework for an instrument. The items in the survey must sufficiently represent each different domain of the FFT for high content validity. Aligning items to each domain also establishes and strengthens dimensionality to the instrument.

Criterion-related validity refers to how well the items in the instrument predict the individual's performance or a process relevant to the construct (DeVellis, 2012; Netemeyer, 2003). The type of criterion validity most often used is predictive validity, which "refers to the ability of a measure to effectively predict some subsequent and temporally ordered criterion" (Netemeyer, et al., 2003, p. 76). Fink (2003) suggests criterion validity can predict the future performance of an individual or can compare the results of the instrument with one that was previously validated.

Construct validity focuses on the measurement of traits and can explain individual differences throughout the collected data. Netemeyer et al. (2003) state:

Construct validity represents the overarching quality of a research study or even a program of studies, with other categories or types of validity being subsumed under construct validity. As such, a measure is construct valid (a) to the degree that it assesses the magnitude and direction of a representative sample of the characteristics of the construct and (b) to the

degree that the measure is not contaminated with elements from the domain of other constructs or error. (p. 71)

DeVellis (2012) states, “Construct validity is directly concerned with the theoretical relationship of a variable to other variables” (p. 64). Fink (2003) proposes that this type of validity measure distinguishes between individuals with different characteristics as to how they respond to each item.

Reliability

A reliable instrument must consistently measure a construct despite of “influences by extraneous conditions” (AERA, 1999; Hox, 1997, p. 65). Cronbach (2004) explains the concept of reliability as follows:

If, hypothetically, we could apply the instrument twice and on the second occasion have the person unchanged and without memory of his first experience, then the consistency of the two identical measurements would indicate the uncertainty due to measurement error, for example, a different guess on the second presentation of a hard item. (p. 394)

Standards for Educational and Psychological Testing (1999) suggest it is important that measurements are consistent when administered repeatedly to a sample population. Brown (1983) notes that it is possible to have a reliable instrument that is not valid, meaning the instrument could measure similarly with another instrument, but not be a valid measure of a construct. Hox (1997) suggests that a reliable instrument should have scores from individuals in various environmental conditions that are similar, reflect an individual’s score as the true score, and apply to practical situations. Ways to estimate reliability include Cronbach’s coefficient alpha, test-retest reliability, alternative forms reliability, split-half reliability, and internal consistency (Hox, 1997; Brown, 1983).

The objective of having a reliable instrument is that it measures the construct similarly in various contexts and with different sample populations. Cronbach (1951) states that the research done in result of the data “must be concerned with the accuracy and dependability or . . . reliability of measurement” (p. 297). Internal consistency is the most widely used test of reliability (Netemeyer, 2003). DeVellis (2012) suggests that the best test to determine internal consistency is the Cronbach’s alpha coefficient. Cortina (1993) recommends “coefficient alpha as one of the most important and pervasive statistics in research involving test construction and use” (p. 98).

Coefficient alpha (α) “is concerned with the degree of interrelatedness among a set of items designed to measure a single construct” (Netemeyer, 2003, p. 49). Cortina (1993) suggests it is the “mean of all split-half reliabilities” (p. 98). DeVellis (2012) describes α as the “proportion of a scale’s total variance that is attributable to a common source, presumably the true score of a latent variable underlying the items” (p. 37). Cronbach (1951) describes the process as “if all the splits for a test were made, the coefficients obtained would be α ” (p. 306). Researchers should not use α in isolation; it is important to consider “its relationship to the number of items in a scale, the level of inter-item correlation, item redundancy, and dimensionality” (Netemeyer, 2003, p. 58). A reliable instrument can score no lower than 0.70 for α (Netemeyer, et al., 2003). DeVellis (2012) suggests:

Ranges for research scales are as follows: below .60, unacceptable; between .60 and .65, undesirable; between .65 and .70, minimally acceptable; between .70 and .80, respectable; between .80 and .90, very good; and much above .90, one should consider shortening the scale. (p. 109)

During instrument development, DeVellis (2012) recommends to aim for a higher α to allow for variations in α based on different contexts and samples to continue to have an instrument with a high α level.

Scale Development

Fink (2003) suggests that surveys are a “system for collecting information from or about people to describe, compare, or explain their knowledge, attitudes and behavior” (p. 1). When designing an instrument to use in the study the researcher must: (1) set objectives, (2) design the study, (3) create a valid and reliable instrument, (4) administer the survey, (5) manage and analyze data, and (6) report results (Fink, 2003). Surveys can be created because of a need, from a review of literature, or from experts. DeVellis (2012) suggests, “The ultimate quality we seek in an item is a high correlation with the true score of the latent variable” (p. 104). Netemeyer et al. (2003) recommend four steps in scale development. These steps are common guidelines Netemeyer et al. (2003) identified that align with scale development research.

Step one, *Construct Definition and Content Domain*, emphasizes that the design process of an instrument is very important in the theories of conceptualization to operationalization. Developing an instrument begins with a large and vague concept or construct identified through an examination of relevant theory (Hox, 1997; Netemeyer et al., 2003; DeVellis, 2012). A thorough review of the literature allows the scale developer to “(a) [identify] the importance of a clear construct definition, content domain, and the role of theory; (b)... focus on ‘effect’ or ‘reflective’ items rather than ‘formative’ indicators; and (c) [consider the] construct dimensionality” (Netemeyer et al., 2003, p.

16). During this time, the developer engages in the process of “concept specification,” where the larger idea (construct) is broken down into more specific components or domains to design and align survey items to the literature (Hox, 1997). Another researcher, Fiske (as cited in Hox, 1997), uses this as a framework for his own suggested process of moving from a vague concept to very specific dimensions in scale development. Fiske’s steps include, as described by Hox (1997), (a) “identify the theoretical context of the concept,” (b) “delineate the core of the construct,” and (c) “construct a measurement instrument” (p. 54).

Step two, *Generating and Judging Measurement Items*, focuses on the face and content validity of the scale. The structure of the statements and items is important when developing the item pool for the instrument (Hox, 1997). Things to consider include:

(a) theoretical assumptions about items, (b) generating potential items and determining the response format (i.e., how many items as an initial pool, dichotomous vs. multichotomous response formats, and item wording issues), (c) the focus on “content” validity and its relation to theoretical dimensionality, and (d) item judging (both expert and layperson). (p. 16)

There are two theoretical constructs for language use in written items that are important to note. The first is the connotation of words selected in survey items, which is the “association that words have in the minds of the users, or the list of all characteristics included in the construct” (Hox, 1997, p. 56). The second is the denotation of the construct, which would be a “listing of objects to which it refers” (Hox, 1997, p. 56). Problems that can occur through this particular theory are confusion of a word’s meaning, vague descriptions or vocabulary, or the wrong use of a term or word. When direct and descriptive language is used in an instrument, it increases its validity and reliability.

Different types of survey questions include: (a) purposeful (questions are clearly related to objectives), (b) concrete (precise and unambiguous), (c) complete sentences (express an entire thought), and (d) open (responses required) and closed (answers are preselected). Writing items and questions require straightforward language with no ambiguity, such as vague words like “student needs,” “characteristics,” “discipline methods,” and “benefit” (Fink, 2003). The reviews by experts and participants help catch these errors the scale developer may have overlooked and increase the validity of the instrument. The pool of items is then trimmed to reflect the results from the reviewers.

Step three, *Designing and Conducting Studies to Develop and Refine the Scale*, suggests the revised instrument must undergo a pilot survey in which a sample of subjects from a relevant population completes the survey. This is done primarily as an “item-trimming procedure” where items are selected for removal based on the validity and reliability results (Netemeyer et al., 2003, p. 16). This phase of the developmental process requires a sample size relative to the number of items on the instrument. A larger sample size reduces the variance in results. Scale items are retained according to the results of exploratory factor analysis and α . Exploratory factor analysis is used in this step to help identify the “items that are performing better or worse,” explain variation among variables, and define the meaning of the factors (DeVellis, 2012, p. 117). Coefficient alpha is used in this step to strengthen the internal consistency of the instrument. It is important to remember that instruments must have a sufficient amount of items to “tap the domain of the construct [and] when the wording of the items is too similar, coefficient alpha...may not be enhanced” (Netemeyer et al., 2003, p. 126).

Step four, *Finalizing the Scale*, emphasizes that developing the final scale requires a similar process as in step three. The revised scale should be administered to several larger samples. Confirmatory factor analysis is used to “confirm an a priori hypothesis about the relationship of a set of measurement items to their respective factors” (Netemeyer et al., 2003, p. 148). Additional internal consistency and validity measures are completed. Norms of means and standard deviations of the scale are reported to contribute to the research. The application of generalizability theory is needed to “assess the effects of different variance components on the reliability scale” (Netemeyer et al., 2003, p. 70).

Summary

Teaching students who are college- and career-ready requires effective teaching. In-service teachers are evaluated on their effectiveness in the classroom and impact on student achievement. They are even encouraged to reflect on and improve their practice. As teachers enter their beginning years of teaching, the research suggests they struggle with the complexity of teaching and being effective in the classroom. There is a need in TEPs to develop effective teachers who can impact student achievement and continuously grow professionally. They must be classroom-ready.

Researchers have presented a connection between high teacher efficacy and highly effective teaching of in-service teachers. However, much of the research on effective teaching attempts to explain effective-teaching development of in-service teachers, the struggle to connect theory to practice in TEPs, and importance of field

experiences to the development of pre-service teachers. Further research is needed in the area of effective teacher efficacy of pre-service teachers to improve the development of effective pre-service teachers and improve the readiness of first-year teachers.

Without looking at what pre-service teachers believe they can and can't do in the classroom, it is difficult to identify areas in which to improve TEPs and ways to support the development of effective teachers at the pre-service stage. Using the theories of survey development, this research attempts to develop a survey that validly and reliably measures the effective teacher efficacy of pre-service teachers in order to better support the development of highly effective teachers.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter describes the research methodology used to develop a valid and reliable survey to measure pre-service teacher effective teacher efficacy. The scale development followed methodology and definitions proposed in *Scaling Procedures: Issues and Applications* (Netemeyer et al., 2003) and *Scale Development: Theory and Applications* (DeVellis, 2012). The focus of this chapter is how theory and validity are foundational in order to develop a survey to measure the latent construct of effective teacher efficacy. According to Netemeyer et al. (2003), “for measures of a latent construct to have relevance in [research], the latent construct should be grounded in a theoretical framework” (p. 7). Theory and validity work together in a measurement, which intertwine to where “the relevance of a latent construct largely depends on its ‘construct validity’” (Netemeyer, 2003, p. 8). Cronbach and Meehl, as cited in Clark and Watson (1995), suggest three steps to validating an instrument: “(a) articulating a set of theoretical concepts and their interrelations, (b) developing ways to measure the hypothetical constructs proposed by the theory, and (c) empirically testing the hypothesized relations among constructs and their observable manifestations” (p. 3). The following will describe how the research design aligns with the theories of instrument development and effective teacher efficacy. It will go into further detail of the item pool

development, sample and population, pilot survey, expert reviewers, Effective Teacher Efficacy Survey (ETES), and data analysis.

Participants

The population for this study included all elementary (K-8), secondary (5-12), and K-12 education pre-service teachers in Montana. All pre-service teachers that complete their Montana Board of Education-approved TEP are expected to obtain initial licensure at the end of their program and begin their career as effective teachers. Pre-service teachers who graduate and receive certification to teach are considered highly qualified teachers according to state and federal definitions (OPI, 2010).

The sample for this study included elementary, secondary, and K-12 pre-service teachers, practicum students, and teacher candidates from TEPs in institutions of higher education in Montana. Practicum students and teacher candidates were surveyed in the second half of the fall and spring semesters in order to maximize their development in the student teaching experience.

Item Pool Development

Danielson's *Framework for Teaching* is the theory which drove the development of items in the survey. The items were developed to assess the latent construct of effective teacher efficacy. The literature review of the framework for effective teaching, teacher efficacy, and survey development inform the item pool development. Research suggests the scale should have identified objectives, which drive the development of all

constructs in the survey (Fink, 2003; Gay, Mills, & Airasian, 2009). The research objective of the survey was to provide a valid and reliable instrument that measures the latent construct of effective teacher efficacy of pre-service teachers. The following domains provided dimensionality of the construct and scale: (1) *Planning and Preparation*, (2) *Classroom Environment*, (3) *Instruction*, and (4) *Professional Responsibilities* (Danielson, 2007). Multiple items were developed within each domain to validly assess the construct. Wording redundancy was used in each domain “such that the content domain of the construct is being tapped differently” (Netemeyer et al., 2003, p. 98). All items were positively worded and used a multichotomous scale format that had five scale points (Netemeyer et al., 2003, p. 99).

Constructing a questionnaire that was “attractive, brief, and easy to respond to” was important to receive a sufficient number of responses (Gay, Mills, & Airasian, 2009, p. 178). Research suggests a survey should include the items that align with the instrument’s objective, collect demographic information to conduct research among subgroups, and each question must address *one* concept (Gay, Mills, & Airasian, 2009). The Danielson Framework (2007) provided the theory needed to construct items of teacher effectiveness that were clear and concise. Wording familiar to pre-service teachers and that align with the *Framework for Teaching* (2007) enhanced the clarity of each item. The survey consisted of structured, closed-ended items (Gay, Mills, & Airasian, 2009). Subsections that aligned with the framework were used during the development of the instrument.

The survey was divided into four subsections aligned with the four domains of *Framework for Teaching* (2007). The items in each subsection aligned with the components of each domain. The constructs each domain measured provided information of pre-service teachers' efficacy of effective-teaching knowledge and skills. InTASC standards were used to determine the alignment of the FFT to TEPs. All domains and components of the FFT aligned with one or more InTASC standards (see Appendix A).

The first survey referred to as Effective Teacher Efficacy Survey 1.0 (Appendix B) had items under the four domains of the FFT. There were 10 to 15 items that addressed each of the four domains. Each item used a Likert-scale with the scale points being Exactly true, Mostly true, Moderately true, Hardly true, and Not at all true. The survey was formatted into an online form and the link sent through an email to pre-service teachers.

Pilot survey

The survey was inputted into a Google Form to allow for electronic responses. The pilot survey (Effective Teacher Efficacy Survey 1.0) contained 49 items that tapped into the four different dimensions of effective teacher efficacy. Pre-service teachers responded by indicating how true they thought the statement was for them using a Likert-scale of Exactly true, Mostly true, Moderately true, Hardly true, and Not at all true. An example of a survey item was: "I can plan lessons that relate important concepts from other disciplines." Additional items supported the face and content validity of the survey. The same two items followed each efficacy survey item: the question, "Was this item

understandable?” and a space for participants to write comments about that specific efficacy item. At the end of the survey, pre-service teachers were asked whether or not the multichotomous scale was adequate when responding to the items, whether or not the items were written so there was only one possible answer, and to provide any additional comments on the survey.

A representative random sample of pre-service teachers ($n=25$) was contacted through email, which included a link to the Google form. Five reminder emails were sent after the initial email over a period of four weeks. There were a total of seven ($n=7$) responses to the survey. Eleven ($n=11$) surveys, using the paper-pencil method, were completed by a random sample of pre-service teachers in the elementary (K-8) and secondary (5-12), practicum I and elementary (K-8), and practicum II courses. In all, a total of 18 pre-service teachers completed the survey. The results of the survey were used to evaluate the face validity and clarity of the items in the survey. The criterion to delete an item on the survey was if three or more pre-service teachers responded that an item was not understandable. This approach resulted in two ($n=2$) items being deleted in the survey. Four ($n=4$) items were revised and reworded based on comments from participants. After the deletion or revision of survey items, seven ($n=7$) demographic questions were added to the beginning of the survey. These items included age, gender, race/ethnicity, class standing, teacher preparation area (K-8, 5-12, K-12), field experience, and current course enrollment.

Expert Review

In order to improve the validity of the instrument, a panel of experts reviewed the revised survey, Effective Teacher Efficacy Survey 1.1 (Appendix C) (Lux, 2010). They reviewed the items to ensure all ambiguous terms were defined, points of references were included when needed, no leading questions, no sensitive questions, and no assumptions in questions (Gay et al., 2009). The expert reviewers were selected based on their contributions to the fields of effective teaching, teacher evaluation, self-efficacy in education, and teacher education.

The experts who reviewed the Effective Teacher Efficacy Survey 1.1 were Anita Woolfolk Hoy (Ohio State University), Sally Valentina Drew (Central Connecticut State University), Terrell Peace (Huntington University), Walter S. Polka (Niagara University), Nancy P. Gallavan (University of Central Arkansas), and William F. Wright (Northern Arizona University). The backgrounds of each reviewer are as follows:

- Anita Woolfolk Hoy, Ph.D. – Dr. Woolfolk Hoy was born in Fort Worth, Texas, where her mother taught child development at TCU and her father was an early worker in the computer industry. All her degrees are from the University of Texas, Austin, the last one a Ph.D. She began her career in higher education as a professor of educational psychology at Rutgers University and then moved to Ohio State University in 1994. Today she is an Emeritus Professor of Educational Psychology and Philosophy at Ohio State. Anita's research focuses on students' and teachers' sense of efficacy. With students and colleagues, she has published over 80 books, chapters, and

research articles. Anita has served as Vice-President for Division K (Teaching & Teacher Education) of the American Educational Research Association and President of Division 15 (Educational Psychology) of the American Psychological Association. Her textbook, *Educational Psychology*, is moving into its 13th edition and has been translated in over 10 different languages. (Woolfolk Hoy, personal communication, 2013)

- Sally Valentino Drew, M.S. – Ms. Drew is an assistant professor of teacher education at Central Connecticut State University (CCSU) and university facilitator of CCSU's Professional Development School (PDS)'s relationship with a local district. Prior to joining CCSU in 2006, she taught at the preschool, intermediate, and high-school levels in Massachusetts and Connecticut. Sally Drew's current research focuses on science and STEM teachers' infusion of literacy, literacy strategy instruction, and writing in the disciplines. She regularly presents at national conferences and has authored several peer-reviewed articles and book chapters on disciplinary literacy. Currently she serves as a literacy consultant for several state and regional districts. She has consulted on literacy practices in Boston, Providence, and New York City. Sally's doctoral research was done at the University of Connecticut. She received her Dual BA in Public Relations and Women's Studies and MS in Elementary Education from Syracuse University. (Valentino Drew, personal communication, 2013)

- Terrell Peace, Ph.D. – Dr. Peace is the Director of Teacher Education and Education Department Chair at Huntington University in Huntington, Indiana. Dr. Peace has taught at Huntington University since 1998. Prior to that, he taught at the graduate level in Texas for 11 years. Dr. Peace is active in many organizations such as Association of Teacher Educators (ATE), Kappa Delta Pi, and The American Association of Colleges for Teacher Education. He served as the president of ATE in 2010-2011. Dr. Peace's recent publications include contributions to "Racism in the Classroom" (ATE/ACEI 2002) and "Effective Teacher Education: Exploring Connections Among Knowledge, Skills, and Dispositions" (Rowman & Littlefield, 2009). His areas of interest and investigation include differentiated instruction, neuroscience applied to learning, misguided educational reform, and leadership. (Peace, personal communication, 2013; Huntington University Education, 2013)
- Walter S. Polka, Ph.D. – Dr. Polka is a Professor, Department of Professional Programs, and Ph.D. Program Coordinator for Niagara University, New York. Dr. Polka was previously Associate Professor of Educational Leadership and Doctoral Program Coordinator for Georgia Southern University. Prior to his career in higher education, Dr. Polka spent 37 years as a public-school high-school teacher, Curriculum Coordinator, and Assistant Superintendent for Curriculum and Instruction, and 13 years as Superintendent of Schools at Lewiston-Porter Central Schools, Youngstown, New York. He has published

several book chapters and research articles related to differentiation of instruction and curriculum planning and administration.

- Nancy P. Gallavan, Ph.D. – Dr. Gallavan is a professor of teacher education at the University of Central Arkansas (UCA). She has 20 years' experience in teacher education divided between UCA and the University of Nevada, Las Vegas (UNLV). She taught elementary and middle school for 20 years, primarily in the Cherry Creek School District in Colorado. She earned her M.A. from the University of Colorado and her Ph.D. from the University of Denver. Nancy specializes in social studies education, multicultural education, and classroom assessments. She has more than 120 publications, is active in several educational organizations, and has received awards for her teaching, research, and service. Nancy served as the Chair of the Commission on Teacher Self-Efficacy for the Association of Teacher Educators (ATE) and as the President of ATE in 2013-14.
- William F. Wright, Ed.D. – Dr. Wright is a professor of educational leadership at Northern Arizona University (NAU). He is the director of the NAU/AZ School Risk Management Academy and NAU Administrator Internship Program. Dr. Wright has spent over 40 years in education as a high-school teacher, principal, and superintendent. In his 20 years as a superintendent in Arizona, he received the Arizona Superintendent of the Year award twice, received the Arizona School Administrators Association Distinguished Superintendent Award, was nominated for National

Superintendent of the Year, and was named one of the top three superintendents in North America by *Master Teacher*. Dr. Wright has presented at state and national conferences, has co-authored several books, and has over 75 published articles.

Expert reviewers were asked to respond to the relevance, clarity, and conciseness using a Likert-scale of Very strong, Strong, Weak, and Very weak. The Effective Teacher Efficacy Survey 1.1 was administered through Google Forms. The 47-item survey form allowed experts to add additional comments for each item. Experts were emailed the link to the website along with a table of specifications that aligned each item to the appropriate component of the FFT (Appendix C). The experts reported their ratings and comments via the Google Form. Overall, 23 items were revised based on their feedback. None of the items were deleted because nearly all items were rated Strong to Very strong. In instances where an expert reported an item as Weak in the areas of Relevance, Conciseness, and Clarity, the expert provided specific feedback on recommendations of what to add to the item to make it Strong or Very strong. The final item pool, after revisions, was used as the final version of the survey that was administered to pre-service teachers.

Effective Teacher Efficacy Survey 2.0

After the pilot survey face and content validity analyses were completed, the adjusted instrument was distributed to a sample population of teacher candidates and practicum students to determine the effective teacher efficacy of pre-service teachers in

TEPs. The final Effective Teacher Efficacy Survey 2.0 (Appendix D) included the pilot survey participants' feedback and recommendations of the expert reviews. The updated survey was in an electronic format using Google Forms and in a paper-pencil format. The survey using Google Forms was administered to the campus email addresses of the sample population of pre-service teachers. The paper-pencil format was administered to practicum I (K-8), practicum II (K-8), and practicum 5-12 in their class meeting. It was also administered in paper-pencil format to a small group of pre-service teachers who met on campus the last week of the semester. The target sample size was 200 pre-service teachers enrolled in either student teaching, practicum I (K-8), practicum II (K-8), or practicum 5-12 in a TEP.

Data Analysis

Validity

The literature review, pilot survey, expert review, and final survey helped to establish the instrument's validity (Lux, 2010). The content and face validity of the instrument consisted of a collection of evidence from pre-service teachers, teacher candidates, and expert reviewers. The process and results of the validity analysis suggest the instrument is valid. The FFT provided the framework for item design, and InTASC standards aligned those items to TEP standards and accreditation. Pre-service teachers had to respond to the understandability of each item in the pilot survey (1.0). The survey was revised based on their feedback. Six experts in teacher education and teacher efficacy then reviewed the revised survey (1.1) and rated each item's clarity, conciseness, and

relevance. This analysis of the items on the instrument (1.0 and 1.1) provided face and content validity as described in Netemeyer et al. (2003). Qualitative feedback from participants through written responses on the pilot survey (1.0) and expert review (1.1) also improved the validity of the survey.

Reliability

Cronbach's alpha analysis was used to determine the reliability of the items in the survey. An item above 0.70 was considered a good item (Lux, 2010; Sonquist & Dunkelberg, 1977). An item below 0.60 was considered a poor item and was deleted (Netemeyer et al., 2003; Lux, 2010). Items for the revised survey were selected based on the above analyses.

The final data analysis included a coefficient alpha and factor analysis to determine the validity and reliability of the final instrument (Fink, 2003). The reliable and valid final instrument allowed for further insight of the effective teacher efficacy of pre-service teachers in TEPs.

The results of the survey addressed several questions about effective teacher efficacy in pre-service teachers. The research determined which components of the FFT and InTASC pre-service teachers perceive they are able to do effectively as teachers. TEPs can use the findings to strengthen and improve areas within the program that foster increased teacher-efficacy. The levels of reported efficacy can bring attention to particular strengths or weaknesses in a TEP and may inform program improvement. The results may inform the expectations of first-year teachers in K-12 districts and may influence K-12 district mentoring programs. It may also facilitate discussion between the

school districts and TEPs on how to bridge the expectations and performance levels of a teacher candidate to a first-year effective (highly qualified) teacher.

Delimitations

1. The study was conducted in the fall semester at Montana State University-Bozeman and then, in the spring semester, it was conducted at Montana State University-Bozeman, Montana State University-Billings, University of Montana, and Carroll College.
2. Data was collected after the midterm point of each semester.

Limitations

1. Sample of the study was limited to the population of elementary, secondary, and K-12 teacher candidates and practicum students enrolled at Montana State University-Bozeman, Montana State University-Billings, University of Montana, and Carroll College.
2. Some teacher candidates and practicum students may have transferred and did not complete their entire TEP at their identified university.
3. Elementary teacher candidates have at least two semesters of field experience opposed to secondary and K-12 teacher candidates who only have one semester prior to student teaching.
4. The quality of cooperating teachers was not guaranteed as the TEP cannot require training.

5. The different TEPs may have different training provided for field experiences for cooperating teachers.

Timeframe

2013

September	Sent proposal to International Review Board at MSU
October	Pilot survey
October	Expert review of instrument
October	Proposal meeting
November	Effective teacher efficacy study

2014

January – May	On-going data collection and analysis
October	Full dissertation to committee for final revisions
October	Dissertation defense
December	Graduation

Summary

When teacher candidates complete their student teaching experience, graduate, and begin their first-year teaching, they are expected to demonstrate the complexities of effective teaching from day-one and continue their professional development within those areas. The purpose of this survey research was to develop an instrument that can measure the effective teacher efficacy of pre-service teachers throughout their TEPs. Research suggests that high levels of efficacy in teachers produce highly effective teachers. The

researcher anticipated that the instrument developed in this study could be used to measure effective teacher efficacy levels in pre-service teachers and strengthen the transition from pre-service teacher to in-service teacher.

Chapter Three described the methodology of the study. It included descriptions of the population, sample, item development, questionnaire design, research design, and data analysis, which included the validity and reliability analyses of the instrument. The data analysis is described in Chapter Four.

CHAPTER FOUR

DATA ANALYSES AND FINDINGS

Introduction

Chapter Four is arranged to describe the results and findings of the instrument development to measure teacher efficacy levels of pre-service teachers. The different areas within this chapter are used to organize the qualitative and quantitative analyses conducted in this study. The qualitative data consists of written feedback from pre-service teachers and expert reviewers in the areas of understandability, clarity, conciseness, and relevance to teacher efficacy and the FFT. The quantitative data presented is through a descriptive analysis of the sample population, Cronbach Alpha's reliability analysis, and exploratory and confirmatory factor analysis.

Data Analysis Methodology

Survey research methods were used to develop the Effective Teacher Efficacy Survey 2.0. The literature review, Effective Teacher Efficacy Survey 1.0 pilot survey, and expert reviews were used to develop the final version of the survey, Effective Teacher Efficacy Survey 2.0. The initial set of items for the survey (1.0) was developed in alignment to the FFT, and the initial draft of the survey was administered and revised as version 1.1 based on the feedback from the sample of pre-service teachers. Effective Teacher Efficacy Survey 1.1 was administered to the expert reviewers and revised based on their recommendations. The final version of the survey (2.0) was administered to the

sample population. Statistical analysis was completed using IBM SPSS Statistics Version 20 (IBM Corp, 2011).

The item pool for the survey was created based on the literature review and FFT. The Effective Teacher Efficacy Survey 1.0, the pilot survey, contained 49 items aligned with the four domains of the FFT (see Appendix C). The items for the survey were selected to “sample systematically all content that is potentially relevant to the target construct” (Clark & Watson, 1995, p. 311; Netemeyer, et al., 2003).

The 49-item pilot survey (1.0) was pretested using three different respondent groups. The first group of respondents was a random sample of pre-service teachers (n=20). Due to the low number of initial responses (4), it was decided to seek practicum I, II, and secondary practicum responses (n=15). The focus of this pretest was to judge the content and face validity of the survey (Netemeyer, et al., 2003). All respondents were asked to respond to each survey item, respond to the understandability of each item, and respond to the ease of using the survey (Visser, Krosnick, Lavrakas, 2000).

A total of 18 pre-service teachers completed the Effective Teacher Efficacy Survey 1.0. The survey was delivered in two formats: an electronic Google Form and a paper-and-pencil form. The electronic version of the form was used with pre-service teachers (elementary, secondary, and K-12) via email because they were in their student-teaching placements. Practicum I, II, and secondary practicum students were randomly selected to take the paper-and-pencil format of the survey during their course meeting.

The survey contained 49 questions that asked the students to respond (1) Not at all true, (2) Somewhat true, (3) Moderately true, (4) Mostly true, and (5) Exactly true. In

addition to those responses, participants were asked if the item was understandable, and they were provided a place to write additional feedback for each item. They were also provided a space at the end of the survey to provide overall feedback.

A total of 15 pilot surveys were administered using the paper-pencil method to pre-service teachers in practicum I, practicum II, and secondary practicum. Eleven surveys were completed and returned to the researcher. Reminders were routinely emailed to pre-service teachers during the two-week pretest data collection. Three additional pre-service teachers responded, which made a total of seven pre-service teacher responses to the survey.

Pre-service teachers responded to the majority of the items as (4) Mostly true and (5) Exactly true. There were two items where more than 10% of the responses reported an item was not understandable. After review of the comments in response to each item, in addition to any selection of “not understandable,” the researcher deleted items #1 and #29, reducing the total items to 47. Item #1 was reported by 33% ($n=6$) of the sample not to be understandable; the researcher deleted that item to provide better clarity. Item #29 was reported by 17% ($n=3$) of the sample not to be understandable and not observable in field experience. That item was also deleted to provide better clarity and relevance to FFT and pre-service teacher development. Sixteen percent of the respondents commented that the survey was too long. However, the researcher did not reduce the number of items because the survey development research suggests a larger initial item pool to ensure each domain is well represented with at least 10 items per domain to accurately measure the construct (Clark & Watson, 1995; Moore & Benbasat, 1991; Netemeyer, et al., 2003).

Additional comments from participants included three that expressed they needed more experience teaching ($n=4$) or that some questions did not apply as a pre-service teacher ($n=1$). One participant commented that each situation is different. One participant stated that the survey was revealing of how well pre-service teachers are prepared for the classroom. Another participant ($n=1$) stated the items were “fuzzy,” but then answered that each item was understandable throughout the survey and gave no other feedback. Based on the feedback (quantitative and qualitative) provided by all respondents, the survey was revised and updated as the 47-item version 1.1. This version was used in the expert review as described below.

Expert Review

Eleven experts were asked to review the Effective Teacher Efficacy Survey 1.1 to improve the content and face validity of the instrument. Six experts agreed to review and did provide feedback on the survey. The expert review participants consisted of Anita Woolfolk Hoy (Ohio State University), Sally Valentina Drew (Central Connecticut State University), Terrell Peace (Huntington University), Walter S. Polka (Niagara University), Nancy P. Gallavan (University of Central Arkansas), and William F. Wright (Northern Arizona University). The backgrounds of each reviewer are presented in Chapter Three.

The six expert reviewers were sent three items via email. Two attachments were sent: Table of Specifications (Appendix C) for content validity and a pdf of the revised survey to review face validity (Appendix D). The third item was a link embedded in the body of the email that directed the expert reviewer to the Google Form, which form

allowed the expert to provide feedback on each item's clarity, conciseness, and relevance to the FFT. There was also a comment box with each item to allow the expert to provide additional feedback and, at the end of the form, there was a box for experts to comment on the overall survey.

One expert reviewer reported the relevance, clarity, and conciseness of item #1 as being weak and very weak. Another reviewer reported the clarity as weak, and a third reviewer wrote that it was not clear if the item was addressing elementary or secondary pre-service teachers and whether or not the lessons meant interdisciplinary lessons. Each participant provided detailed feedback on that question; therefore, the researcher used that information to revise the item to improve its relevance, clarity, and conciseness.

All other reviewers' comments consisted of minor changes to add/change a word, or add/change a punctuation mark to improve clarity. These changes were made only when the researcher determined the change strengthened the item's alignment with the FFT. A total of 24 items were enhanced through an addition of a descriptive word or change to a punctuation mark. The survey was revised to Effective Teacher Efficacy 2.0.

Effective Teacher Efficacy 2.0

Following the expert review, the revised survey, Effective Teacher Efficacy 2.0, was delivered after the midterm point in the semester to teacher candidates through email, and the paper-and-pencil version was delivered to pre-service teachers in practicum I, practicum II, and to an end-of-the-semester course where a small portion of teacher candidates meet on the university campus. A total of 155 paper-and-pencil surveys were

given to the instructors of all three courses to give during class time. Additional teacher candidates who did not respond to the pretest random sample (n=80) were emailed a link to the Google Form to complete Effective Teacher Efficacy Survey 2.0.

Participants' Descriptive Analysis

SPSS version 20 was used to determine the descriptive statistics of the sample size. The following is a summary of the sample of pre-service teachers who completed the Effective Teacher Efficacy Survey 2.0.

The initial sample consisted of 270 pre-service teachers. First, an ANOVA was conducted to determine if there were significant differences between the sample size groups. This analysis identified the group Secondary Practicum as significantly different between groups ($f= 4.03, p<. 008$); therefore, secondary practicum students were removed from the final data set. The final sample used for data analysis totaled 216 pre-service teachers. Forty-five pre-service teachers were enrolled in practicum I; 25 pre-service teachers were enrolled in practicum II; 69 pre-service teachers were enrolled in student teaching, and 77 pre-service teachers did not report what course they were taking at the time of the survey. One hundred seven pre-service teachers reported their teacher preparation area was elementary (K-8); 32 reported secondary (5-12); 13 reported K-12; 64 did not report their preparation area.

One hundred sixty-seven pre-service teachers were female, 45 were male, and four did not report. Over 15% of the respondents (n=32) were juniors, 77% were seniors (n=167), 7% were post-baccalaureate (n=15), and 1% did not report (n=2). Participants

self-identified as 18-22 years of age (n=109), 23-27 years of age (n=75), 28-32 years of age (n=7), 33-37 years of age (n=12), 38-42 years of age (n=7), 43-47 years of age (n=1), 48 or older (n=2), and three (n=3) did not report. Eighty-five percent of the pre-service teachers self-identified as 2% as American Indian or Alaskan Native (n=4), 2% as Asian/Pacific Islander (n=3), 1% Black or African American (n=1), 2% as Hispanic American (n=4), White/Caucasian (n=183), 3% as Multiple Ethnicity (n=6), 1% as Other (n=1), and 7% did not self-identify (n=14). Descriptive statistics for the sample are displayed in Table 4.1.

Table 4.1
Demographic Characteristics as a Percentage of the Sample (Number in Parentheses)

	Percent	(n)
Course		
Practicum I	21	(45)
Practicum II	12	(25)
Student Teaching	32	(69)
Not Reported	36	(77)
Gender		
Female	77	(167)
Male	21	(45)
Not Reported	2	(4)
Class Standing		
Junior	15	(32)
Senior	77	(167)
Post-baccalaureate	7	(15)
Not Reported	1	(2)
Teacher Preparation Area		
Elementary (K-8)	50	(107)
Secondary (5-12)	15	(32)
K-12	6	(13)
Not Reported	38	(64)

Table 4.1 Continued

	Percent	(n)
Age		
18-22	51	(109)
23-27	35	(75)
28-32	3	(7)
33-37	6	(12)
38-42	3	(7)
43-47	1	(1)
48 or older	1	(2)
Not Reported	1	(3)
Race		
American Indian or Alaskan Native	2	(4)
Asian/Pacific Islander	2	(3)
Black or African American	1	(1)
Hispanic American	2	(4)
White/Caucasian	85	(183)
Multiple Ethnicity	3	(6)
Other	1	(1)
Not Reported	7	(14)

Preliminary Instrument Analysis

Mean scores of the overall instrument and individual items were examined to determine and establish the descriptive analysis and normality of the 47-item survey (Netemeyer, Bearden, Sharma, 2003). The skewness and kurtosis of the total mean score of the 47-item survey was examined to determine the instrument normality (Mertler & Vanatta, 2010). The skewness (skewness = -0.334, SE = 0.166) and kurtosis (kurtosis = -0.348, SE = 0.330) support that there was a normal distribution of mean scores, as both scores are close to zero. Descriptive statistics, mean and standard deviation, for the 47 individual survey items are included in Table 4.2.

Overall, pre-service teachers reported they believe all statements to be moderately true to mostly true. The mean score of each item identified that pre-service teachers

reported they believed it moderately true that they could do items 3, 5, 10, 15, 18, 19, 25, 29, 30, 31, 32, and 40. The mean score of all other items in the survey identified that pre-service teachers believed it mostly true that they could do what was described in the item.

Table 4.2
Descriptive Statistics for Individual Survey Items

Item	M	SD
Domain 1 – Planning and Preparation		
1. I can plan lessons that connect important concepts from multiple content areas.	4.17	.570
2. I can plan lessons that connect common concepts within a content area.	4.27	.531
3. I can anticipate student misconceptions in the content when I plan lessons.	3.63	.608
4. I can use ongoing assessments of all students to inform my planning.	4.00	.629
5. I can use knowledge of student differences (cognitive, emotional, social) to plan ways to actively engage students in learning.	3.90	.618
6. I can integrate several methods of assessment in my planning that will measure instructional outcomes.	4.02	.606
7. I can design lessons that lead students to meet instructional goals.	4.38	.511
8. I can design instructional experiences that engage students at high-levels of thinking.	4.16	.612
9. I can develop lessons that integrate student choice in activities.	4.12	.675
10. I can develop a clear assessment plan to measure all instructional outcomes.	3.90	.744
Domain 2 – The Classroom Environment		
11. I can create and manage an environment where students respect me as their teacher.	4.18	.828
12. I can create and manage an environment where students are respectful to each other.	4.14	.736
13. I can create an environment where students take intellectual risks.	3.79	.807
14. I can create a classroom environment which students identify as a place for thinking and learning.	4.16	.711
15. I can create an environment where students assume responsibility for completing high quality work.	3.91	.772
16. I can develop consistent routines and easy-to-follow procedures to maximize instructional time.	4.12	.819
17. I can communicate the routines and procedures of a classroom so students will understand.	4.22	.704

Table 4.2 Continued

Item	M	SD
18. I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g., students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).	3.97	.778
19. I can establish the expectation that students are responsible for monitoring their own behaviors.	3.91	.802
20. I can use resources effectively in the physical space of my classroom (e.g., whiteboards, technology, reading centers).	4.32	.736
21. I can arrange the physical space of the classroom to support instructional goals.	4.24	.782
22. I can communicate learning goals to students.	4.30	.678
Domain 3 - Instruction		
23. I can provide clear directions to students so they know what to do without my direct supervision.	4.01	.702
24. I can find ways to connect students' interests to different concepts being studied.	4.01	.695
25. I can use a variety of questions to advance high-level thinking, speaking, and writing while teaching (e.g., asking high-order questions, not just recall).	3.94	.773
26. I can design learning tasks and activities that require complex thinking by students.	4.01	.756
27. I can challenge and encourage students to explain their thinking.	4.32	.690
28. I can incorporate opportunities for students to serve as resources for one another.	4.06	.772
29. I can make students aware of assessment criteria and involve them in defining criteria for particular assignments.	3.74	.817
30. I can use a variety of forms of feedback to focus on student improvement.	3.91	.778
31. I can facilitate students' uses of peer feedback for student improvement.	3.71	.869
32. I can facilitate students' uses of self-assessments and self-monitoring.	3.66	.771
33. I can provide high-quality feedback to students.	4.27	.740
34. I can be flexible and differentiate an activity when teaching, even if the differentiation was not included in the lesson planning.	4.15	.799
35. I can extend or shorten a lesson when necessary using evidence of student learning.	4.22	.756
36. I can make unplanned adjustments to a lesson to support individual students.	4.24	.782

Table 4.2 Continued

Item	M	SD
Domain 4 – Professional Responsibilities		
37. I can make a thoughtful and accurate assessment of a lesson’s effectiveness using specific examples as evidence (e.g., student work, student learning, student performance, student engagement).	4.11	.710
38. After teaching a lesson, I can evaluate and analyze its assessments, effectiveness, and the outcomes achieved.	4.21	.798
39. I can effectively maintain information on student completion of assignments, student progress in learning, and non-instructional records (e.g., guardian consent forms).	4.18	.738
40. I can regularly communicate with families in a way that is sensitive to their culture.	3.89	.877
41. I can support and cooperate with other teachers.	4.52	.630
42. I can take on a leadership role in a school or district (e.g., share ideas of effective teaching strategies with other teachers, volunteer to participate in school events, participate in district projects).	4.05	.806
43. I can solicit feedback from supervisors or other teachers to improve my practice.	4.41	.682
44. I can seek out and get involved in activities that contribute to my professional development and to the profession of teaching (e.g., attending optional teacher workshops or teacher conferences, taking a leadership role on the curriculum mapping committee).	4.32	.789
45. I can hold and maintain the highest standards of honesty, integrity, and confidentiality.	4.75	.512
46. I can be proactive in serving students, searching out resources when necessary.	4.58	.640
47. I can fully comply with school and district regulations.	4.71	.539

Factor Extraction

A principal component analysis (PCA) was used to examine the dimensionality of the 47-item survey, Effective Teacher Efficacy 2.0. Netemeyer, Bearden, and Sharma (2003) suggest exploratory factor analyses are used for two primary reasons. The first is to “reduce the number of items in a scale so that the remaining items maximize the explained variance in the scale and maximize the scale’s reliability” (Netemeyer, Bearden, & Sharma, 2003, p. 121). The second purpose for using an exploratory factor

analysis is to “identify potential underlying dimensions in a scale” (Netemeyer, Bearden, & Sharma, 2003, p. 121).

A PCA was used to identify the underlying structure of the survey. Mertler and Vannatta (2010) recommend using PCA as the “preferred method of factor extraction, especially when the focus of an analysis searching for underlying structure is truly exploratory” (p. 234). Netemeyer, Bearden, and Sharma (2003) suggest the primary purpose of PCA is to reduce the variance of the items in a survey to the fewest components possible. A Varimax rotation with Kaiser Normalization was used in the PCA to identify the simplest structure (Netemeyer, Bearden, & Sharma, 2003). The items that showed little variance and cross-loading were deleted. Items that showed substantial loading as indicated by 0.40 and above were retained based on the recommendation of Netemeyer, Bearden, & Sharma (2003). The seven constructs identified through the analysis included: *Classroom Environment*, *Professional Responsibilities*, *Student-Centered Assessments*, *Critical Thinking*, *Unanticipated Changes in Plans*, *Student-Centered Planning*, and *Connections in Planning*.

Mertler and Vannatta (2010) recommended the use of four criteria to determine the retention of items during a PCA and determine the most parsimonious model. One criterion recommends retaining all components with eigenvalues greater than one. The seven components in the PCA were greater than one; therefore all seven components were retained. The components did not meet the second criterion that recommends retaining components that explain at least a cumulative variance of 70%. The seven components in this PCA were within less than ten percent off, in that it explained 64% of

the total variance. The third criterion is to examine the scree plot to retain all components before the eigenvalues level off. In the scree plot of the PCA, the eigenvalues after component five level off; however, Mertler and Vanatta (2010) suggest the scree plot is only reliable when the sample size is greater than 250, and the sample size of Effective Teacher Efficacy Survey 2.0 was 216. The final criterion is the computation of the reproduced correlations. Mertler and Vannatta (2010) state that “if the number of correlations that are reasonably close...is small, it can be assumed that the model is consistent with the empirical data” (p. 235). The reproduced correlation matrix indicates that 121 (32%) have absolute values greater than 0.05.

Mertler and Vanatta (2010) suggest that Kaiser’s rule is an accurate way to determine components to retain when it is above the mean communality of 0.60, and they suggest that Bartlett’s sphericity test can support conducting a PCA if the variables are correlated and have something in common. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) for this analysis was 0.877. The Bartlett’s Test of Sphericity was significant ($p < 0.000$) at 2765.463. Item communalities are presented in Table 4.3 to provide further information of the variability of each variable explained by the factor (Mertler & Vanatta, 2010; Devellis, 2012).

Table 4.3
Communalities

	Item	Communality
1	I can plan lessons that connect important concepts from multiple content areas.	0.636
2	I can plan lessons that connect common concepts within a content area.	0.736
3	I can anticipate student misconceptions in the content when I plan lessons.	0.53

Table 4.3 Continued

	Item	Communality
4	I can use ongoing assessments of all students to inform my planning.	0.642
5	I can use knowledge of student differences (cognitive, emotional, social) to plan ways to actively engage students in learning.	0.545
6	I can integrate several methods of assessment in my planning that will measure instructional outcomes.	0.561
11	I can create and manage an environment where students respect me as their teacher.	0.639
12	I can create and manage an environment where students are respectful to each other.	0.735
15	I can create an environment where students assume responsibility for completing high quality work.	0.649
16	I can develop consistent routines and easy-to-follow procedures to maximize instructional time.	0.576
18	I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g., students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).	0.597
19	I can establish the expectation that students are responsible for monitoring their own behaviors.	0.530
25	I can use a variety of questions to advance high-level thinking, speaking, and writing while teaching (e.g., asking high-order questions, not just recall).	0.683
26	I can design learning tasks and activities that require complex thinking by students.	0.748
27	I can challenge and encourage students to explain their thinking.	0.671
29	I can make students aware of assessment criteria and involve them in defining criteria for particular assignments.	0.507
30	I can use a variety of forms of feedback to focus on student improvement.	0.554
31	I can facilitate students' uses of peer feedback for student improvement.	0.765
32	I can facilitate students' uses of self-assessments and self-monitoring.	0.705
34	I can be flexible and differentiate an activity when teaching, even if the differentiation was not included in the lesson planning.	0.59
35	I can extend or shorten a lesson when necessary using evidence of student learning.	0.759
36	I can make unplanned adjustments to a lesson to support individual students.	0.748

Table 4.3 Continued

	Item	Communality
42	I can take on a leadership role in a school or district (e.g., share ideas of effective teaching strategies with other teachers, volunteer to participate in school events, participate in district projects).	0.613
43	I can solicit feedback from supervisors or other teachers to improve my practice.	0.620
44	I can seek out and get involved in activities that contribute to my professional development and to the profession of teaching (e.g., attending optional teacher workshops or teacher conferences, taking a leadership role on the curriculum mapping committee).	0.669
45	I can hold and maintain the highest standards of honesty, integrity, and confidentiality.	0.665
46	I can be proactive in serving students, searching out resources when necessary.	0.615
47	I can fully comply with school and district regulations.	0.666

The rotated component matrix identified seven components: *Classroom Environment*, *Professional Responsibilities*, *Student-Centered Assessments*, *Critical Thinking*, *Unanticipated Changes in Plans*, *Student-Centered Planning*, and *Connections in Planning*. The seven items contributed to 64% of the total variance. The first component, *Classroom Environment*, was calculated as 33% of the total variance. The second component, *Professional Responsibilities*, was 8% of the total variance. The third and fourth components, *Student-Centered Assessments* and *Critical Thinking*, were 6% of the variance. The last three components, *Unanticipated Changes in Plans*, *Student-Centered Planning*, and *Connections in Planning*, were 4% of the total variance.

The construct validity for an instrument is “not assessed directly, but is inferred from evidence that the measure’s substantive scores perform as expected from...tests, as well as from the quality of the procedures that were employed in the development and validation of the measure” (Netemeyer, Bearden, Sharma, 2003, p. 71). The seven

components identified were named based on the common construct assessed within each factor of questions. The following are the names given for each component: *Classroom Environment* component consists of six items that are related to managing the environment through establishing respectful behavior, managing routines, and self-monitoring of behavior. The second component, *Professional Responsibilities*, includes items that relate to taking a leadership role within the school, collaborating with other teachers, and maintaining high standards in the workplace. The third component, *Student-Centered Assessments*, focuses on creating assessments that integrate student and peer feedback, as well as involving students in creating assessment criteria. *Critical Thinking* is the fourth component, which focuses on students explaining their thinking. The fifth component, *Unanticipated Changes in Plans*, includes items of understanding of flexibility and making adjustments during instruction. *Student-Centered Planning* is the sixth component, which contains items pertaining to the teacher considering student differences, common misconceptions, and assessments of student learning. The final component is *Connections in Planning*, which includes items focusing on creating connections to multiple content and common concepts within a content area. Instead of the four anticipated components of the survey, as aligned to the four domains of the FFT, the analysis identified seven loadings. The factor loadings for the Effective Teacher Efficacy Survey 2.0 items are described in Table 4.4.

Table 4.4
Factor Loadings for Effective Teacher Efficacy Survey 2.0

	1	2	3	4	5	6	7
12. I can create and manage an environment where students are respectful to each other.	.809	.173	.072	-.039	.101	.185	-.015
11. I can create and manage an environment where students respect me as their teacher.	.740	.091	.046	-.026	.180	.210	-.063
15. I can create an environment where students assume responsibility for completing high quality work.	.709	.039	.167	.224	.075	.121	.215
18. I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g., students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).	.667	.099	.248	.238	.122	.048	.090
19. I can establish the expectation that students are responsible for monitoring their own behaviors.	.629	.131	.234	.226	.140	.010	.303
16. I can develop consistent routines and easy-to-follow procedures to maximize instructional time.	.584	.131	.234	.226	.140	.010	.303
45. I can hold and maintain the highest standards of honesty, integrity, and confidentiality.	.007	.762	-.076	-.036	.171	.195	.100
47. I can fully comply with school and district regulations.	.093	.729	.015	.107	.334	.050	.030
43. I can solicit feedback from supervisors or other teachers to improve my practice.	.148	.727	.139	.198	.035	.030	.094
46. I can be proactive in serving students, searching out resources when necessary.	.079	.690	.099	.095	.205	.236	.126

Table 4.4 Continued

	1	2	3	4	5	6	7
44. I can seek out and get involved in activities that contribute to my professional development and to the profession of teaching (e.g., attending optional teacher workshops or teacher conferences, taking a leadership role on the curriculum mapping committee).	.265	.617	.375	.177	-.191	.013	-.096
42. I can take on a leadership role in a school or district (e.g., share ideas of effective-teaching strategies with other teachers, volunteer to participate in school events, participate in district projects).	.255	.570	.323	.267	-.146	-.162	-.012
31. I can facilitate students' uses of peer feedback for student improvement.	.148	.052	.816	.210	.074	.103	.123
32. I can facilitate students' uses of self-assessments and self-monitoring.	.168	.113	.785	.006	.164	.122	.086
30. I can use a variety of forms of feedback to focus on student improvement.	.252	.213	.576	.202	.173	.204	.014
29. I can make students aware of assessment criteria and involve them in defining criteria for particular assignments.	.184	.074	.545	.194	.333	.133	.068
26. I can design learning tasks and activities that require complex thinking by students.	.078	.184	.200	.763	.227	.183	.033
25. I can use a variety of questions to advance high-level thinking, speaking, and writing while teaching (e.g., asking high-order questions, not just recall).	.231	.074	.156	.719	.125	.258	.027

Table 4.4 Continued

	1	2	3	4	5	6	7
27. I can challenge and encourage students to explain their thinking.	.149	.293	.144	.693	.166	.084	.162
36. I can make unplanned adjustments to a lesson to support individual students.	.327	.185	.170	.192	.735	.025	.011
35. I can extend or shorten a lesson when necessary using evidence of student learning.	.226	.240	.273	.174	.733	.004	.092
34. I can be flexible and differentiate an activity when teaching, even if the differentiation was not included in the lesson planning.	.363	.119	.235	.338	.524	.024	-.003
4. I can use ongoing assessments of all students to inform my planning.	.086	.052	.132	.075	.107	.695	.338
3. I can anticipate student misconceptions in the content when I plan lessons.	.224	.113	-.070	.249	-.149	.615	-.001
6. I can integrate several methods of assessment in my planning that will measure instructional outcomes.	.093	.104	.359	.108	.120	.605	.142
5. I can use knowledge of student differences (cognitive, emotional, social) to plan ways to actively engage students in learning.	.349	.145	.201	.113	.014	.584	-.085
2. I can plan lessons that connect common concepts within a content area.	.018	.113	.026	.009	.081	.102	.840
1. I can plan lessons that connect important concepts from multiple content areas.	.318	.096	.245	.186	-.063	.172	.630

The next step in the analysis was to examine the revised, 27-item survey (Appendix E) and each construct identified. The coefficient alpha of the survey and each

construct was conducted to determine if alpha was maximized in the revised survey item. Coefficient alpha helps to support whether or not item wording is “simple and straightforward, that the items tap the content of the construct, and that the respondent derives the...intended meaning of the item” (Netemeyer, Bearden, & Sharma, 2003, p. 57). The analysis suggests that the “interrelatedness of scale length, average level of inter-item correlation, and the over-redundancy of item wording” is highly adequate at $\alpha = 0.918$. The coefficient alphas for each individual dimensions were also highly adequate for most constructs (*Classroom Environment*, $\alpha = 0.855$, *Professional Responsibilities*, $\alpha = 0.840$, *Student-Centered Assessments*, $\alpha = 0.820$, *Critical Thinking*, $\alpha = 0.800$, *Unanticipated Changes in Plans*, $\alpha = 0.825$, *Student-Centered Planning*, $\alpha = 0.683$, and *Connections in Planning*, $\alpha = 0.571$). DeVellis (2012) states that all items below 0.60 are not acceptable and items between 0.65 and 0.70 are minimally acceptable; items between 0.70 and 0.80 are respectable and items between 0.80 and 0.90 are very good. Therefore, according to DeVellis (2012), components *Classroom Environment* ($\alpha = 0.855$), *Professional Responsibilities* ($\alpha = 0.840$), *Student-Centered Assessments* ($\alpha = 0.820$), *Critical Thinking* ($\alpha = 0.800$), and *Unanticipated Changes in Plans* ($\alpha = 0.825$) have very good internal consistency. The *Student-Centered Planning* ($\alpha = 0.683$) component is considered minimally acceptable, and the *Connections in Planning* ($\alpha = 0.571$) component is unacceptable (DeVellis, 2012). Based on DeVellis (2012), all components were determined to have acceptable internal consistency except for the *Connections in Planning* ($\alpha = 0.571$) component.

Summary

The analysis of the reliability and validity of the Effective Teacher Efficacy Survey 2.0 was an important process in improving the instrument to better measure pre-service teachers' efficacy. The process of assessing content validity was done through the pilot survey (Appendix B) delivered to pre-service teachers and teacher candidates in the fall of 2013. Items were revised based on their feedback of understandability, relevance, and conciseness. The survey was renamed Effective Teacher Efficacy Survey 1.1 and provided to experts to provide an additional content validity assessment based on the understandability, relevance, and conciseness. The feedback provided through the expert analysis was used to revise the survey again to create the Effective Teacher Efficacy Survey 2.0.

Over 200 pre-service teachers completed the Effective Teacher Efficacy Survey 2.0. The final analyses evaluated the construct's loadings of the instrument and the internal consistency. Based on this data, the survey was reduced by 19 items, ultimately resulting in a total of 28 items with the strongest loadings in the principal component analysis (Appendix E). Those loadings were all identified as having good adequacy scores for internal consistency, except for the last construct of *Connections in Planning*.

CHAPTER FIVE

CONCLUSION TO THE STUDY

Chapter Five provides a discussion of the results of the research of the validity and reliability of the Effective Teacher Efficacy Survey 2.0. The methods and results are described to provide an overview of the process and findings. The implication of the results of the analysis to the theory and practice of developing effective teachers will be discussed. The limitations and delimitations will be identified and recommendations for further research will be made.

Introduction

Effective teaching is very complex, and developing into an effective teacher happens over a sustained period of time. However, in an age where teacher accountability is such a large component in education systems, teachers must be constantly improving and developing their effective-teaching skills. It then becomes the role of the teacher-education programs to facilitate this early growth and development at the beginning stages for pre-service teachers. That is why this research on the development of a survey instrument for pre-service teachers to identify their perceived growth and development as effective teachers is important to inform TEPs.

Danielson (2007) suggests that previous research to develop frameworks and models to describe effective teaching were inadequate because they were based on the belief that teachers only made decisions in their instruction based on their individual teaching style. As the FFT illustrates, teaching is much more complex in that it is not

only a teacher's style, but also student differences that can impact the decisions a teacher makes. Danielson (2007) writes:

Decisions about instructional strategies and learning activities involve matching the desired outcomes of a lesson or a unit...with the approaches selected. Not only should the instructional goals be worthwhile, but the methods and materials chosen should be appropriate for those goals and help students attain them. (p. 24)

The Effective Teacher Efficacy Survey 2.0 is a survey intended to assess these complexities through measuring pre-service teachers' self-efficacy of their ability to effectively teach the skills Danielson identifies in the framework (Danielson, 2007). The complex decisions that teachers make each day in the areas of *Planning and Preparation*, *Classroom Environment*, *Instruction*, and *Professional Responsibilities* are captured in different items in the survey and are aligned to the four domains of the FFT as well as InTASC standards. The experiences pre-service teachers bring to their teacher education are vast and include what they acquire both within the program and in the field (Evans & Tribble, 1986); however, effective-teaching skills and skill development are necessary no matter what classroom a pre-service teacher enters. This need for effective educators who are aware of their own abilities and understand the qualities of effective teachers is essential for the twenty-first-century classroom, teacher accountability, and their ongoing development as effective teachers (Marzano, 2012).

Conclusions

Two major understandings emerged from this research. The first was an in-depth understanding of effective teaching as it relates to pre-service teachers; the second understanding to emerge was that a survey instrument could measure teacher efficacy of

pre-service teachers. In addition to the understandings that emerged, two main objectives were met throughout the process. One objective of this research was to analyze the FFT to better understand the domains of effective teaching and how each component aligns to InTASC. The other objective of this study was to develop a valid and reliable survey instrument that measured pre-service teachers' effective teacher efficacy, which was aligned to the FFT. Through the validation and reliability analysis of the survey instrument, all objectives of the research were met.

This study sought to answer three questions:

1. What components of FFT and InTASC do pre-service teachers believe they are able to do effectively?
2. What components of FFT domains align with InTASC and TEPs' development of effective teachers?
3. Do the survey items accurately measure pre-service teachers' effective teacher efficacy in teaching skills and knowledge as identified in the FFT and InTASC?

A survey was created and subjected to the reliability and validation analysis process. This process included the design of survey items that aligned to the four domains of the FFT. The Effective Teacher Efficacy 1.0 was a 49-item, Likert-type scale survey designed to assess pre-service teachers' effective teacher efficacy aligned to the domains of the FFT. The survey was delivered to 18 pre-service teachers who were enrolled in their student teaching semester. All participants during this first phase of the item analysis provided feedback on each item's understandability. The survey was revised to

include 47 items (Effective Teacher Efficacy 1.1). Experts evaluated the Effective Teacher Efficacy 1.1 survey and provided feedback on the relevance, clarity, and conciseness of each item. Items were reworded and revised based on their feedback to become Effective Teacher Efficacy 2.0. Two hundred sixteen pre-service teachers responded to the survey. Analyses were run on the data, and items were removed that cross-loaded and that loaded less than 0.50. The survey was reduced to 27 items and seven components were identified for the survey (Netemeyer, Bearden, & Sharma, 2003).

Results from the analysis determined that there were seven components that emerged from this data. Of the four domains from the FFT (*Planning & Preparation*, *Classroom Environment*, *Instruction*, and *Professional Responsibilities*), the factors that emerged suggest that the designed items assessed teaching practice in greater detail. Factor loadings from the analysis identified that the items designed to measure *Classroom Environment* and *Professional Responsibilities* accurately measured the two original domains that aligned to the FFT from the pilot survey, Effective Teacher Efficacy 1.0. Items designed to measure the FFT component of *Instruction* suggested three different dimensions emerged, which are identified as *Student-Centered Assessments*, *Critical Thinking*, and *Unanticipated Changes in Plans* based on the common constructs of each component. The analysis of the *Planning and Preparation* from the original FFT and Effective Teacher Efficacy 1.0 suggests the emergence of two new components named *Student-Centered Planning* and *Connections in Planning* based on the construct of items from each factor. The mean score of each item identifies that pre-service teachers believe all statements to be moderately true to mostly true. The mean

score of each item identified that pre-service teachers reported they believed it moderately true that they could do items 3, 5, 10, 15, 18, 19, 25, 29, 30, 31, 32, and 40. The mean score of all other items in the survey identified that pre-service teachers believed it mostly true that they could do what was described in the item.

The second research question seeks to identify which components of the FFT align to the InTASC standards. The alignment of InTASC to FFT is included in Appendix A. The four domains of the FFT each have components that address the areas of effective teaching in more detail. A document analysis of the FFT and InTASC identified the alignment of each component of a domain and the InTASC standard. The results from the document analysis suggest a strong alignment between FFT and InTASC.

The third question considers the accuracy of the survey instrument as a measurement of pre-service teachers' effective teacher efficacy in teaching skills and knowledge as identified in the FFT and InTASC. The validity and reliability process of the instrument supports the accuracy of the survey measurement. A pilot survey was conducted to receive input on face validity of the survey. In addition, a group of expert reviewers provided feedback on each item based on the relevance, clarity, and conciseness. A principal component analysis was conducted after it was given to 216 participants. All items with strong loadings were retained and resulted in a 28-item survey. Cronbach's alpha suggests the instrument was reliable ($\alpha = 0.918$).

Implications of the Findings

There are three implications of this study that could impact the FFT, teacher education, and teacher evaluation. First, the Effective Teacher Efficacy Survey 3.0 (Appendix F) could be used as a reflective tool for pre-service teachers. The survey analysis identified seven factor loadings. In contrast to the FFT that provided the theoretical framework for the survey, Effective Teacher Efficacy survey 2.1 identifies several more areas of teaching as opposed to the four domains for the FFT.

As pre-service teachers continue to develop their reflective thinking in the areas of effective teaching, this tool could assist pre-service teachers and instructors in teacher education programs to more easily identify areas for improvement. Pre-service teachers struggle with understanding the complexities of teaching, so a survey that measures effective teaching in more components than the FFT four domains could support pre-service teacher reflective practice (Erdman, 1983; Maxie, 2001). It would identify the areas of effective teaching that are essential in the classroom, but at a level of complexity where pre-service teachers could understand and make improvements throughout their field experiences.

Instructors in teacher education could also use the survey with pre-service teachers. The data that are identified through pre-service reflections could be used to inform planning in courses, as well as changes in coursework necessary to support pre-service teachers at their appropriate developmental level. The surveys could provide greater insight into the appropriate coursework for pre-service teacher development. In the same way, it could be used to inform teacher-education program and curricula

improvements by identifying the coursework that supports the development of reflective pre-service teachers. This data could then be used to compare the impact of different teacher-education programs and curricula.

The second implication for this study is that the survey could provide triangulation for performance data collected during student-teaching placements. In current student-teaching placements, the most frequent data collected to assess a teacher candidate's performance are based on assessment from field supervisors and cooperating teachers. An additional point of data that measures a teacher candidate's effective teacher efficacy could provide greater insight into the perceptions of pre-service teachers in their final phase of the program. Triangulation could also include the field experience courses pre-service teachers take during their program. The data collected could help identify the strengths and weaknesses of field experiences and inform program improvements in providing quality field experiences to pre-service teachers (Desimone et al., 2013).

The third implication for this study is the theoretical framework for the survey. The results suggest that FFT domains need to be more closely refined if used at the pre-service teacher level. The factor model in the analysis supports that the FFT domains of *Planning and Preparation* and *Instruction* are too broad of dimensions to accurately measure effective teacher efficacy. This model suggests that the two FFT domains, *Planning and Preparation* and *Instruction*, could be broken into five components. The components suggest that pre-service teachers identify their effective teacher efficacy in the FFT domain of *Instruction* based on *Student-Centered Assessments*, *Critical Thinking*, and *Unanticipated Changes in Plans*. In addition, pre-service teachers

identified their effective teacher efficacy in the FFT domain *Planning and Preparation* in the areas of *Student-Centered Planning* and *Connections in Planning*. These two FFT domains need to be examined more closely to identify the complexities of *Planning and Preparation* and *Instruction*.

Limitations of the Study

The limitations are described in Chapter Three. After the study was completed, the researcher identified other limitations. The first limitation of the study was that the total participants in the survey totaled 216. Mertler and Vannatta (2010) recommend a sample size of at least 250 and, according to their suggested criteria in determining the number of factors to retain in an analysis, that sample size is necessary when examining eigenvalues and scree plot.

The second limitation of the study was the low number of the initial sample size (Mertler & Vannatta, 2010). Two things were done to increase the number of cases in the analysis. The first was to include both practicum students and teacher candidates; however, the fall semester data collection resulted in less than 150 cases. In an attempt to increase the number of responses, other institutions outside of Montana State University-Bozeman, were included in the data collection. The other three institutions were limited in that the sample was from only teacher candidates, and that it makes up 16% of the total responses. In order to collect a large sample size, these schools were included to increase the amount of survey responses to make the analysis more stable (Mertler & Vannatta, 2010; DeVellis, 2012). Pre-service teachers enrolled in practicum coursework and student teaching were included in the sample size in order to maintain a high number of

responses. The varied experiences of practicum students and teacher candidates could have impacted the overall results as they could be at different stages of development.

The third limitation is that all responses were from the pre-service teacher's perspective (Evans & Tribble, 1986). Although the survey indicated that all responses would be anonymous, the pre-service teachers could have reported high on the Likert-scale because that is what they believed their TEPs were expecting them to answer.

Several influences could contribute to the self-reported data, specifically for those in field experiences. The first influence is the field supervisor and cooperating teacher of the pre-service teachers. In order for a pre-service teacher to answer the survey items accurately, he or she needed to be given honest and constructive feedback about their performance from both the field supervisor and cooperating teacher. Secondly, the experience and effectiveness of the cooperating teacher and field supervisors as teachers could impact the support given to the pre-service teachers. These could contribute to a pre-service teacher's awareness of their true ability, which would lead to their self-report on the survey.

Recommendations for Further Research

There are several areas for further research based on the findings of this study. As evidence of effective teaching becomes more strongly connected to TEPs and K-12 school district accountability, it is important to understand the impacts on pre-service teachers and their effective-teaching skills. In order to develop teachers who are ready for the complexities of teaching in the classroom, it is important to understand how pre-service teachers perceive themselves as effective teachers. Research of effective pre-

service teacher efficacy is minimal at best, and the findings identified by the researcher provide groundbreaking insight to understanding the development of effective pre-service teacher efficacy that can serve as the foundation for further research. The researcher discovered that pre-service teachers see effective teaching in more areas than identified in FFT. Several recommendations are offered to better understand pre-service teachers' self-perceptions as effective teachers.

The first recommendation is to continue the validation study of the survey with a larger sample size. Mertler & Vannatta (2010) and DeVellis (2012) suggest that a sample size be at least 250. When considering the large initial item pool of 47 in Effective Teacher Efficacy Survey 1.1, Netemeyer, Bearden, and Sharma (2010) recommend "larger sample sizes in the 300 range are preferred" (p. 116).

The second recommendation is to examine the various populations that make up pre-service teachers. While this recommendation is related to increasing the sample size, it is focused on the importance of looking at population variables. Although data was collected on all these variables, a large sample size is needed for each. As there are several different influences that impact the development of effective teachers in a TEP, it could improve the understanding of effective teacher development to understand the differences at all levels (Tschannen-Moran & Hoy, 2007). Further research could examine practicum students who have one or two semesters of field experience before beginning the student-teaching semester. Pre-service teachers in different classes, content areas, and certification types could also be examined. In addition, the different

institutions could be examined to determine how each population of pre-service teachers self-report their effective-teaching beliefs.

The third recommendation is to reexamine the items in the final survey, Effective Teacher Efficacy Survey 2.0. The items that remained after the principal component analysis need to be reviewed for content and face validity to determine at what “degree to which elements of an assessment instrument are relevant to and representative of the targeted construct” (Haynes, Richard, & Kubany, 1995, p. 238). Then it is recommended to review the questions that were removed from the final survey to better understand why those items were removed.

The final recommendation is to extend the research to include first- and second-year teachers. Although pre-service teachers are given various supports to develop effective-teaching skills through field experiences and student-teaching experiences, being a full-time classroom teacher is different. First- and second-year teachers take on the full responsibility of the classroom and sustain it for the entire school year (Conway & Clark, 2003). Further research is needed to determine if their perception of their effective teaching changes because of the added responsibility and full-time commitment.

Summary

Chapter Five began with an introduction of effective teaching and the importance of the research. It described that the multidimensional construct of effective teaching is extremely complex and is often a challenge to fully assess in pre-service teacher development (Alger & Kopcha, 2009). While developing teaching skills, knowledge, and dispositions in pre-service teachers is a part of TEPs’ curricula, the focus on pre-service

teachers' self-reporting their beliefs of their effective-teaching practices is not a standard piece of evidence that is included as part of their program of study. An instrument to measure effective teacher efficacy of pre-service teachers is something that can provide a greater understanding of the development of effective teachers in TEPs.

The researcher developed a survey aligned to FFT and InTASC standards to assess pre-service teacher effective teacher efficacy. The research questions were revisited and answered in this survey. Findings identified that pre-service teachers reported effective-teaching efficacy in the components of *Classroom Environment*, *Professional Responsibilities*, *Student-Centered Assessments*, *Critical Thinking*, *Unanticipated Changes in Plans*, *Student-Centered Planning*, and *Connections in Planning*. The research aligning the FFT to InTASC standards is illustrated in Appendix A. It also showed that the instrument accurately measures effective teacher efficacy in the seven components identified in the principal component analysis.

There were three implications to this research. The first was that the Effective Teacher Efficacy Survey 3.0 could be used as a reflective tool for pre-service teachers. The tool could also be used as a way to triangulate data. It would be used with field-supervisor and cooperating-teacher evaluations and possibly any teacher performance assessments. The final implication is that FFT should be reviewed to determine how it could be used in pre-service teacher development.

The limitations of the study identified a need for an increased number of responses from pre-service teachers, low number of initial sample size, and that pre-service teachers provide their perspective. Although there were limitations to the

research, there are several areas recommended for further research. The first recommendation is to gather a larger sample size above 250. Secondly, the researcher recommends that differences in population be examined. For example, the research could analyze data based on field experience, class, and institution. The final recommendation is that the final survey items (Effective Teacher Efficacy Survey 2.1) should go through face and content validity tests to better understand the items that were identified in the seven components.

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APPENDICES

APPENDIX A

FRAMEWORK FOR TEACHING & INTASC ALIGNMENT

Constructs for Item Design		
FFT Domain	FFT Component	Alignment to InTASC Standard
Planning and Preparation	Demonstrating Knowledge of Content and Pedagogy	Standard 4: Content Knowledge
	Demonstrating Knowledge of Students	Standard 1: Learner Development
	Setting Instructional Outcomes	Standard 7: Planning for Instruction
	Demonstrating Knowledge of Resources	Standard 8: Instructional Strategies
	Designing Coherent Instruction	Standard 5: Application of Content
	Designing Student Assessments	Standard 7: Planning for Instruction
Classroom Environment	Creating an Environment of Respect and Rapport	Standard 3: Learning Environments
	Establishing a Culture for Learning	Standard 3: Learning Environments
	Managing Classroom Procedures	Standard 3: Learning Environments
	Managing Student Behavior	Standard 8: Instructional Strategies
	Organizing Personal Space	Standard 3: Learning Environment
Instruction	Communicating with Students	Standard 3: Learning Environment, Standard 7: Planning for Instruction, Standard 8: Instructional Strategies
	Using Questioning and Discussion Techniques	Standard 8: Instructional Strategies
	Engaging Students in Learning	Standard 3: Learning Environments & Standard 8: Instructional Strategies
	Using Assessment in Instruction	Standard 6: Assessment
	Demonstrating Flexibility and Responsiveness	Standard 5: Application of Content, Standard 7: Planning for Instruction

Professional Responsibilities	Reflecting on Teaching	Standard 9: Professional Learning and Ethical Practice
	Maintaining Accurate Records	Standard 7: Planning for Instruction
	Communicating with Families	Standard 10: Leadership and Collaboration
	Participating in a Professional Community	Standard 10: Leadership and Collaboration
	Growing and Developing Professionally	Standard 9: Professional Learning and Ethical Practice, Standard 10: Leadership and Collaboration
	Showing Professionalism	Standard 9: Professional Learning and Ethical Practice, Standard 10: Leadership and Collaboration

APPENDIX B

EFFECTIVE TEACHER EFFICACY SURVEY 1.0

Effective Teacher Efficacy Study 1.0

Background: This survey is designed to help gain a better understanding of teacher efficacy of pre-service teachers. For this research, teacher efficacy is defined as a teacher's belief in their ability to affect engagement and performance of all students.

Participation is voluntary, and you can choose to not answer any question that you do not want to answer, and you can stop at anytime. Your participation or non-participation will not affect your grade or class standing.

The following items are part of a larger survey development to measure the levels of efficacy of pre-service teachers and their uses of effective teaching skills and knowledge.

Instructions: Please read each item carefully and rate to what extent you believe you can do the description in each item. In addition, please respond below each item to the understandability of each statement and provide any additional comments about the understandability of the question or any suggestions that may strengthen it.

Thank you for taking the time to complete this survey and share your thoughts.

Using the following scale, select the choice that is closest to how true you think it is for you.

5	4	3	2	1
Exactly true	Mostly true	Moderately true	Hardly true	Not at all true

How true do you think this is for you?			Was this item understandable?	Comments
—	1	I can plan topics important for students to understand in the content before they learn something new.	Yes No	
—	2	I can plan lessons that relate important concepts from other disciplines.	Yes No	
—	3	I can plan lessons that connect common concepts in a content area.	Yes No	
—	4	I can anticipate student misconceptions in the content when I plan lessons.	Yes No	

—	5	I can use ongoing assessments of all students to inform my planning.	Yes	No	
—	6	I can use student differences (cognitive, emotional, social) to plan ways to actively engage them in learning.	Yes	No	
—	7	I can integrate several methods of assessment in my planning that measure instructional outcomes.	Yes	No	
—	8	I can design lessons that meet instructional goals.	Yes	No	
—	9	I can design instructional activities that engage students at a high-level of thinking.	Yes	No	
—	10	I can develop lessons that integrate student choice in activities.	Yes	No	
—	11	I can develop a clear assessment plan to meet all instructional outcomes.	Yes	No	
—	12	I can create and manage an environment where students respect me as their teacher.	Yes	No	
—	13	I can create and manage an environment where students are respectful to each other.	Yes	No	
—	14	I can create an environment where students take intellectual risks.	Yes	No	
—	15	I can create a classroom environment where students know it is a place for thinking and learning.	Yes	No	
—	16	I can create an environment where students assume responsibility for completing high quality work.	Yes	No	
—	17	I can develop seamless routines and procedures to maximize instructional time.	Yes	No	

—	18	I can communicate the routines and procedures of a classroom so students will understand.	Yes	No	
—	19	I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g. students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).	Yes	No	
—	20	I can establish the expectation that students are responsible for monitoring their own behavior.	Yes	No	
—	21	I can use resources effectively in the physical space of my classroom (e.g. whiteboards, technology, centers).	Yes	No	
—	22	I can arrange the physical space of the classroom to support instructional goals.	Yes	No	
—	23	I can communicate learning goals with students.	Yes	No	
—	24	I can provide clear directions to students so they know what to do without my direct supervision.	Yes	No	
—	25	I can connect the content and concepts to student interest when I teach.	Yes	No	
—	26	I can use a variety of questions to advance high-level thinking, speaking, and writing (e.g. asking high-order questions, not just recall) while teaching.	Yes	No	
—	27	I can design learning tasks and activities that require complex thinking by students.	Yes	No	

—	28	I can challenge students to explain their thinking.	Yes	No	
—	29	I can promote student contributions in the exploration of important content.	Yes	No	
—	30	I can facilitate students serving as resources for one another during instruction.	Yes	No	
—	31	I can make students aware of assessment criteria and involve them in creating criteria.	Yes	No	
—	32	I can use a variety of forms of feedback to focus on student improvement.	Yes	No	
—	33	I can facilitate students' use of peer feedback for student improvement.	Yes	No	
—	34	I can facilitate students' use of self-assessments and self-monitoring.	Yes	No	
—	35	I can provide high-quality feedback to students.	Yes	No	
—	36	I can be flexible when teaching and adjust and differentiate an activity that is not planned in the lesson.	Yes	No	
—	37	I can extend or shorten a lesson when necessary based on evidence for student learning.	Yes	No	
—	38	I can make adjustments to the lesson when needed to assist individual students.	Yes	No	
—	39	I can make a thoughtful and accurate assessment of a lesson's effectiveness using specific examples.	Yes	No	
—	40	I can weigh the strengths of the assessments, lesson's effectiveness, and achieved lesson outcomes from a lesson I have taught.	Yes	No	

—	41	I can effectively maintain information on student completion of assignments, student progress in learning, and non-instructional records.	Yes	No	
—	42	I can frequently communicate with parents in a culturally sensitive manner.	Yes	No	
—	43	I can support and cooperate with other teachers.	Yes	No	
—	44	I can take on a leadership role in a school or district.	Yes	No	
—	45	I can solicit feedback from supervisors or other teachers to improve my practice.	Yes	No	
—	46	I can initiate engagement in activities that will contribute to my professional development and to the profession of teaching (e.g. taking a leadership role on the curriculum mapping committee).	Yes	No	
—	47	I can hold the highest standards of honesty, integrity, and confidentiality.	Yes	No	
—	48	I can be proactive in serving students, searching out resources when necessary.	Yes	No	
—	49	I can you fully comply with school and district regulations.	Yes	No	

Was the scale (Exactly true, Mostly true, Moderately true, Hardly true, Not at all true) adequate when responding to the survey items?	Yes	No
If no, please explain.		
Were the items written so there was only one answer possible?	Yes	No
If no, please explain.		

Additional comments on the survey:

APPENDIX C

TABLE OF SPECIFICATIONS

Framework for Teaching	Item #	Questions
<p align="center">Domain 1</p> <p>Planning and Preparation</p> <p>1a: Demonstrating Knowledge of Content and Pedagogy 1b: Demonstrating Knowledge of Students 1c: Setting Instructional Outcomes 1d: Demonstrating Knowledge of Resources 1e: Designing Coherent Instruction 1f: Designing Student Assessments</p>	1	I can plan lessons that relate important concepts from other disciplines.
	2	I can plan lessons that connect common concepts in a content area.
	3	I can anticipate student misconceptions in the content when I plan lessons.
	4	I can use ongoing assessments of all students to inform my planning.
	5	I can use student differences (cognitive, emotional, social) to plan ways to actively engage them in learning.
	6	I can integrate several methods of assessment in my planning that will measure instructional outcomes.
	7	I can design lessons that meet instructional goals.
	8	I can design instructional activities that engage students at a high-level of thinking.
	9	I can develop lessons that integrate student choice in activities.
	10	I can develop a clear assessment plan to measure all instructional outcomes.
<p align="center">Domain 2</p> <p>The Classroom Environment</p> <p>2a: Creating an Environment of Respect and Rapport 2b: Establishing a Culture for Learning 2c: Managing Classroom Procedures 2d: Managing Student Behavior 2e: Organizing Physical Space</p>	11	I can create and manage an environment where students respect me as their teacher.
	12	I can create and manage an environment where students are respectful to each other.
	13	I can create an environment where students take intellectual risks.
	14	I can create a classroom environment where students know it is a place for thinking and learning.
	15	I can create an environment where students assume responsibility for completing high quality work.
	16	I can develop seamless routines and procedures to maximize instructional time.
	17	I can communicate the routines and procedures of a classroom so students will understand.

	18	I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g. students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).
	19	I can establish the expectation that students are responsible for monitoring their own behavior.
	20	I can use resources effectively in the physical space of my classroom (e.g., whiteboards, technology, reading centers).
	21	I can arrange the physical space of the classroom to support instructional goals.
	22	I can communicate learning goals with students.
<p style="text-align: center;">Domain 3 Instruction</p> <p>3a: Communicating with Students</p> <p>3b: Using Questioning and Discussion Techniques</p> <p>3c: Engaging Students in Learning</p> <p>3d: Using Assessment in Instruction</p> <p>3e: Demonstrating Flexibility and Responsiveness</p>	23	I can provide clear directions to students so they know what to do without my direct supervision.
	24	I can connect the content and concepts to students' interests when I teach.
	25	I can use a variety of questions to advance high-level thinking, speaking, and writing (e.g., asking high-order questions, not just recall) while teaching.
	26	I can design learning tasks and activities that require complex thinking by students.
	27	I can challenge students to explain their thinking.
	28	I can incorporate opportunities in my instruction for students to serve as resources for one another.
	29	I can make students aware of assessment criteria and involve them in creating criteria.
	30	I can use a variety of forms of feedback to focus on student improvement.
	31	I can facilitate students' use of peer feedback for student improvement.
	32	I can facilitate students' use of self-assessments and self-monitoring.
	33	I can provide high-quality feedback to students.
	34	I can be flexible when teaching and adjust and differentiate an activity that is not planned in the lesson.
	35	I can extend or shorten a lesson when necessary based on evidence for student learning.

	36	I can make adjustments to the lesson when needed to assist individual students.
Domain 4 Professional Responsibilities 4a: Reflecting on Teaching 4b: Maintaining Accurate Records 4c: Communicating with Families 4d: Participating in a Professional Community 4e: Growing and Developing Professionally 4f: Showing Professionalism	37	I can make a thoughtful and accurate assessment of a lesson's effectiveness using specific examples.
	38	I can weigh the strengths of the assessments, lesson's effectiveness, and achieved lesson outcomes from a lesson I have taught.
	39	I can effectively maintain information on student completion of assignments, student progress in learning, and non-instructional records (e.g., guardian consent forms).
	40	I can frequently communicate with parents in a culturally sensitive manner.
	41	I can support and cooperate with other teachers.
	42	I can take on a leadership role in a school or district.
	43	I can solicit feedback from supervisors or other teachers to improve my practice.
	44	I can initiate engagement in activities that will contribute to my professional development and to the profession of teaching (e.g., taking a leadership role on the curriculum mapping committee).
	45	I can hold the highest standards of honesty, integrity, and confidentiality.
	46	I can be proactive in serving students, searching out resources when necessary.
	47	I can fully comply with school and district regulations.

APPENDIX D

EFFECTIVE TEACHER EFFICACY SURVEY 2.0

Effective Teacher Efficacy 2.0

Background: This survey is designed to help gain a better understanding of teacher efficacy of pre-service teachers. In this research, teacher efficacy is defined as a teacher's belief in her or his ability to affect engagement and performance of all students. The following items are part of a survey development to measure the levels of efficacy of pre-service teachers and their use of effective teaching skills and knowledge.

Participation is voluntary, and you can choose to not answer any question that you do not want to answer, and you can stop at any time. Your participation or non-participation will not affect your grade or class standing.

Please begin by answering a few questions about yourself that will help us better understand the survey results.

Please indicate your age:

- 18-22
 23-27
 28-32
 33-37
 38-42
 43-47
 48 or older

Please indicate your gender:

- Female
 Male

Please indicate the race/ethnicity that best describes you:

(Please choose only one item)

- American Indian or Alaskan Native
 Asian / Pacific Islander
 Black or African American
 Hispanic American
 White / Caucasian
 Multiple ethnicity
 Other (please specify) _____

Please indicate your class standing:

- Freshman
 Sophomore
 Junior

_____ Senior
 _____ Post-bac

Please indicate your teacher preparation area:

_____ Elementary (K-8)
 _____ Secondary (5-12)
 _____ K-12

Are you currently in a course with a field experience (e.g., Practicum, Student Teaching)?

_____ Yes
 _____ No

If yes, what course are you currently taking?

_____ Elementary Practicum I
 _____ Elementary Practicum II
 _____ Secondary Practicum
 _____ Student Teaching
 _____ Other (Please Specify)

Survey Instructions: Please read each item carefully and select the choice that is closest to how true you think each statement is for you. Each statement will be about your efficacy to affect student engagement and performance.

Using the following scale, select the choice that is closest to how true you think each statement is for you.

5	4	3	2	1
Exactly true	Mostly true	Moderately true	Hardly true	Not at all true

How true do you think each statement is for you?

- _____ 1. I can plan lessons that connect important concepts from multiple content areas.
- _____ 2. I can plan lessons that connect common concepts within a content area.
- _____ 3. I can anticipate student misconceptions in the content when I plan lessons.
- _____ 4. I can use ongoing assessments of all students to inform my planning.

- _____ 5. I can use knowledge of student differences (cognitive, emotional, social) to plan ways to actively engage students in learning.
- _____ 6. I can integrate several methods of assessment in my planning that will measure instructional outcomes.
- _____ 7. I can design lessons that lead students to meet instructional goals.
- _____ 8. I can design instructional experiences that engage students at high-levels of thinking.
- _____ 9. I can develop lessons that integrate student choice in activities.
- _____ 10. I can develop a clear assessment plan to measure all instructional outcomes.
- _____ 11. I can create and manage an environment where students respect me as their teacher.
- _____ 12. I can create and manage an environment where students are respectful to each other.
- _____ 13. I can create an environment where students take intellectual risks.
- _____ 14. I can create a classroom environment which students identify as a place for thinking and learning.
- _____ 15. I can create an environment where students assume responsibility for completing high quality work.
- _____ 16. I can develop consistent routines and easy-to-follow procedures to maximize instructional time.
- _____ 17. I can communicate the routines and procedures of a classroom so students will understand.
- _____ 18. I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g., students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).
- _____ 19. I can establish the expectation that students are responsible for monitoring their own behaviors.

- _____ 20. I can use resources effectively in the physical space of my classroom (e.g., whiteboards, technology, reading centers).
- _____ 21. I can arrange the physical space of the classroom to support instructional goals.
- _____ 22. I can communicate learning goals to students.
- _____ 23. I can provide clear directions to students so they know what to do without my direct supervision.
- _____ 24. I can find ways to connect students' interests to different concepts being studied.
- _____ 25. I can use a variety of questions to advance high-level thinking, speaking, and writing while teaching (e.g., asking high-order questions, not just recall).
- _____ 26. I can design learning tasks and activities that require complex thinking by students.
- _____ 27. I can challenge and encourage students to explain their thinking.
- _____ 28. I can incorporate opportunities for students to serve as resources for one another.
- _____ 29. I can make students aware of assessment criteria and involve them in defining criteria for particular assignments.
- _____ 30. I can use a variety of forms of feedback to focus on student improvement.
- _____ 31. I can facilitate students' uses of peer feedback for student improvement.
- _____ 32. I can facilitate students' uses of self-assessments and self-monitoring.
- _____ 33. I can provide high-quality feedback to students.
- _____ 34. I can be flexible and differentiate an activity when teaching, even if the differentiation was not included in the lesson planning.
- _____ 35. I can extend or shorten a lesson when necessary using evidence of student learning.
- _____ 36. I can make unplanned adjustments to a lesson to support individual students.

- _____ 37. I can make a thoughtful and accurate assessment of a lesson's effectiveness using specific examples as evidence (e.g., student work, student learning, student performance, student engagement).
- _____ 38. After teaching a lesson, I can evaluate and analyze its assessments, effectiveness, and the outcomes achieved.
- _____ 39. I can effectively maintain information on student completion of assignments, student progress in learning, and non-instructional records (e.g., guardian consent forms).
- _____ 40. I can frequently communicate with parents in a culturally sensitive manner.
- _____ 41. I can support and cooperate with other teachers.
- _____ 42. I can take on a leadership role in a school or district (e.g., share ideas of effective teaching strategies with other teachers, volunteer to participate in school events, participate in district projects).
- _____ 43. I can solicit feedback from supervisors or other teachers to improve my practice.
- _____ 44. I can seek out and get involved in activities that contribute to my professional development and to the profession of teaching (e.g., attending optional teacher workshops or teacher conferences, taking a leadership role on the curriculum mapping committee).
- _____ 45. I can hold and maintain the highest standards of honesty, integrity, and confidentiality.
- _____ 46. I can be proactive in serving students, searching out resources when necessary.
- _____ 47. I can fully comply with school and district regulations.

APPENDIX E

EFFECTIVE TEACHER EFFICACY 2.1

Effective Teacher Efficacy 2.1

Construct	Item Number	Item
Classroom Environment	11	I can create and manage an environment where students respect me as their teacher.
	12	I can create and manage an environment where students are respectful to each other.
	15	I can create an environment where students assume responsibility for completing high-quality work.
	16	I can develop consistent routines and easy-to-follow procedures to maximize instructional time.
	18	I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g., students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).
	19	I can establish the expectation that students are responsible for monitoring their own behaviors.
Professional Responsibilities	42	I can take on a leadership role in a school or district (e.g., share ideas of effective teaching strategies with other teachers, volunteer to participate in school events, participate in district projects).
	43	I can solicit feedback from supervisors or other teachers to improve my practice.
	44	I can seek out and get involved in activities that contribute to my professional development and to the profession of teaching (e.g., attending optional teacher workshops or teacher conferences, taking a leadership role on the curriculum mapping committee).
	45	I can hold and maintain the highest standards of honesty, integrity, and confidentiality.
	46	I can be proactive in serving students, searching out resources when necessary.
	47	I can fully comply with school and district regulations.
Student-Centered Assessments	29	I can make students aware of assessment criteria and involve them in defining criteria for particular assignments.
	30	I can use a variety of forms of feedback to focus on student improvement.
	31	I can facilitate students' uses of peer feedback for student improvement.
	32	I can facilitate students' uses of self-assessments and self-monitoring.

Critical Thinking	25	I can use a variety of questions to advance high-level thinking, speaking, and writing while teaching (e.g., asking high-order questions, not just recall).
Critical Thinking	26	I can design learning tasks and activities that require complex thinking by students.
	27	I can challenge and encourage students to explain their thinking.
Unanticipated Changes in Plans	34	I can be flexible and differentiate an activity when teaching, even if the differentiation was not included in the lesson planning.
	35	I can extend or shorten a lesson when necessary using evidence of student learning.
	36	I can make unplanned adjustments to a lesson to support individual students.
Student-centered Planning	3	I can anticipate student misconceptions in the content when I plan lessons.
	4	I can use ongoing assessments of all students to inform my planning.
	5	I can use knowledge of student differences (cognitive, emotional, social) to plan ways to actively engage students in learning.
	6	I can integrate several methods of assessment in my planning that will measure instructional outcomes.
Connections in Planning	1	I can plan lessons that connect important concepts from multiple content areas.
	2	I can plan lessons that connect common concepts within a content area.

APPENDIX F

EFFECTIVE TEACHER EFFICACY SURVEY 3.0

Effective Teacher Efficacy 3.0

Background: This survey is designed to help gain a better understanding of teacher efficacy of pre-service teachers. In this research, teacher efficacy is defined as a teacher's belief in her or his ability to affect engagement and performance of all students. The following items are part of a survey development to measure the levels of efficacy of pre-service teachers and their use of effective teaching skills and knowledge.

Participation is voluntary, and you can choose to not answer any question that you do not want to answer, and you can stop at any time. Your participation or non-participation will not affect your grade or class standing.

Please begin by answering a few questions about yourself that will help us better understand the survey results.

Please indicate your age:

- 18-22
 23-27
 28-32
 33-37
 38-42
 43-47
 48 or older

Please indicate your gender:

- Female
 Male

Please indicate the race/ethnicity that best describes you:

(Please choose only one item)

- American Indian or Alaskan Native
 Asian / Pacific Islander
 Black or African American
 Hispanic American
 White / Caucasian
 Multiple ethnicity
 Other (please specify) _____

Please indicate your class standing:

- Freshman
 Sophomore
 Junior

_____ Senior
 _____ Post-bac

Please indicate your teacher preparation area:

_____ Elementary (K-8)
 _____ Secondary (5-12)
 _____ K-12

Are you currently in a course with a field experience (e.g., Practicum, Student Teaching)?

_____ Yes
 _____ No

If yes, what course are you currently taking?

_____ Elementary Practicum I
 _____ Elementary Practicum II
 _____ Secondary Practicum
 _____ Student Teaching
 _____ Other (Please Specify)

Survey Instructions: Please read each item carefully and select the choice that is closest to how true you think each statement is for you. Each statement will be about your efficacy to affect student engagement and performance.

Using the following scale, select the choice that is closest to how true you think each statement is for you.

5	4	3	2	1
Exactly true	Mostly true	Moderately true	Hardly true	Not at all true

How true do you think each statement is for you?

- _____ 1. I can plan lessons that connect important concepts from multiple content areas.
- _____ 2. I can plan lessons that connect common concepts within a content area.
- _____ 3. I can anticipate student misconceptions in the content when I plan lessons.
- _____ 4. I can use ongoing assessments of all students to inform my planning.

- _____ 5. I can use knowledge of student differences (cognitive, emotional, social) to plan ways to actively engage students in learning.
- _____ 6. I can integrate several methods of assessment in my planning that will measure instructional outcomes.
- _____ 7. I can create and manage an environment where students respect me as their teacher.
- _____ 8. I can create and manage an environment where students are respectful to each other.
- _____ 9. I can create an environment where students assume responsibility for completing high quality work.
- _____ 10. I can develop consistent routines and easy-to-follow procedures to maximize instructional time.
- _____ 11. I can engage students in routines and procedures so they will take initiative in the management of the classroom (e.g., students remind others of behavioral expectations, students have input on strategies, students complete routines and procedures without reminders).
- _____ 12. I can establish the expectation that students are responsible for monitoring their own behaviors.
- _____ 13. I can design learning tasks and activities that require complex thinking by students.
- _____ 14. I can challenge and encourage students to explain their thinking.
- _____ 15. I can make students aware of assessment criteria and involve them in defining criteria for particular assignments.
- _____ 16. I can use a variety of forms of feedback to focus on student improvement.
- _____ 17. I can facilitate students' uses of peer feedback for student improvement.
- _____ 18. I can facilitate students' uses of self-assessments and self-monitoring.
- _____ 19. I can be flexible and differentiate an activity when teaching, even if the differentiation was not included in the lesson planning.

- _____ 20. I can extend or shorten a lesson when necessary using evidence of student learning.
- _____ 21. I can make unplanned adjustments to a lesson to support individual students.
- _____ 22. I can take on a leadership role in a school or district (e.g., share ideas of effective teaching strategies with other teachers, volunteer to participate in school events, participate in district projects).
- _____ 23. I can solicit feedback from supervisors or other teachers to improve my practice.
- _____ 24. I can seek out and get involved in activities that contribute to my professional development and to the profession of teaching (e.g., attending optional teacher workshops or teacher conferences, taking a leadership role on the curriculum mapping committee).
- _____ 25. I can hold and maintain the highest standards of honesty, integrity, and confidentiality.
- _____ 26. I can be proactive in serving students, searching out resources when necessary.
- _____ 27. I can fully comply with school and district regulations.