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THE IMPACT OF RESEARCH-BASED PROFESSIONAL DEVELOPMENT ON
TEACHER SELF-EFFICACY AND COLLECTIVE EFFICACY BELIEFS WITH
RESPECT TO APPLYING TECHNIQUES FROM *TEACH LIKE A CHAMPION 2.0*

By
Rhonda L. Partin-Dunn

A Dissertation Submitted to the
Gardner-Webb University School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

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2020

Approval Page

This dissertation was submitted by Rhonda L. Partin-Dunn under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

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Dedication

This dissertation is dedicated to my Lord and Savior Jesus Christ who has sustained me every step of the way. To my loving husband, biggest cheerleader, confidante, and best friend – Michael, thank you for your love and support, encouraging words, and confidence in me to see this journey complete. To my three children, Kaitlyn, Lauren, and Michael, thank you for believing in me, and for your relentless encouragement to complete this research project. To my mother, Wilma, who is my hero and role model, thank you for teaching me that I can do all things through Christ. To Jackaline Teel, thank you for saying, “yes,” without hesitation when I asked you to join me on this exciting journey. Your support, encouragement, and check-ins kept me on track and propelled me to the finish line. Last, I thank my closest friends for your encouragement and support.

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I can do all things through Christ who strengthens me. Philippians 4:13

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Abstract

THE IMPACT OF RESEARCH-BASED PROFESSIONAL DEVELOPMENT ON TEACHER SELF-EFFICACY AND COLLECTIVE EFFICACY BELIEFS WITH RESPECT TO APPLYING TECHNIQUES FROM *TEACH LIKE A CHAMPION 2.0*.

Partin-Dunn, Rhonda L., 2020: Dissertation, Gardner-Webb University.

This mixed methods research examined the impact of professional development on teacher self-efficacy and collective efficacy beliefs with respect to applying techniques from *Teach Like A Champion 2.0*. Increasing research shows there is a positive correlation between student achievement and high levels of teacher self-efficacy. Studies on teacher preparation acknowledge the role professional development plays on both teacher self-efficacy and collective efficacy beliefs. Additionally, research-based best practices like the techniques found in *Teach Like A Champion 2.0* have been established as behaviors of highly efficacious teachers. The study assessed teacher self-efficacy and collective efficacy beliefs, provided research-based professional development, reassessed self-efficacy and collective efficacy beliefs, and measured the impact. It was hypothesized that by providing research-based professional development exposing teachers to research-based best practices, teacher self-efficacy and collective efficacy would be positively impacted. Although small in scope, this study provided insight into the role research-based professional development has on teacher self-efficacy and collective efficacy beliefs. Overall, teacher self-efficacy beliefs showed a significant increase, while collective efficacy beliefs showed a marginal difference.

Keywords: self-efficacy, collective efficacy, professional development, research-based best practices

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Chapter 1: Introduction

Benjamin Franklin asserted in 1736 that an ounce of prevention is worth a pound of cure (Ringwall, 2010). Although the context of Franklin's axiom was addressing Philadelphians about fire safety (Ringwall, 2010), his words ring equally true today for followers of education and reform. As states and local school districts across the nation expanded their efforts to nurture and improve the academic success of their students, Franklin's message clearly signaled that prevention was a more prudent option to spending time, money, and resources (all of which often were limited for schools) to find a solution for a problem after it has presented itself. Although reform has taken on different forms because of the motivations of the reformers, most school reform efforts fell into two categories: teaching and learning, which focuses on what happens in the classroom; and administrative reform, which focuses on governance and decision-making strategies (Zavadsky, 2011). As 21st century reform efforts focused on finding a "cure" for the deficits in student achievement, the role and effectiveness of the classroom teacher represented itself as a powerful and preventative measure.

Teacher effectiveness was an increasingly discussed topic in education reform. As cited by Van Driel, Beijaard, and Verloop (2001), "the idea that teachers are the most influential factor in educational change is not controversial" (p. 137). According to Darling-Hammond (2000), "as new standards for student learning were introduced across the states, greater attention was given to the role teacher quality and effectiveness played in student achievement" (p. 2). According to Tucker and Stronge (2005), "years of research on teacher quality support the fact that effective teachers not only make students feel good about school and learning, but also that their work actually results in increased

student achievement” (para. 1). And while teacher effectiveness began with each teacher’s capacity to implement instructional strategies and cover the appropriate material as it is detailed in the required curriculum (Brooke, 2017), the National Council on Teacher Quality 2013 Teacher Prep Review suggested this pedagogical skill level varied significantly, depending on the quality of a teacher’s university teacher preparation program (Greenberg, McKee, & Walsh, 2014).

Brief History of Teacher Preparation Programs

According to Larabee’s (2008) description of early teaching and teacher preparation programs.

In early nineteenth century America, education took place in a wide variety of settings: home, where children acquired basic literacy and numeracy skills; church, where children learned via sermons, study groups, and Sunday schools; a variety of lyceums and public lectures; apprenticeships, which required the master artisan to provide some general education as well as trade craft; dame schools, in which students learned elementary skills in the home of a neighbor; private tutors; private schools relying on tuition; free schools for paupers operated by the local municipality; public schools in New England towns; academies, providing secondary education; and colleges, operating preparatory departments. (p. 291)

Larabee’s (2008) description clearly confirms that the setting determined the identity of the teacher – they ranged from preachers to parents, tradesmen, community leaders, and college professors.

In the early 19th century, the demand intensified for trained teachers, thus the commencement of formal programs for teacher preparation began (Larabee, 2008).

Lawley, Saxton, and Johns (2005) concluded that as the mission of training teachers shifted from the medical model of training doctors to the professional *formation* of teachers, the first normal school, intended exclusively for the training of teachers, opened in Vermont in 1823. These schools trained selected individuals in the basic skills of reading, writing, arithmetic, and related subjects. Less than 20 years later, Horace Mann established the first public normal school in Lexington, Massachusetts (Iorio, 2011).

Helton (2008) noted,

The normal school served as a place for prospective elementary school teachers to study the subjects they would teach, learn teaching methodology, and practice teaching in model schools for up to one year prior to accepting responsibility for a class of students (Coble et al, 2004). (p. 2)

Doyle (1990) asserted, “the normal school focused on the art or craft of teaching, a practice in which pre-service teachers were taught to use intuition and their personal understanding of a situation to guide instruction” (p. 13). With the growth of the normal school system, however, came the first endeavor to create a system of formal preparation of teachers for these schools (Cochran-Smith, Feiman-Nemser, McIntyre, & Demers, 2008). As normal schools felt the burden to supply more teachers, the initial steps of turning normal schools into teacher colleges would begin (Larabee, 2008).

College and university level teacher preparation programs evolved in the late 1800s (Tyack, 1967). Tyack (1967) contended that “for a 20-year period during the early 1900s, 88 normal schools transitioned into teachers’ colleges” (p. 416). By the 1950s, the last of the normal schools disappeared, which led the way to lend more credibility to college and university based teacher preparation. As Larabee (2008) suggested,

With this change, the former normal schools could grant bachelor's degrees, giving heft and credibility to all their programs. But the process did not end there. These teachers colleges had already diversified their programs, turning themselves into de facto liberal arts colleges, with teacher education playing a smaller role in the curriculum every year. So it made sense to recognize this fact, remove the word "teachers" from their letterhead, and change to a more generally recognized and marketable label, "state college." (p. 293)

In the early 1900s, colleges and universities focused on preparing candidates to teach at the high school level. According to Larabee (2008), whereas the normal schools had focused on meeting the main needs of an expanding education system, by preparing a large number of teachers for the elementary schools, university education professors focused on the preparation of a much smaller number of high school teachers. (p. 296)

As teacher preparation programs continued to morph at the college and university level, contributions by scholars such as William James, John Dewey, and Edward Thorndike introduced psychology, cognitive organization theory, and social neuroscience into teacher preparation programs (Helton, 2008). "University and college teacher education programs grew rapidly as states developed specific licensure requirements often based on college level coursework" (Ducharme & Ducharme, 2012, para. 12). As images of science and technology penetrated contemporary teacher education (Eisner, 1983), requirements for topics like general arts and sciences, discipline, and field experiences became the norm (Helton, 2008).

Today, state universities are the major source of preparation of beginning teachers

(Ducharme & Ducharme, 2012). “The US has 1,206 schools, colleges and departments of education dedicated to preparing teachers spread amongst 54% of the nation’s four-year colleges and universities” (Levine, 2006, p. 5). According to the National Research Council (2010),

These programs can be 4 or 5 years in duration; offer a baccalaureate or master’s degree or both, may include many institutional partners, both on and off campus, may enroll handfuls or hundreds of prospective teachers; they may train elementary or middle or secondary teachers for a range of subject-matter teaching certificates; and have different philosophies about and approaches to teaching and teacher education. (p. 38)

Problem Statement

Research findings spanning more than 20 years were clear about the connection between effective, highly trained teachers and student achievement (Fiese, 2011), yet for many teachers, their students’ learning challenges were so daunting that the educators did not believe they could make an impact (Mizell, 2010). While reasons for this lack of self-efficacy were vast, one reason was teacher lack of knowledge and skills to address today’s students’ specific challenges (Mizell, 2010). Therefore, the problem studied in this research was how in-service professional development with respect to applying strategies from *Teach Like a Champion 2.0* impacted teacher self-efficacy and the collective teacher efficacy beliefs at Sparta Middle School (SMS; pseudonym).

Yoo (2016) contended, “the sense of self-efficacy has been widely studied in the field of education as it has been recognized as an important factor that influences student achievement and behavior” (p. 84). Bandura (1997b) suggested, “the task of creating

learning environments conducive to the development of cognitive competencies rests heavily on the talents and self-efficacy of teachers” (p. 240). Lewandowski (2005) further supported the link between positive teacher self-efficacy and student achievement:

Studies have shown a positive correlation between teachers’ perceived self-efficacy and student achievement. How efficacious a person believes him or herself to be influences the choice of activities, amount of effort spent, and the persistence put forth to complete the tasks when confronted with obstacles. (p. 1)

Furthermore, teachers possessing a strong sense of self-efficacy tended to guide students to the path of academic accomplishments; conversely, teachers with a weak sense of self-efficacy easily gave up when difficulty arose (Lewandowski, 2005).

In April 1983, The National Commission on Excellence in Education gave a report entitled *A Nation at Risk* (Roberts, 2010). The report was a response to then Secretary of Education Terrel H. Bell’s observation that the United States educational system was failing to meet the national need for a competitive workforce. This report, which identified shortcomings in America’s public schooling, outlined the needs of the U.S. public education system. The opening paragraph read,

Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is the one that undergirds American prosperity, security, and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its

people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people.

What was unimaginable a generation ago has begun to occur--others are matching and surpassing our educational attainments. (p. 5)

A series of widespread school improvement initiatives began as a result of the publishing of *A Nation at Risk* (Roberts, 2010). The report recommended more rigorous and quantifiable standards, more rigid graduation requirements, and better trained teachers (Finn, 2008).

According to Feuer, Floden, Chudowsky, and Ahn (2013), “teacher training and preparation programs (TPPs) are where prospective teachers gain a foundation of knowledge about pedagogy and subject matter; however, competence in teaching, as in all professions, is shaped significantly by on-the-job experiences and continuous learning” (p. 1).

For this study, continuous learning took place in the shape of in-service professional development.

Context of the Problem

SMS is a middle school located in the eastern region of North Carolina. The school opened its doors in the fall of 1970 when the integration of the district system was complete. Serving Grades 6-8, SMS is dedicated to maintaining a positive reputation, high standards of excellence, and high-quality education for its students.

There were 388 students enrolled at SMS. The ethnic makeup of the student population was 37% White, 34% Black, 24% Hispanic, and 5% other—American Indian, Asian, Two or More Races (see Figure 1). Fifty-five percent of the student population

was female, and 45% was male.

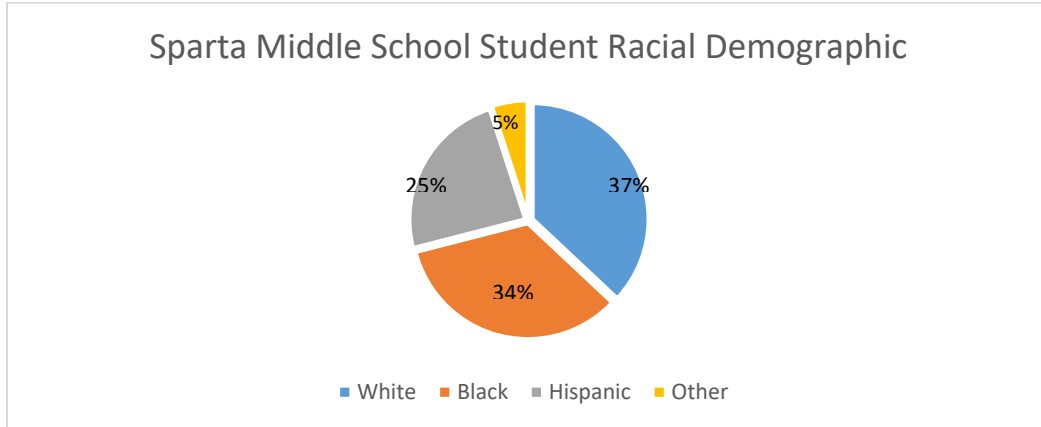


Figure 1. SMS Racial Demographics (Public School Review).

The instructional staff consisted of 20 classroom teachers, one exceptional children’s resource teacher, one AIG specialist, and a media coordinator. Data from the most recent NC Report Card (2016-2017) showed 82% of the teachers on staff were fully licensed, compared to 88% of the district’s teachers were fully licensed and 91.5% of the state’s teachers were fully licensed (see Figure 2). The data further showed 26% of SMS teachers had advanced degrees, compared to 20% of the district’s teachers and 28% of the state’s teachers. There was one National Board certified teacher on staff, compared to an average of two on staff for the district, and an average five on staff for the state. The 1-year teacher turnover rate for the 2016-2017 school year was 14.8%, compared to 17.4% for the district and close to the state’s rate of 14.7%. Additionally, 31.8% of SMS staff had 0-3 years teaching experience, 18.2% had 4-10 years teaching experience, and 50% of the staff had more than 10 years of teaching experience.

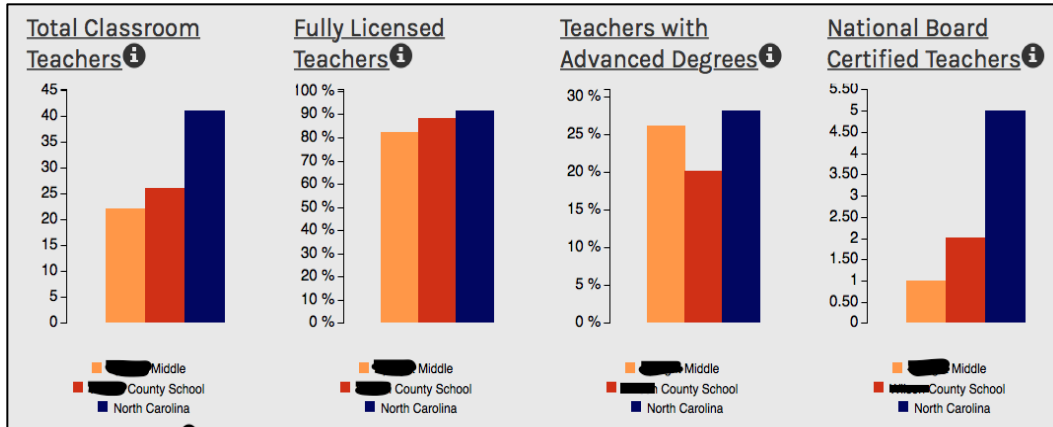


Figure 2. Teachers and Qualifications (NC Report Card, 2016-2017).

SMS sits in the eastern part of the state in a county with approximately 81,000 residents and a median income of \$33,000 per year (United States Census Bureau, n.d.). The county's school district was made up of 25 schools: 14 elementary, six middle, and five high schools. Fifty-three percent of the county's students were eligible for free or reduced-price lunch, which was slightly lower than the state average of 56.7%. Average daily attendance in the school system was 95.5%. The district's population of exceptional children totaled 11.5%.

Each year, North Carolina set a goal, an annual measurable objective (AMO), to establish a minimum percentage of students who must meet or exceed standards on its academic assessments. AMOs and student achievement in the state were measured through statewide testing (North Carolina Department of Public Instruction, 2014). AMOs for mathematics, reading (English/language arts), science, end-of-course (EOC), ACT, ACT WorkKeys, Math III, and cohort graduation rates and attendance for nongraduating grades were reported by the state (North Carolina Department of Public Instruction, 2014).

For the 2016-2017 school year, SMS received an overall school performance grade of D on its NC Report Card, with 58% of its students not meeting academic growth measures. The school performance grade was based on 80% academic achievement and 20% academic growth. Student test performance was reported as one of five achievement levels. Levels 1 and 2 were below grade level. Level 3 was at grade level. Levels 4 and 5 indicated college and career readiness. The data from the report card (see Figure 3) showed that in math, SMS received a score of 38, an F, with 67% of its students scoring a level 1 or 2, as compared to the district average of 57% and the state average of 44% of the overall students not at grade level; Math I EOC scores showed 52% of students scoring a level 4 and 44% scoring a level 5, indicating college and career readiness. The district's Math I scores averaged 37.6% scoring a level 4 and 7.8% scoring level 5, with the state average at 38% and 16% respectively. In English language arts/reading, 56% of SMS students scored below grade level, compared to the district average of 55% and the state average of 42% of overall students scoring below grade level. Eighth-grade science scores showed that just 20% of students scored below grade level, compared to 16.5% for the district and 27 for the state.

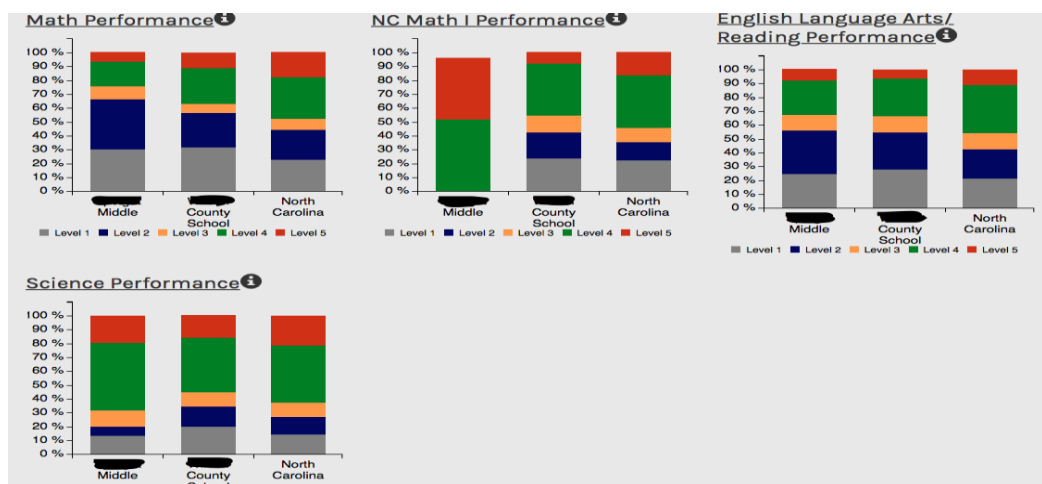


Figure 3. Student Performance by Subject Area.

One hundred percent of SMS staff participated in the 2018 North Carolina Teacher Working Conditions Survey (TWCS). The survey was designed to assess working condition standards in schools and served as a resource for school improvement planning (New Teacher Center, 2016, p. 2). The 2018 survey measured eight standards: time, facilities and resources, community support and involvement, managing student conduct, teacher leadership, school leadership, professional development, and instructional best practices; of which the staff had to read a series of statements and rate how strongly they agreed or disagreed with the statements.

Of the eight standards measured, the data revealed that less than 70% of the staff agreed with statements in three of the standards. With regards to the standard of time, the data showed less than 70% of the staff agreed with any of the statements related to time. For example, only 69.2% of the staff believed teachers had sufficient instructional time to meet the needs of all students. This response was relatively consistent across the state and other North Carolina middle schools, with just 71.2% and 71.3% of staff agreeing

respectively (see Figure 4).

Time				
Q2.1 Please rate how strongly you agree or disagree with the following statements about the use of time in your school.	NC	District	NC MS	SMS
a. Class sizes are reasonable such that teachers have the time available to meet the needs of all students.	59.8%	64.5%	57.3%	28.0%
b. Teachers have time available to collaborate with colleagues.	75.1%	77.5%	78.3%	84.6%
c. Teachers are allowed to focus on educating students with minimal interruptions.	69.0%	66.2%	68.2%	48.0%
d. The non-instructional time provided for teachers in my school is sufficient.	65.3%	65.7%	68.5%	58.3%
e. Efforts are made to minimize the amount of routine paperwork teachers are required to do.	66.8%	59.1%	70.5%	48.0%
f. Teachers have sufficient instructional time to meet the needs of all students.	71.2%	74.7%	71.3%	69.2%
g. Teachers are protected from duties that interfere with their essential role of educating students.	73.1%	75.8%	71.5%	48.0%

Figure 4. SMS Staff Responses to TWCS Related to Standard 1—Time (New Teacher Center, 2018).

The second lowest area of agreement came from statements from the professional development standard. Data showed only 54.2% of SMS staff agreed that professional development was differentiated to meet the individual needs of teachers. Furthermore, only 56% of the staff agreed that in their school, follow-up is provided from professional development (see Figure 5).

Professional Development				
Q8.1	Please rate how strongly you agree or disagree with statements about professional development in your school.			
	NC	District	NC MS	SMS
a. Sufficient resources are available for professional development in my school.	80.2%	71.4%	79.7%	70.8%
b. An appropriate amount of time is provided for professional development.	79.3%	69.4%	78.8%	74.1%
c. Professional development offerings are data driven.	83.5%	83.3%	83.1%	90.9%
d. Professional learning opportunities are aligned with the school's improvement plan.	90.4%	90.1%	89.7%	90.0%
e. Professional development is differentiated to meet the individual needs of teachers.	66.6%	66.7%	66.2%	54.2%
f. Professional development deepens teachers' content knowledge.	76.9%	80.3%	74.9%	76.0%
g. Teachers have sufficient training to fully utilize instructional technology.	74.8%	75.5%	75.8%	88.5%
h. Teachers are encouraged to reflect on their own practice.	93.8%	91.7%	93.4%	88.5%
i. In this school, follow up is provided from professional development.	74.4%	74.0%	73.6%	56.0%

Figure 5. SMS Staff Responses to TWCS Related to Standard 7—Professional Development (New Teacher Center, 2018).

With regard to the standard of instructional practices, data showed that the staff strongly agreed with most of the statements. The one exception was only 66.7% of the staff agreed that teachers were assigned classes that maximized their likelihood of success with students (see Figure 6).

Instructional Practices and Support				
Q9.1	Please rate how strongly you agree or disagree with the following statements about instructional practices and support in your school.			
	NC	District	NC MS	SMS
a. Local assessment data are available in time to impact instructional practices.	85.2%	88.5%	86.4%	92.3%
b. The curriculum taught in this school is aligned with the North Carolina Standard Course of Study.	97.6%	96.7%	97.9%	100.0%
c. Teachers work in professional learning communities to develop and align instructional practices.	91.9%	92.1%	92.2%	100.0%
d. Provided supports (i.e. instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.	86.6%	86.2%	86.8%	92.3%
e. Teachers are encouraged to try new things to improve instruction.	93.2%	92.5%	93.6%	96.2%
f. Teachers are encouraged to observe other teachers within their school/district.	77.9%	83.7%	78.9%	96.0%
g. Teachers are assigned classes that maximize their likelihood of success with students.	71.0%	71.6%	70.0%	66.7%

Figure 6. SMS Staff Responses to TWCS Related to Standard 8—Instructional Practices and Support (New Teacher Center, 2016).

The SMS School Improvement Plan (SIP) addressed four dimensions: instructional excellence and alignment, leadership capacity, families and communities, and professional capacity. The school's SIP goals were

1. By October 31, 2018, the math department will increase growth for students in Grades 6-8 from -4.2 to + 2.0 as measured by EOG and EOC summative data by effective implementation of effective monitoring tools;
2. By June 7, 2017, the math department will increase proficiency for students in Grades 6-8 from 33.7% to 40% as measured by EOG and EOC summative data by effective implementation of effective monitoring tools and strategic use of appropriate math resources;
3. By October 31, 2018, the SMS ELA teachers will increase the proficiency of ELA students in Grades 6-8 from 43.7% to 50% as measured by EOG and EOC summative data by effective implementation of effective monitoring tools and Learning Focused Lesson Plans; and
4. By October 31, 2018, the SMS math department will increase proficiency in math from 40% to 50% as measured by EOG and EOC summative data by effective implementation of effective monitoring tools and strategic use of appropriate math resources and Learning Focused Lesson Plans.

Within the four dimensions were effective practices the school had determined were needed to meet its SIP goals. Under the dimension of instructional excellence and alignment, SMS identified a need to implement an instructional system that allowed teachers to deliver evidence-based instruction aligned with the needs of the students. Additionally, there was a need to have SMS instructional teams meet twice per month or

more to review implementation of those effective practices. Under the dimension of professional capacity, SMS identified the need for quality professional development. SMS determined professional development would assist teachers in creating lesson plans that helped students maximize their potential.

Language from the SIP suggested SMS believed these needs could be met through professional development sessions that provided research-based strategies that could be immediately implemented in the classroom.

At the helm of the school for just 4 years, the SMS principal was concerned about student proficiency scores, the school's culture, and teacher perceptions of their ability to impact student achievement. She agreed that her teachers are the school's most valuable asset and was receptive of ideas that promoted increased teacher efficacy and fostered more effective instructional practices.

Purpose of the Study

The purpose of this study was to investigate and evaluate if research-based professional development with respect to applying techniques from *Teach Like a Champion 2.0* impacted teacher self-efficacy and the collective efficacy beliefs of SMS teachers. The study focused on providing strategic professional development training modules after assessing teacher self-efficacy and collective efficacy beliefs and their specific training desires and needs (see Figure 7). This study entailed assessing teacher self-efficacy and collective efficacy beliefs, training them through in-service professional development modules, then reassessing self-efficacy and collective efficacy beliefs again. It was hypothesized that by providing research-based professional development exposing teachers to best practices and current, relevant concepts, teacher self-efficacy and

collective efficacy beliefs would be positively impacted.

Date	Category	Technique	Description
Week – 1 September 10, 2018	Gathering Data on Student Mastery	Technique 2: Targeted Questioning	Ask a quick series of carefully chosen, open-ended questions directed at a strategic sample of the class and executed in a short time period.
	Gathering Data on Student Mastery	Technique 5: Show Me	Flip the classroom dynamic in which the teacher gleans data from a passive group of students. Have students actively show evidence of their understanding
Week – 2 September 17, 2018	Acting on Data and the Culture of Error	Technique 7: Plan for Error	Increase the likelihood that you'll recognize and respond to errors by planning for common mistakes in advance.
	Acting on Data and the Culture of Error	Technique 8: Culture of Error	Create an environment where your students feel safe making and discussing mistakes, so you can spend less time hunting for errors and more time fixing them.
Week – 3 September 24, 2018	Acting on Data and the Culture of Error	Technique 9: Excavate Error	Dig into errors, studying them efficiently and effectively, to better understand where students struggle and how you can best address those points.
	Acting on Data and the Culture of Error	Technique 10: Own and Track	Have students correct or revise their own work, fostering an environment of accountability for the correct answer.
Week - 4 October 1, 2018	Setting High Academic Expectations	Technique 11: No Opt Out	Turn "I don't know" into a success by helping students who won't try or can't succeed practice getting it right (and being accountable for trying).
	Setting High Academic Expectations	Technique 12: Right is Right	When you respond to answers in class, hold out for answers that are 'all-the- way right' or all the way to your standards of rigor.
Week – 5 October 8, 2018	Lesson Structure	Technique 22: Board = Paper	Model and shape how students should take notes in order to capture the information you present.
	Lesson Structure	Technique 26: Exit Ticket	End each class with an explicit assessment of your objective that you can use to evaluate your (and your students') success.
Week – 6 October 15, 2017	Pacing	Technique 30: Work the Clock	Measure time-your greatest resource as a teacher-intentionally, strategically, and often visibly to shape both your and your students' experience in the classroom.
	Building Character and Trust	Technique 59: Precise Praise	Make your positive reinforcement strategic. Differentiate between acknowledgement and praise.

Figure 7. Proposed Professional Development Calendar.

Research Questions

This research study was driven by three questions:

1. What impact does professional development have on teacher self-efficacy beliefs with respect to applying strategies/techniques from *Teach Like a Champion 2.0*?
2. What impact does research-based professional development have on collective efficacy beliefs with respect to applying strategies/techniques from *Teach Like a Champion 2.0*?

Theoretical Framework

The dependent variable in this research study was teacher self-efficacy. The independent variable was professional development. The possible topics that became headings for the literature review included self-efficacy, teacher efficacy, collective self-efficacy, measuring self-efficacy, professional development, and research-based best practices.

The literature review shows the individual relevance of each of these topics as well as how they have impacted teacher self-efficacy.

Significance of Study

This study was significant because it examined the impact and potential influence of research-based professional development on teacher self-efficacy at a middle school in a rural county in eastern North Carolina.

One of the factors that impacts how teachers perform in the classroom is self-efficacy (Looney, 2003, p. 1). Looney (2003) contended, “researchers have been concerned with how various teaching practices and teacher behavior can affect student

performance” (p. 1). Furthermore, teacher effectiveness and accountability are trending issues in the government’s effort to increase academic achievement and raise test scores of students (U.S. Department of Education, 2001).

Because self-efficacy was defined as the extent to which a teacher believes he or she has the capacity to affect student performance (Bandura, 1993), this study examined if research-based professional development impacted teacher self-efficacy and collective efficacy beliefs.

Given the potential importance of teacher sense of self-efficacy for instructional effectiveness and student achievement, professional development was an important strategy for supporting the complex skills the students needed to be prepared for college and careers in the 21st century. Darling Hammond et al (2017) asserted,

For students to develop mastery of challenging content, problem-solving, effective communication and collaboration, and self-direction, teachers must employ more sophisticated forms of teaching. Effective professional development (PD) is key to teachers learning and refining the pedagogies required to teach these skills. (para. 1)

In Quint’s (2011) research and demonstration projects, the Professional Development in Reading Study and the Middle School Mathematics Professional Development Impact Study, she hypothesized that professional development would improve both teacher content knowledge and their pedagogy. Figure 8 depicts in simplified form Quint’s theory of action underlying the two demonstrations. The theory hypothesized that professional development would improve both teacher content knowledge and their instructional practices (Quint, 2011).

The Professional Development Synthesis Report

Figure 1

Theory of Change Underlying the Professional Development Evaluations

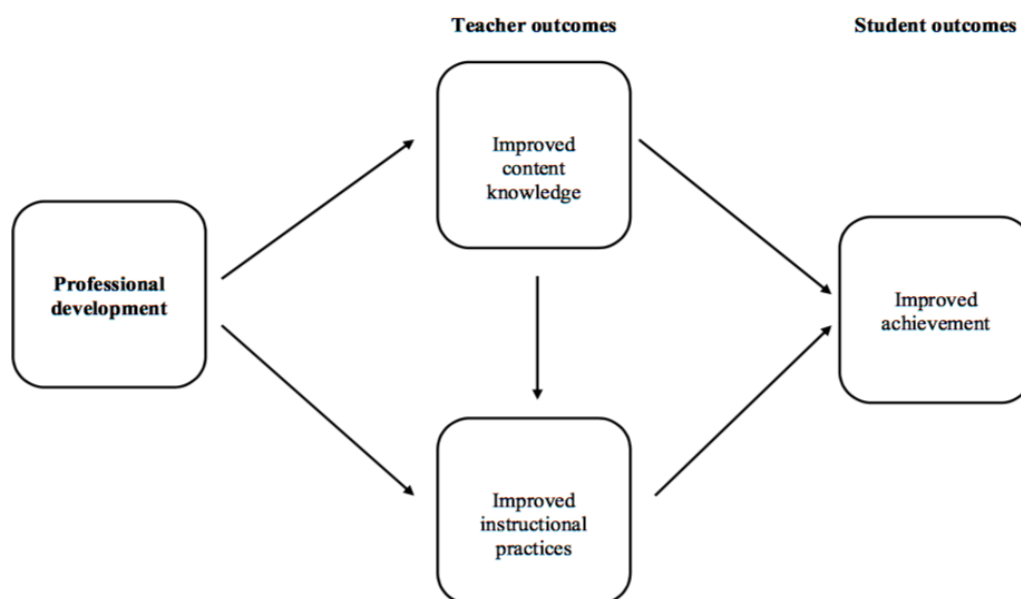


Figure 8. Professional Development Synthesis Report (Quint, 2011, p. 4).

For this study, professional development will serve as a formal in-service training to upgrade the pedagogical skills of teachers.

Operational Definitions

Teacher self-efficacy. A judgment of his or her belief in the capability to bring about desired outcomes of student engagement and learning, even among students who may be difficult or unmotivated (Tschannen-Moran & Woolfolk Hoy, 2001).

High teacher self-efficacy. Confidence in one's own ability to affect change resulting in student achievement (Earley & Lituchy, 1991). These teachers tend to set higher goals for themselves as well as work harder and persist longer to achieve the goals that were set.

Low teacher self-efficacy. A lack of confidence in one's own ability to carry out actions that will affect change in student achievement. Difficulties are viewed as obstacles rather than challenges (Earley & Lituchy, 1991).

Professional development. Structured professional learning that results in changes in teacher practices and improvements in student learning outcomes (Darling-Hammond et al., 2016).

Research-based instructional best practices. A teaching practice that is based on cognitive science—how our brains acquire and use information; practices of master teachers—teachers whose classrooms show the highest gains in achievement in controlled environments; and cognitive supports to help students learn complex tasks—instructional procedures that aid in learning (Burckhard, 2013).

Fidelity. The degree to which specified procedures are implemented as planned (Dane & Schneider, 1998).

Summary

It is no secret that one's internal beliefs impact their behaviors. Boomer (2014) asserted that Henry Ford once quipped whether you think you can or whether you think you can't, you're right. Effective teachers have believed that they can make a difference in children's lives, and what teachers believe about their capability was a strong indicator of teacher effectiveness (Gibbs, 2002).

Teacher self-efficacy could play a significant role in how well a teacher believed in his or her capacity to be effective. Jerald (2007) postulated that teachers with a strong sense of efficacy tended to display greater levels of planning and organization, were more receptive of new ideas, were more inclined to test new strategies in an effort to address

the needs of their students, were more determined and resilient when things got difficult, were less critical of student errors, and were less inclined to refer a difficult student to special education.

New concepts and strategies derived from research-based best practices could effectively address the needs of students. Professional development for teachers was a key mechanism for improving classroom instruction and student achievement (Ball & Cohen, 1999). This research study examined the impact of professional development with respect to applying techniques from *Teach Like A Champion 2.0* on teacher self-efficacy and collective efficacy beliefs at SMS.

Chapter 2: Review of Literature

This chapter provides a theoretical framework and review of the literature to provide a background of the historical perspective of teacher self-efficacy. Additionally, this chapter explores research conducted on sources of self-efficacy, measuring self-efficacy, professional development, and research-based best practices. This study was designed to add to the body of research about teacher self-efficacy and how it is impacted by professional development.

Self-Efficacy

Background. One's internal beliefs impact their behaviors. Boomer (2014) asserted that Henry Ford once said whether you think you can or whether you think you can't, you're right. Whether one feels he or she can rise to the occasion to accomplish a goal or have doubts in their abilities is a direct result of self-efficacy. Shahzad and Naureen (2017) contended, "the study of self-efficacy and its impact on human performance has intrigued many scholars during the last two decades" (p. 48). According to Goddard, Hoy, and Woolfolk Hoy (2000), "with the work of Rotter (1966) as a theoretical base, researchers at the RAND Corporation studying the effectiveness of reading instruction first conceived of teacher efficacy" (p. 481).

Although many scholars have explored the theory of self-efficacy, Bandura, a well-known social cognitive psychologist, was most notable for his influential research of perceived self-efficacy in self-development and adaptation and change, both serving as the foundation for his theory on self-efficacy (Bandura, n.d.). Rotter's and Bandura's conceptual strands were distinctly different; nevertheless, they were interwoven. "The existence of these two separate but intertwined conceptual strands has contributed to a

lack of clarity about the nature of teacher efficacy” (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 203).

For nearly 60 years, Bandura contributed to research in education and psychology. “Since Bandura published his influential 1977 paper, ‘Self-Efficacy: Toward a Unifying Theory of Behavioral Change,’ the subject has become one of the most studied topics in psychology (Cherry, 2017, par. 8). Bandura’s (1978) theory of self-efficacy was derived from what he described as the self-system. According to Bandura (1978), “self-referent processes occupy a central position in social learning theory. They are measured by having people rate in one way or another evaluative statements that they consider apply to themselves” (p. 748). Likewise, Cherry (2017) concluded, “this system plays a major role in how we perceive situations and how we behave in response to different situations. Self-efficacy is an essential part of this self-system” (para. 3)

Bandura (2006) defined self-efficacy as “beliefs about one’s capability to learn or perform behaviors at designated levels” (p. 307). Bandura (1977) also explained self-efficacy as “the conviction that one can successfully execute behavior required to produce outcomes” (p. 193). Simply put, self-efficacy is expressed as one’s beliefs about what he or she can do.

According to Looney (2003), “self-efficacy is a multidimensional construct varying in level, generality, and strength” (p. 18). Looney further concluded,

Efficacy beliefs of individuals can be based upon tasks in a particular domain that lie on a continuum from simple to moderately difficult to extremely taxing.

Furthermore, individuals might feel efficacious in a wide range of activities or

only in certain domains, and these efficacy beliefs might be weak, strong, or somewhere in between. (p. 18)

Moreover, an individual's efficacy beliefs might vacillate based upon his or her accomplishments in a given domain. The correlation between their previous experiences, sense of efficacy, and accomplishments moving forward is often driven by how they perceive their personal performances instead of the actual performance itself.

Self-efficacy was grounded in the theoretical framework of social cognitive theory. Bandura (1999) said that this theory postulated that people “function as contributors to their own motivation, behavior, and development within a network of reciprocally interacting influences” (p. 169). According to Bandura (n.d.),

Among the mechanisms of human agency, none is more central or pervasive than people's beliefs in their efficacy to influence events that affect their lives. This core belief is the foundation of human inspiration, motivation, performance accomplishments, and emotional well-being. Unless people believe they can produce desired effects by their actions, they have little incentive to undertake activities or to persevere in the face of difficulties. Whatever other factors serve as guides and motivators, they are rooted in the core belief that one has the power to affect changes by one's actions. This core belief operates through its impact on cognitive, motivational, affective, and decisional processes. (para. 1)

Bandura (1977) argued that a person's beliefs about their behavior or the ability to successfully complete a task would produce certain outcomes. Shambaugh (2008) attributed this belief to the fact that individuals were not simply reactors to their environment but were both producers and products of their interactions with the

environment. Bandura's idea that "self-efficacy impacted behavior prompted critical responses from naysayers as critics casted doubts about whether or not self-efficacy expectations were major drivers of change" (Shambaugh, 2008, p. 15).

One scholar, Hawkins, who touted himself as a cognitive-behaviorist, contrasted Bandura, as Hawkins did not view self-efficacy as a causal agent but rather as "a prognosticator of behavior" (Shambaugh, 2008, p. 15). For example, Hawkins (1992) rebutted Bandura's belief that nonperformance-based manipulations of self-efficacy which have resulted in behaviors draw a parallel with induced self-efficacy. Hawkins (1992) noted, "while these results were consistent with self-efficacy being a 'cause' of behavior, the experiment could be explained in other ways" (p. 237). "It was not his goal to get into a heated back and forth with Bandura about self-efficacy and contended he did not want to reject Bandura's theory; he simply wanted to bring awareness to the possibility of amending it" (Hawkins, 1992, p. 235). Although the body of research has grown, Hawkins (1995) suggested that Bandura often responded to his critics by ridiculing minor points to discredit their arguments.

Bandura (1993) argued, "the stronger one's perceived self-efficacy, the higher the goals and challenges people set for themselves" (p. 118). Because practically all people have goals they want to accomplish, things they want to change, or things they would like to achieve, Bandura (1993) suggested that personal goal setting was influenced by the self-appraisal of capabilities. Bandura (1993) concluded,

Most courses of action are initially shaped in thought. People's beliefs in their efficacy influence the types of anticipatory scenarios they construct and rehearse. 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. It is difficult to achieve much while fighting doubt. (p. 118)

While self-efficacy directly addresses one's thoughts about their ability to perform, it is important to note that self-efficacy not be confused with self-esteem. According to Lane, Lane, and Kyorianou (2004), "self-esteem and self-efficacy appear to be very different constructs" (p. 249). Lent (2016) emphasized, "despite the occasional confusion, self-efficacy is *not* the same thing as general self-confidence, self-esteem, or objective ability" (p. 577). While self-efficacy addressed the question of "Can I do this," Lent contended that our self-esteem has implications that could be viewed as a sense of confidence linked to a particular given task.

It is important to note that there was a discernable difference between having knowledge and skills and being able to execute them when examining self-efficacy. Personal accomplishments require not only the necessary skills but also efficacy to use them well (Bandura, 1993). Bandura (1993) attributed the thought of self-efficacy contribution to a skill from a study by Collins in 1982. According to Bandura (1993),

She selected children at three levels of mathematical ability- low, medium and high. Within each of these ability levels, she found children who were assured in their perceived mathematical self-efficacy and others who had self-doubt. They were given difficult problems to solve. At each level, children who believed strongly in their capabilities were quicker to discard faulty strategies. They chose to rework more of the problems they failed and did so more accurately than did children of equal ability who were plagued by self-doubts. (p. 119)

Self-efficacy was believed to help determine what we can achieve with our objective abilities (Lent, 2016). For that reason, one could consider self-efficacy to be an *ability catalyst*. According to Lent (2016), “two people with the same measured ability may produce performances of vastly different quality, depending on their self-efficacy beliefs” (p. 578).

Self-efficacy sources. So, from where then does self-efficacy originate?

According to Bandura (1994), “people’s beliefs about their efficacy can be developed by four main sources of influence” (para. 4). Bandura (1994) identified these four major sources of self-efficacy as performance outcomes, vicarious experiences, verbal persuasion, and physiological feedback (see Figure 9).

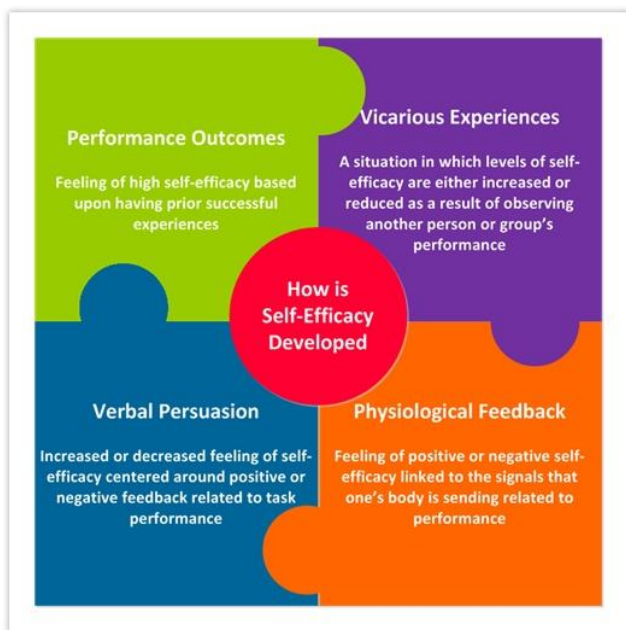


Figure 9. Sources of Self-Efficacy.

When examining performance outcomes, sometimes referred to as mastery experiences, it is important to note that Bandura (1994) believed this to be the most

important source of self-efficacy. Bandura (1994) argued, “the most effective way of creating a strong sense of efficacy is through mastery experiences. Successes build a robust belief in one's personal efficacy.” (para. 4). Performance outcomes hinged upon both positive and negative experiences. Redmond and Slaughenhoup (2016) argued that positive and negative experiences play a role in a person’s beliefs about their ability to accomplish a task.

The idea of performance outcomes impacting self-efficacy suggested that if an individual performed well on a previous task, he or she was more likely to have a higher sense of self-efficacy. When asked to perform the task again, they were more likely to try harder in an effort to complete the task with better results (Redmond & Slaughenhoup, 2016). Conversely, Redmond and Slaughenhoup (2016) asserted that “if that same individual experienced failure at that task, there was a likely reaction of a reduction in self-efficacy” (para. 16). As a result, failures could potentially undermine self-efficacy. Bandura (1994) further explained,

If people experience only easy successes, they come to expect quick results and are easily discouraged by failure. A resilient sense of efficacy requires experience in overcoming obstacles through perseverant effort. Some setbacks and difficulties in human pursuits serve a useful purpose in teaching that success usually requires sustained effort. (para. 4)

Moesgaard (2019) contended there was little doubt that the act of mastering an experience or task had an influence on one’s perceptions of his or her ability. Furthermore, the article explained that an individual who has successful experiences will have greater feelings of self-efficacy.

Sometimes people develop high or low self-efficacy through other people's performance (Redmond & Slaughenhou, 2016). This phenomenon is known as vicarious experiences, which is sometimes referred to as social modeling. When we observe people around us, watching them succeed or fail could impact our self-efficacy (Redmond & Slaughenhou, 2016). Bandura (1994) stated, "seeing people similar to oneself succeed by sustained effort raises observer's beliefs that they too possess the capabilities to master comparable activities required to succeed" (para. 6). Bandura (1994) further concluded that when we observed others' failures, it has a negative impact on our own efficacy, thus discouraging our efforts.

Siegel (2000) supported Bandura's (1994) claim by suggesting that once strong self-efficacy is developed from one's own personal successes, an occasional failure may not have negative effects; however, self-efficacy based on observing others succeed will diminish rapidly if observers subsequently have unsuccessful experiences of their own.

According to Hickman (n.d.), "Bandura also asserted that people could be persuaded to believe that they have the skills and capabilities to succeed" (para. 6). Bandura (1994) noted, "people who are persuaded verbally that they possess the capabilities to master given activities are likely to mobilize greater effort and sustain it than if they harbor self-doubts and dwell on personal deficiencies when problems arise" (para. 7). Bandura (1994) added that "verbal persuasion has the ability to foster skill development and a higher sense of efficacy" (para. 7).

Akhtar (2008) contended, "influential people in our lives such as parents, teachers, managers or coaches can strengthen our beliefs that we have what it takes to succeed" (para. 7). For example, Siegel (2000) postulated that "students experience

higher self-efficacy when they are told they are capable by someone they believe is trustworthy, like a teacher” (para. 6). Redmond (2010) put it this way:

Think of a coach giving a pep talk...or a parent offering words of encouragement to a child. Using verbal persuasion in a positive light leads an individual to put forth more effort, and therefore they have a greater chance at succeeding. (para. 13)

Moesgaard (2019) proposed, “when other people encourage and convince you to perform a task, you tend to believe that you are more capable of performing that task” (para. 18). This driver of self-efficacy is known as verbal persuasion and is sometimes referred to as social persuasion.

Telling a person, “you can do this,” greatly increases their confidence to do a task. However, Siegel (2000) argued, “although verbal persuasion...can be important, it does not contribute as much as an individual’s own experiences or vicarious experiences. The short-term effects of persuasion need to be coupled with actual successes” (para. 7). For this reason, Moesgaard (2019) advocated that in order to preserve a positive sense of efficacy, it is critical to receive constructive feedback and experience successes.

The final factor upon which self-efficacy beliefs were based was physiological feedback. Bandura (1994) believed an individual’s beliefs about their sense of efficacy could be affected by mood (para. 11). According to Moesgaard (2019), “moods, emotions, physical reactions, and stress levels may influence how you feel about your personal abilities” (para. 19). For example, “sweaty hands or a dry mouth were often interpreted as signs of nervousness. Students may feel that such signs indicate they are not capable of succeeding at a particular task” (Siegel, 2000, para. 19). The way an

individual construed and gauged their emotional state was a major factor for how they developed self-efficacy beliefs. Bandura (1994) stated, “positive mood enhances perceived self-efficacy, despondent mood diminishes it” (para. 11). Although physiological feedback was the weakest of the four self-efficacy influencers (Siegel, 2000), being able to diminish or control anxiety may have a positive impact on self-efficacy beliefs (Moesgaard, 2019). As Bandura (1994) argued, “it is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted” (para. 12).

Through research, Bandura and others found that an individual’s self-efficacy also played a major role in how goals, tasks, and challenges were approached (Cherry, 2017). Bandura (1994) contended, “beliefs in personal efficacy affect life choices, level of motivation, quality of functioning, resilience to adversity and vulnerability to stress and depression” (para. 71). According to Akhtar (2008),

Self-efficacy plays a major part in determining our chances for success; in fact, some psychologists rate self-efficacy above talent in the recipe for success. We need to pay special attention to self-efficacy when setting goals to make sure that our efficacy beliefs are in line with our aims and not working against them. (para. 3)

Advantages and disadvantages. According to Bandura (1994), “the nature and scope of perceived self-efficacy undergo changes throughout the course of the lifespan” (para. 71), with a person possessing periods of high self-efficacy as well as low self-efficacy. Earley and Lituchy (1991) identified high self-efficacy as confidence in one’s own ability to affect change, while low self-efficacy hinges on a lack of confidence in

one's own ability. Because of these changes, Luman's (2011) research pointed to well-defined advantages and disadvantages of self-efficacy. Luman identified the following advantages:

- High levels of self-efficacy enhance one's accomplishments and feelings of personal well-being (Pajares, 1996);
- Building self-efficacy in multiple areas increase one's confidence in mastering new domains (Ormrod, 2008);
- Self-efficacy helps one to remain calm when approaching challenging tasks (Pajares, 1996);
- High self-efficacy increases one's willingness to experiment with new ideas (Ormrod, 2008);
- Self-efficacy encourages one to set higher expectations for future performances (Ormrod, 2008);
- High self-efficacy increases one's persistence and focus on a given task beyond previous levels (Ormrod, 2008, para. 1). (para. 1)

Luman (2011) further explained the disadvantages of self-efficacy as

- High self-efficacy beliefs do not always guarantee positive outcome expectations (Pajares, 1996);
- Self-efficacy beliefs vary greatly between individuals, which makes them very difficult for researchers to assess (Pajares, 1996);
- People with high self-efficacy and high skills may lack the resources and equipment to perform;
- Basing one's self-efficacy for a new task on previous tasks may be misleading

(Bandura, 1986);

- Personal factors and distorted memories of previous performance can distort one's self-efficacy (Bandura, 1986);
- Rather than high self-efficacy, one might have low self-efficacy following failure or setbacks that causes them to lose faith in their capabilities and to develop increased stress and depression. (para. 2)

Teacher Self-Efficacy

“Human adaptation and change are rooted in social systems” (Bandura, 1994, p. 24); therefore, thought and behavior cannot be fully appreciated unless they are examined within the social system in which they operate (Looney, 2003). This was significant for teachers as they have been tasked with creating a learning environment that promotes achievement for a variety of learning styles. As teachers took on this task, they framed ideas about their capacity to impact and produce desired outcomes. Toran (2017) supported this belief:

The self-efficacy belief of the teacher, who conducts the learning process, determines the teacher's performance in the learning process, the teaching methods and techniques he uses, classroom management teacher interactions with students, relationship with colleagues, as well as the families of the students in the institution the teacher works for. (p. 121)

For over 2 decades, teacher efficacy has been an influential variable in classroom practices (Guskey & Passaro, 1994). Based on Rotter's framework, RAND researchers were some of the first to conceive of teacher efficacy, defining it as teacher beliefs about their ability to reinforce and control their actions (Tschannen-Moran et al., 1998).

Guskey and Passaro (1994) later defined teacher efficacy as “teachers’ belief or conviction that they can influence how well students learn, even those who may be difficult or unmotivated” (p. 3). According to Looney (2003), “self-efficacy theory suggests that the efficacy beliefs that teachers formulate develop from the cognitive processing of their direct accomplishments within the classroom” (p. 22).

Gibbs (2002) postulated that four different kinds of self-efficacy determine a teacher’s inclination to teach as well as their desire to remain resilient in the face of adversity (p. 22). Gibbs suggested the following are crucial markers for teacher effectiveness:

1. Behavioral self-efficacy—teacher’s belief in his/her capability to perform specific actions to deal with specific teaching situations;
2. Cognitive self-efficacy—teacher’s belief in his/her capability to exercise control over his/her thinking in specific teaching situations;
3. Emotional self-efficacy—teacher’s belief in his/her capability to exercise control over his/her emotions in specific teaching situations; and
4. Cultural self-efficacy—teacher’s belief in his/her capability as a teacher to perform specific actions in culturally appropriate ways in specific teaching situations (p. 5).

A sense of self-efficacy as a teacher is a powerful predictor of how and whether a teacher will act. Teacher self-efficacy is about the desired learning outcomes of a teacher to improve his/her students’ learning (Türkoglu, Cansoy, & Parlar, 2017).

According to Guo, Connor, Yang, Roehrig, and Morrison (2013),

A recent study in *The Elementary School Journal* found that teacher self-efficacy

had a greater effect on the reading outcomes of 5th-grade students than teacher experience or teacher education. The study examined teachers' classroom practices to account for differences in student outcomes associated with teacher characteristics. The researchers report that teachers with a higher sense of self-efficacy provided more support for student learning and created a more positive classroom environment. (para. 2)

The researchers concluded that with regard to teacher characteristic variables, teacher practices were determined by teacher self-efficacy, and in turn, a prediction could be made about student achievement outcomes (Guo et al, 2013). Further support from the literature pointed to the RAND study conducted in 1976. According to Goodwin (2010/2011), "a RAND study...found links between student achievement and teachers' sense of efficacy" (para. 13). The teachers who lacked high self-efficacy qualities had low expectations of students, blamed students when things did not go as planned, and had a negative outlook about student learning and their behavior (Richardson, 2011, p. 18).

Proctor (1984) contended, "research on classroom and school effects has presented considerable evidence of a positive link between teacher expectations and student achievement" (p. 469). In his study on teacher self-efficacy, Proctor created a conceptual framework (see Figure 10) to illustrate its impact while underscoring the relevance of teacher self-efficacy and its impact on learners by identifying the drivers of student achievement in which teachers can control. The study suggested that teacher efficacy levels were influenced by student race, socioeconomic level, and past academic performance (Proctor, 1984). The result of all the factors in Proctor's model was the hypothesis that there was a recurrent relationship among all the components.

Conceptual Framework

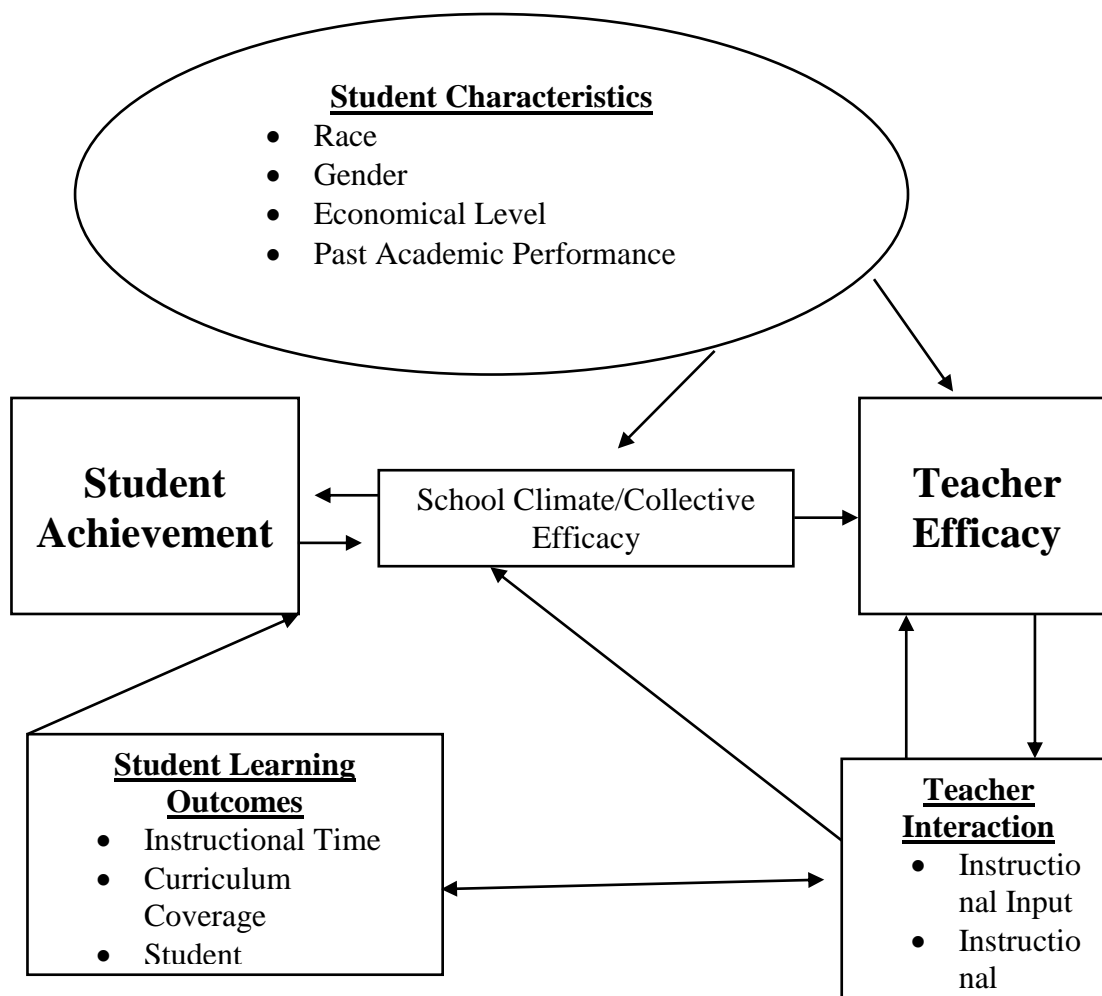


Figure 10. Conceptual Framework Adapted from Proctor (1984).

Even though there was a clear correlation between student achievement and teacher efficacy, research showed there was not an equal level of efficacy for all teaching situations (Goddard et al., 2000). Goddard et al. (2000) argued,

Teacher efficacy is content specific. Teachers feel efficacious for teaching particular subjects to certain students in specific settings, and they can be expected to feel more or less efficacious under different circumstances. Even

from one class period to another, teacher's level of efficacy may change. (p. 482)

Therefore, when assessing teacher efficacy, one should take into consideration the teaching task and its context. In addition, strengths and weaknesses based on the required task must also be considered (Goddard et al., 2000).

Ashton and Webb (1986) identified two dimensions of efficacy, general and personal, that were based on Bandura's theory of efficacy and earlier research conducted by Rand research (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). Ashton and Webb concluded that a general sense of teaching efficacy referred to "teachers' expectation that teaching can influence student learning" (p. 4). An individual's consideration of how competent their teaching ability was is considered a sense of personal teaching efficacy (Ashton & Webb, 1986). Simply put, the researchers postulated that teaching efficacy was the extent to which teachers believed that teaching could have an influence on student learning, no matter constraints like family background or individual student ability. Personal teaching efficacy was described as teacher perceptions of their own teaching abilities and how they could influence student learning (Ashton & Webb, 1986).

Even though the Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) was widely used to measure teacher self-efficacy, it only measured three components about teacher self-efficacy beliefs: instructional strategies, student engagement, and classroom management. Although these components were related to student achievement, the TSES was not a comprehensive assessment of teacher self-efficacy. Skaalvik and Skaalvik (2007) concluded that teacher self-efficacy was the most widely researched teacher belief that showed strong associations with teacher satisfaction

and intent to stay in the field. Furthermore, Kuusinen (2016), cautioned that teacher efficacy beliefs could take on different meanings that Tschannen-Moran's and Woolfolk Hoy's (2001) TSES may not detect because teacher feelings could be based on varying factors like "controllability of the outcome rather than effectiveness with students, knowledge of strategies to achieve the outcome, ability to execute research-based strategies with skill, effectiveness with every single student, or meeting external standards for performance" (p. 186).

Collective Efficacy

According to Goddard et al. (2000), "teachers are members of school organizations" (p. 482), and their shared beliefs impact the school's environment (Goddard et al., 2000). "As evidence of the impact of teacher efficacy on student achievement came to the forefront, many researchers began to wonder about the impact a teacher's sense of efficacy has on the entire organization" (Proctor, 1984, p. 33).

According to Goddard and Skrla (2006), "teacher and collective efficacy research did not develop at the same time. Collective efficacy emerged as a result of teacher self-efficacy research" (p. 217). "Collective teacher efficacy...is based on Bandura's (1977, 1986, 1997) social cognitive theory" (Goddard et al., 2000, p. 480). According to Bandura (1997b), collective efficacy was "a group's shared belief in its conjoint capabilities to organize and execute courses of action required to produce given levels of attainment" (p. 477). Goddard et al. (2000) defined collective teacher efficacy as "the teachers' opinion about whether or not their collective efforts positively affect students" (p. 480). Just like teacher self-efficacy, "collective efficacy was largely predisposed to the four sources of efficacy – performance outcomes, vicarious experiences, verbal

persuasion, and physiological feedback” (Shambaugh, 2008, p. 40).

In addition to the four sources of efficacy, Donohoo (2017) asserted that there were “six enabling conditions necessary for collective teacher efficacy to flourish” (para. 4). Donohoo argued, “while enabling conditions do not *cause* things to happen, they increase the likelihood that things will turn out as expected” (para. 3). Goddard, Hoy, and Woolfolk Hoy (2004) contended that “collective efficacy beliefs had an unequivocal impact on the thoroughness and determination with which groups decided to carry out their objectives” (p. 8).

If teachers believe they are limited in their abilities to impact student achievement, there is a strong likelihood these beliefs will play out in their methods (Goddard et al., 2004). Goddard et al.’s (2004) research further concluded, “a strong sense of collective efficacy enhances teacher self-efficacy, while weak collective efficacy beliefs undermine teacher self-efficacy” (p. 9).

Donohoo (2017) identified the six enabling conditions as,

1. Advanced Teacher Influence—defined by the degree to which teachers are provided opportunities to participate in important school-wide decisions;
2. Goal Consensus—Reaching consensus on goals not only increases collective efficacy, it also has a direct and measurable impact on student achievement
3. Teachers’ Acknowledgement About One Another’s Work—Teachers gain confidence in their peers ability to impact student learning when they have more intimate knowledge about each other’s practice;
4. Cohesive Staff—Cohesion is defined as the degree to which teachers agree with each other on fundamental issues;

5. Responsive Leadership—Responsive leaders show concern and respect for their staff and protect teachers from issues that detract from their teaching time and focus;
6. Effective Systems of Intervention—Effective systems of intervention help in ensuring that all students are successful. (para. 4)

According to Donohoo (2017), “collective teacher efficacy, as an influence on student achievement, is a contribution that comes from the school – not the home nor the students themselves” (para. 2). Donohoo pointed to a study on “Visible Learning Research”:

According to Visible Learning Research...collective teacher efficacy is beyond three times more powerful and predictive of student achievement than socio-economic status. It is more than double the effect of prior achievement and more than triple the effect of home environment and parental involvement. (para. 2)

The research further claimed that collective teacher efficacy was three times more likely to influence student achievement; more so than a student’s motivation and concentration, persistence, or engagement (Donohoo, 2017). A table from the Visible Learning Research showed factors that influence student achievement and their effect size (see Figure 11). An effect size emphasizes the difference in magnitude of given approaches for purposes of comparison. An effect size of 0 revealed that the influence had no effect on student achievement; therefore, the larger the effect size, the more powerful the influence (Donohoo, 2017).

Influence	Effect Size
Collective Teacher Efficacy	1.57
Self-Report Grades/Student Expectations	1.44
Feedback	0.75
Teacher-student relationships	0.72
Prior achievement	0.65
Socio economic status	0.52
Home environment	0.52
Parental involvement	0.49
Motivation	0.48
Concentration/persistence/engagement	0.48
Homework	0.29

SOURCE: HATTIE, J. (2012). VISIBLE LEARNING FOR TEACHERS: MAXIMIZING IMPACT ON LEARNING. NEW YORK, NY: ROUTLEDGE; AND HATTIE, J. (2016, JULY). MINDFRAMES AND MAXIMIZERS. 3RD ANNUAL VISIBLE LEARNING CONFERENCE HELD IN WASHINGTON, DC.

Figure 11. Factors Influencing Student Achievement and Their Effect Size.

Bandura (1993, 1997b) argued that the collective efficacy of teachers varies from school to school (Goddard et al., 2000, p. 480). Some schools have a climate of low teacher morale and a poor sense of collective efficacy, while other schools demonstrate a high degree of collective efficacy due to high levels of accountability and sharing of responsibilities. Bandura (1993) argued that schools with a staff who collectively judge themselves as powerless in impacting academic achievement share a group sense of ineffectiveness that can poison the school. Proctor (1984) contended,

A teacher with average efficacy beliefs who find themselves in a school with high collective efficacy will most likely increase in their self-efficacy beliefs.

However, a teacher with average efficacy who is placed in a school with low morale and a depressed sense of collective efficacy will likely have depressed or a

declining sense of efficacy. This point is especially important for new teachers.
(p. 34)

With school districts increasing their levels of accountability and the national trend towards teacher collaboration and professional learning communities, collective efficacy is an important player as teachers are no longer expected to work in isolation. Skaalvik and Skaalvik (2007) pointed to schools in Norway. According to Skaalvik and Skaalvik,

In most Norwegian schools, teachers now work in teams sharing responsibility for a larger group of students. The actual instruction is partly done by individual teachers in smaller groups and partly by pairs of teachers in a larger group. Much of the organizing and the planning are done in teacher teams. The individual teachers' self-efficacy may therefore be dependent on the functioning of the team.
(p. 613)

Collaboration and working in teams might impact a teacher's beliefs about the ability of the team and the school's faculty of teachers to demonstrate the actions necessary to produce results (Skaalvik & Skaalvik, 2007). Dewitt and Slade (2014) contended that collective teacher efficacy is ranked as one of the most important influences on school leadership today. Dewitt and Slade asserted, "it can have a marked positive impact on student learning" (para. 1). According to Skaalvik and Skaalvik (2007), "schools with a high degree of perceived collective teacher efficacy set challenging goals and are persistent in their efforts to meet these goals" (p. 614). Bandura (1994) noted that when a staff believes their determined efforts impact academic achievement regardless of a student's background, the school will realize a dramatic

benefit.

Measuring Efficacy

Locus of control. According to Tschannen-Moran and Woolfolk Hoy (2001),

The search for ways to measure teacher efficacy has not suffered from a lack of effort. In the attempt to capture the meaning of this apparently powerful construct, researchers have tried both long, detailed measures and short, general ones. The first measures were grounded in Rotter's social learning theory. (p. 784)

In 1966, Rotter devised the Internal-External Locus of Control Scale to assess dimensions of personality and measure generalized expectancies for internal versus external control of reinforcement (Guskey & Passaro, 1994, p. 2). According to Guskey and Passaro (1994),

Rotter believed people with an internal locus of control believed that their rewards were in direct relation to their actions; conversely, those with an external locus of control believe their behavior does not determine reward because recognition, reward, and accolades were outside of their control. (para. 1)

Studies found this test, a 23-item forced choice questionnaire, to be an accurate forecaster of performance (Guskey & Passaro, 1994, p. 3).

The RAND organization is credited as the first to study teacher self-efficacy using Rotter's concept on locus of control (German, 2014). According to Guskey and Passaro (1994), "early measures of teacher efficacy tended to be rather crude and simplistic" (p. 3), as in the RAND study where efficacy scores hinged upon teacher responses to just two items (Guskey & Passaro, 1994). German (2014) noted that in order for the RAND measure to assess teacher efficacy, two additional items were added to their questionnaire

(p. 42). Tschannen-Moran and Woolfolk Hoy (2001) stated, “these two items were buried in an otherwise extensive questionnaire, and yet they turned out to be among the most powerful factors examined by RAND researchers in their study of teacher characteristics and student learning” (p. 784).

The first item added to the RAND questionnaire was, “When it comes right down to it, a teacher really can’t do much because a student’s motivation and performance depends [sic] on his or her home environment” (German, 2014, p. 42). This item assessed teacher beliefs in their abilities to have an impact on student motivations regardless of the students’ external environment, like home (German, 2014). This particular item measured general teaching efficacy. According to Tschannen-Moran et al. (1998), “a teacher who expresses strong agreement with this statement indicates that environmental factors overwhelm any power that teachers can exert in schools” (p. 784).

The second item added to the RAND questionnaire was, “If I really try hard, I can get through to even the most difficult or unmotivated students” (Guskey & Passaro, 1994, p. 4). Guskey and Passaro (1994) suggested that “this item tapped the dimension of personal efficacy” (p. 4). Supporting Guskey’s and Passaro’s notion of personal efficacy, Tschannen-Moran et al. (1998) explained, “this aspect of efficacy has been labeled personal teaching efficacy (PTE); it is more specific and individual than a belief about what teachers in general can accomplish” (p. 785). They further argued, “teachers who agree with this statement indicate confidence in their abilities as teachers to overcome factors that could make learning difficult for a student” (Tschannen-Moran et al., 1998, p. 785).

The RAND survey, which was measured with a 5-point Likert scale, summed the

scores of the two added questions to measure the teacher efficacy of the participants (German, 2014).

Because of the success of the RAND studies, an influx of researchers pursued the opportunity to add to the research on measuring teacher efficacy (Tschannen-Moran et al., 1998, p. 785). Guskey and Passaro (1994) noted, “several highly reliable efficacy scales were developed based on specific theoretical models (p. 3).

In 1981, Rose and Medway created another teacher efficacy belief measure (German, 2014, p. 785). Rose and Medway (1981) contended that the study was a “gathering of preliminary data to demonstrate the correlation between teacher’s locus of control and student achievement” (pp. 375-376). According to German (2014), “this measure, related directly to Rotter’s work, evaluated teacher’s locus of control and was known as the *TLC measure*” (p. 785). Described by German as a 28-item forced-choice survey (see Figure 12), the participants were tasked with assigning responsibility for student successes and failures in specific situations by choosing from two opposing views. According to Rose and Medway, “accountability items measured the degree to which the teacher held students accountable and responsible for schoolwork and behaviors” (p. 377).

<p>Format: 28 items with a forced-choice format.</p> <p>Scoring: Half of the items describe situations of student success (I+) and half describe student failure (I-).</p>	<p>Sample Items: Suppose you are teaching a student a particular concept in arithmetic or math and the student has trouble learning it. Would this happen a. because the student wasn’t able to understand it, or b. because you couldn’t explain it very well? If the students in your class perform better than they usually do on a test, would this happen a. because the students studied a lot for the test, or b. because you did a good job of teaching the subject area?</p>
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Figure 12. Rose and Medway’s Teacher Locus of Control (Tschannen-Moran et al., 1998).

In 1981, Guskey developed a 30-item instrument which measured responsibility for student achievement (Tschannen-Moran et al., 1998). According to Guskey (1981), “precise research on teachers and teacher effectiveness would appear to require a responsibility scale more specifically oriented toward intellectual-academic achievement in the classroom” (p. 44). Guskey’s Responsibility for Student Achievement (RSA) measurement was another locus of control scale which required participants to allocate 100 points between scenarios that were in the teacher’s control and events outside of the teacher’s control (Guskey, 1981). According to Guskey (1981), “the Responsibility for Student Achievement Questionnaire (RSA) shares the aim of other locus of control scales in that it attempts to measure beliefs in internal versus external responsibility” (p. 44). Tschannen-Moran et al. (1998) noted, “the RSA scores produced a measure of how much the teachers assumed responsibility for student success and failure” (p, 786). Guskey (1981) argued, “the RSA was constructed so...separate sub-scores are obtained for beliefs in internal or self-responsibility (R+ score) for classroom successes and classroom failures (R- score)” (p. 44). The four causes Guskey (1981) identified as attributing to success or failure are “specific teaching abilities, the effort put into teaching, the task difficulty, and luck” (p. 48).

At the end of Guskey’s (1981) study, he concluded that the forced-choice format of the RSA “proved to be unsuitable because pilot testing showed most teachers believed classroom dynamics stem from more than a single causation; a subsequent scale was used and reduced to 10 points for the teacher to divide between the alternative explanations” (p. 45). Figure 13 shows samples from the measurement tool.

<p>Format: Participants are asked to give a weight or percent to each of the two choices.</p> <p>Scoring: A global measure of responsibility, with two subscales: Responsibility for student success (R+) & Responsibility for student failure (R-)</p>	<p>Sample Items: If a student does well in your class, would it probably be a. because that student had the natural ability to do well, or b. because of the encouragement you offered?</p> <p>When your students seem to have difficulty learning something, is it usually a. because you are not willing to really work at it, or b. because you weren't able to make it interesting for them?</p>
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Figure 13. Responsibility for Student Achievement (Tschannen-Moran et al., 1998, p. 786).

The Webb Efficacy Scale was introduced in 1982 (German, 2014) and was based on the foundation of two RAND studies identifying a measurable correlation between teacher efficacy and academic achievement (Ashton, Webb, & Doda, 1982). The Webb Scale was developed to produce more reliability of efficacy measurement and sought to move away from the traditional approaches of studying teacher efficacy (Ashton et al., 1982). Tschannen-Moran et al. (1998) noted that “the scale required participants to respond to seven forced-choice options which included statements related to teaching; the participants had to determine whether they agreed most strongly with the first statement or the second statement in each case” (p. 788; see Figure 14). According to Tschannen-Moran and Woolfolk Hoy (2001) “as a result, Webb and his colleagues found that teachers who scored higher on the Webb efficacy scale showed higher evidenced fewer angry or impatient interactions (less negative affect) in their teaching” (p. 787).

<p>Format: 7 items, forced choice. Participants must determine if they agree most strongly with the first or the second statement.</p>	<p>Sample Items: A. A teacher should not be expected to reach every child; some students are not going to make academic progress. B. Every child is reachable. It is a teacher's obligation to see to it that every child makes academic progress.</p> <p>A. My skills are best suited for dealing with students who have low motivation and who have a history of misbehavior in school. B. My skills are best suited for dealing with students who are academically motivated and generally well behaved.</p>
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Figure 14. Webb Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001, p. 787).

Bandura's social cognitive theory. As researchers continued studies with the locus of control theory as the foundation, others pursuing studies based on Bandura's (1977) social cognitive theory started to emerge. Uniquely different from locus of control, which measured efficacy outcomes, research grounded in Bandura's (1977) social cognitive theory focused on outcome expectancy (Tschannen-Moran & Woolfolk Hoy, 2001). According to Bandura (1999), cognitive social theory "is founded on a causal model of triadic reciprocal causation in which personal factors in the form of cognitive, affective and biological events, behavioral patterns, and environmental events all operate as interacting determinants that influence one another bi-directionally" (p. 21). Bandura (1989) asserted that social cognitive theory dealt with changes in psychosocial functioning of adults as well as what occurs during childhood.

In 1984, Ashton, Buhr, and Crocker applied Bandura's theory to teaching in which they created vignettes which described certain scenarios a teacher might experience; in addition, participants were directed to make judgments about the cause or causes of each vignette which indicated participant perceived self-efficacy (German, 2014). The purpose of the Ashton vignettes was to assess whether teacher efficacy was a

self-referenced or norm-referenced construct (Ashton et al., 1984). According to Ashton et al. (1984),

Research is needed to develop a more reliable and valid measure of the construct to enable us to clarify the nature of the construct and permit us to investigate methods for influencing the factors that contribute to teacher sense of efficacy. (p. 30)

Tschannen-Moran and Woolfolk Hoy (2001) noted,

The vignettes tested two frames of reference for judgment. While the first asked teachers to judge how they would perform in the described situation on a scale from “extremely ineffective” to “extremely effective,” the second version asked teachers to draw comparisons to other teachers, from “much less effective than most teachers” to “much more effective than most teachers.” (p. 787)

The measurement instrument known as the Personal Teaching Efficacy Vignette scale (see Figure 15), provided 50 examples of problems teachers could expect to face (Ashton et al., 1984). Ashton et al. (1984) believed “the vignettes provided scenarios teachers had most likely encountered, therefore, producing greater teacher variability” (p. 33).

<p>Format: 50 items describing problem situations concerning various dimensions of teaching, including motivation, discipline, academic instruction, planning, evaluation, and work with parents.</p> <p>Self-referenced: “extremely ineffective” to “extremely effective.” Norm-referenced: “much less effective than most teachers” to “much more effective than other teachers.”</p>	<p>Sample Items: Your school district has adopted a self-paced instructional program for remedial students in your area. How effective would you be in keeping a group of remedial students on task and engaged in meaningful learning while using these materials?</p> <p>A small group of students is constantly whispering, passing notes and ignoring class activities. Their academic performance on tests and homework is adequate and sometimes even good. Their classroom performance, however, is irritating and disruptive. How effective would you be in eliminating their disruptive behavior?</p>
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Figure 15. Ashton Vignettes (Ashton et al., 1984).

Ashton et al.’s (1984) study concluded that although internal consistency was high for self-referenced and norm-referenced instruments, the results showed a strong link between the norm-referenced approach with the efficacy scores of the RAND items.

According to Tschannen-Moran and Woolfolk Hoy (2001), “the early 1980s was a fertile time for attempts to measure teacher efficacy” (p. 788). By building on the work of Ashton and Webb (1982), Dembo and Gibson (1985) added significantly to the body of research on teacher efficacy. They created the 30-item Teacher Efficacy Scale, which was rated on a 6-point Likert scale and analyzed responses from interviews from over 200 elementary school teachers (Gibson & Dembo, 1984). They noted that two factors emerged as a result of the analysis, measuring both general teaching efficacy and personal teaching efficacy (Gibson & Dembo, 1984). “The first factor represented a teacher’s sense of teaching efficacy or belief that any teacher’s ability to bring about change is limited by factors external to the teacher, such as home environment, family background, and parental influence” (Gibson & Dembo, 1984, p. 174). According to

Gibson and Dembo (1984), “teacher’s sense of personal teaching efficacy was the second factor; this represents whether teachers believe they have the skills and abilities to impact student learning” (p. 175). Gibson and Dembo (1984) linked these factors to Bandura’s theory on self-efficacy by arguing,

Bandura hypothesizes that through life experiences persons develop a generalized expectancy about action-outcomes contingencies, as well as more specific belief in their own abilities, or self-efficacy. A person’s behavior is determined not only by general outcome expectancy, but also by a sense of personal self-efficacy. (p. 174)

In 1997, Bandura created an additional teacher efficacy measurement called the Teacher Efficacy Scale (German, 2014). Bandura (2006) argued,

There is no all-purpose measure of perceived self-efficacy. The “one measure fits all” approach usually has limited explanatory and predictive value because most of the items in an all-purpose test may have little or no relevance to the domain of functioning. Moreover, in an effort to serve all purposes, items in such a measure are usually cast in general terms divorced from the situational demands and circumstances. This leaves much ambiguity about exactly what is being measured or the level of task. (p. 307)

The scale consisted of 30 items with statements pertaining to seven subscales assessing efficacy to (a) influence decision making, (b) enlist community involvement, (c) enlist parental involvement, (d) create a positive school climate, (e) influence school resources, (f) instructional efficacy, and (g) disciplinary efficacy (Bandura, 1997a, pp. 1-2).

Each statement was measured on a 9-point scale with the following choices: nothing, very little, some influence, quite a bit, a great deal (Bandura, 1997a; see Figure 16). The questionnaire was designed for teachers to gain a clear understanding of the drivers of difficulties in their daily school activities (Bandura, 1997a). “It was Bandura’s belief that his approach provided a way to measure teacher efficacy by evaluating teacher competence over a wide range of tasks, resulting in a more comprehensive measure of teacher self-efficacy” (German, 2014, p. 45). Bandura (2006) argued, “the construction of sound efficacy scales relies on a good conceptual analysis of the relevant domain of functioning. Knowledge of the activity domain specifies which aspects of personal efficacy should be measured” (p. 310).

<p>Format: 30 items on a 9-point scale anchored at nothing, very little, some influence, quite a bit, a great deal.</p> <p>7 subscales: Influence on decision making, influence on school resources, instructional efficacy, disciplinary efficacy, enlisting parental involvement, enlisting community involvement, and creating a positive school climate.</p>	<p>Sample Items: How much can you influence the decisions that are made in your school? How much can you do to overcome the influence of adverse community conditions on student learning? How much can you do to get children to follow classroom rules? How much can you assist parents in helping their children do well in school? How much can you do to get local colleges and universities involved in working with your school? How much can you do to make students enjoy coming to school? How much can you do to get students to believe they can do well in schoolwork?</p>
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Figure 16. Bandura’s Teacher Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001).

On the heels of Bandura’s (1997a) teacher efficacy scale, Tschannen-Moran et al. (1998) proposed the Ohio State Teacher Efficacy Scale (OSTES; German, 2014, pp. 45-46). According to Tschannen-Moran and Woolfolk Hoy (2001), “several possible

formats for a new efficacy measure were explored, including a Likert-type scale similar to the Gibson and Dembo instrument and the expanded scale advocated by Bandura” (p. 795).

Originally a 52-item scale, the OSTES was reduced to 32 and 18 items respectively in a second and third study (Tschannen-Moran & Woolfolk Hoy, 2001). The 18 items that remained for the third study refined the OSTES, and the final results of the tests led to an instrument with two forms: one with 24 items and a shorter version with 12 items (Tschannen-Moran & Woolfolk Hoy, 2001). The form presents statements about organizations, people, and teaching; and the possible responses to each item includes strongly agree, moderately agree, agree slightly more than disagree, disagree slightly more than agree, moderately disagree, and strongly disagree (Hoy & Woolfolk, 1993). Tschannen-Moran and Woolfolk Hoy (2001) believed this instrument to be valid by claiming, “with either 24 or 12 items, it is of reasonable length and should prove to be a useful tool for researchers interested in exploring the construct of teacher efficacy” (p. 798). German (2014) contended that “this instrument like its predecessors, was important because it helped to shape the definition and describe the impacts of self-efficacy” (p. 82).

Measuring all teachers’ beliefs about each other, whether from the same school, region, or district, is equally as important as measuring their individual personal self-efficacy. Measuring collective beliefs was born out of efforts to measure self-efficacy. Couto and Azzi (2015) noted that The School Collective Belief Scale was drawn from the TSES created by Tschannen-Moran and Woolfolk Hoy in 2001. Couto and Azzi concluded, “the collective Teacher Belief Scale...is designed to verify the perception of

collective teacher efficacy” (para. 24). This scale followed Bandura’s guidelines designed to measure the capacity of educators working in the same school as well as measure the perceptions of collective efficacy with an emphasis on the group’s collective capabilities (Couto & Azzi, 2015).

Professional Development

According to Bloom (1981),

Some researchers have taken the position that it is the teaching, not the teacher, that is the key to the learning of students. That is, it is not what teachers are like but what they do in interacting with their students in the classroom that determines what students learn and how they feel about the learning and about themselves. (p. 21)

What teachers do in the classroom has a lot to do with training and pedagogy. In the 1960s, school districts examined post-certification training for teachers due to concerns about student achievement, and for decades little formal training was deemed necessary for teachers because they possessed more education than the general population (Trehearn, 2010). For more than 30 years, an increasing movement has existed towards improving professional development. Yoo’s (2016) research postulated that professional development education had a positive effect on teacher efficacy. In a more recent study, Gardner, Glassmeyer, and Worthy (2019) indicated that “professional development not only changed teachers’ beliefs, but also changed their classroom practices, and created a foundation for how a teacher may teach in the future” (para. 34). According to Mizell (2010), “policymakers, community leaders, and parents have a responsibility to ensure that educators within their schools engage in continuous

professional learning and apply that learning to increase student achievement” (p. 2).

Numerous research studies, articles, reports, and the like were published to offer ways to improve the quality of professional learning within schools (Sparks, 2002).

According to Avalos (2011),

During the past ten years a large number of articles published in Teaching and Teacher Education have reported on research and interventions designed for teachers, with teachers and by teachers aimed at their professional learning, with an eye on their impact on teacher and student changes. (p. 10)

According to research by Joyce, Showers, and Bennett (1987), by 1957, only 50 studies on teacher professional development had been conducted; and even though the large majority of professional development took place over the last 20 years, the amount of research has increased over the last 10 years. Darling-Hammond et al. (2016) argued, “educators and policymakers are increasingly looking to teacher professional learning as an important strategy for supporting the complex skills students need” (p. 21).

Effective professional development is a necessary component for learning and improving the pedagogies required to teach these skills (Darling-Hammond et al., 2016); and according to Karimi (2011), “research indicates that teacher participation in professional development initiatives significantly enhances or can change teachers’ beliefs about their teaching practices (p. 57). “District leaders, which includes the superintendent, the central office staff, the building-level administrators, and board members, have the task of ensuring that teachers have the support needed to accomplish the requirements of meeting individualized student growth” (Darling-Hammond et al., 2016, para. 2). One way districts can give this support is through professional

development. To strengthen educator daily performance, the driving factor must be an increase in the effectiveness of professional development (Roy, 2013).

To understand professional development, one must understand its meaning and intent. Darling-Hammond et al. (2016) defined professional development as “structured professional learning that results in changes in teacher practices and improvements in student learning outcomes” (para. 3). Likewise, Guskey (2002) described professional development as “systematic efforts to bring about change in the classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of students” (p. 381). Professional development is no less than an attempt to equip teachers with the strategies, skills, and content necessary to positively impact a teacher’s ability to bring about measurable change in their students’ academic achievement levels.

Guskey’s (2002) research yielded five levels of evaluation that improve a school’s professional development program (see Figure 17). He concluded that professional development should be a purposeful endeavor; and through evaluation, you can determine whether these activities are achieving their purpose (Guskey, 2002, p. 383).

Evaluation Level	What Questions Are Addressed	How Will Information Be Gathered?	What is Measured or Assessed?	How Will information Be Used?
1. Participants' Reactions	<ul style="list-style-type: none"> ✓ Did they like it? ✓ Was their time well spent? ✓ Did the material make sense? ✓ Will it be useful? ✓ Was the leader knowledgeable and helpful? ✓ Were the refreshments fresh and tasty? ✓ Was the room the right temperature? ✓ Were the chairs comfortable? 	<ul style="list-style-type: none"> ✓ Questionnaires administered at the end of the session 	<ul style="list-style-type: none"> ✓ Initial satisfaction with the experience 	<ul style="list-style-type: none"> ✓ To improve program design and delivery
2. Participants' Learning	<ul style="list-style-type: none"> ✓ Did participants acquire the intended knowledge and skills? 	<ul style="list-style-type: none"> ✓ Paper and Pencil ✓ Simulations ✓ Demonstrations ✓ Participant reflections (oral and/or written) ✓ Participant portfolios 	<ul style="list-style-type: none"> ✓ New knowledge and skills of participants 	<ul style="list-style-type: none"> ✓ To improve program content, format, and organization
3. Organization Support & Change	<ul style="list-style-type: none"> ✓ What was the impact on the organization? ✓ Did it affect organizational climate and procedures? ✓ Was the support public and overt? ✓ Were problems addressed quickly and efficiently? ✓ Were sufficient resources made available? ✓ Were successes recognized and shared? 	<ul style="list-style-type: none"> ✓ District and school records ✓ Minutes from follow-up meetings ✓ Questionnaires ✓ Structured interview with participants and district or school administrators ✓ Participant portfolios 	<ul style="list-style-type: none"> ✓ The organization's advocacy, support, accommodation, facilitation, and recognition 	<ul style="list-style-type: none"> ✓ To document and improve organizational support ✓ To inform future change efforts
4. Participant Use of New Knowledge and Skills	<ul style="list-style-type: none"> ✓ Did participants effectively apply the new knowledge and skills? 	<ul style="list-style-type: none"> ✓ Questionnaires ✓ Structured interviews with participants and their supervisors ✓ Participant reflections (oral and/or written) ✓ Participant portfolios ✓ Direct observations ✓ Video or audio tapes 	<ul style="list-style-type: none"> ✓ Degree and quality of implementation 	<ul style="list-style-type: none"> ✓ To document and improve the implementation of program content
5. Student Learning Outcomes	<ul style="list-style-type: none"> ✓ What was the impact on students? ✓ Did it affect student performance or achievement? ✓ Are students more confident as 	<ul style="list-style-type: none"> ✓ Student records ✓ School records ✓ Questionnaires ✓ Structured interviews with 	<ul style="list-style-type: none"> Student learning outcomes: <ul style="list-style-type: none"> ✓ Cognitive (Performance and Achievement) ✓ Affective (Attitudes and 	<ul style="list-style-type: none"> ✓ To focus and improve all aspects of program design, implementation, and follow-up

Figure 17. Guskey's Five Levels of Professional Development (Guskey, 2002).

The emphasis on professional development provided a unique opportunity needed for change within schools, if and only if schools were willing to invest the necessary time, money, and resources for effective professional development.

According to Trehearn (2010), "numbers of schools across the nation are experimenting and trying to utilize professional development for the ultimate benefit of students" (p. 16). Trehearn supported his claim by pointing to a progressive school in Madison, Wisconsin:

This district became one of the first to model excellence in professional development. Their teachers were encouraged for years to share their unique areas of expertise with their colleagues by applying for funding for planning time and

organizing professional development activities for teachers in their buildings. (pp. 16-17)

According to Davis (2015), “we need to personalize professional development to address varying teacher needs” (para. 3). Darling-Hammond and McLaughlin (1995) suggested that “traditional notions of in-service training or dissemination need to be replaced” (p. 81) and contended that effective professional development must

- engage teachers in practical tasks and provide opportunities to observe, assess and reflect on the new practices;
- be participant driven and grounded in enquiry, reflection and experimentation;
- be collaborative and involve the sharing of knowledge;
- directly connect to the work of teachers and their students;
- be sustained, on-going and intensive;
- provide support through modeling, coaching and the collective solving of problems;
- be connected to other aspects of school change. (p. 82)

Guskey and Yoon (2009) contended that effective professional development required substantial amounts of time that were well organized, intentional, and focused on content and/or pedagogy. Additionally, “the planners and facilitators must learn how to decisively measure their own effectiveness” (Guskey & Yoon, 2009, pp. 499-500).

Trehearn’s (2010) research yielded four emerging issues to consider for effective professional development. First and foremost, Trehearn identified governance as the first issue and noted its importance because it promotes shared leadership among stakeholders. Trehearn contended the second issue was administration. According to Bredeson (2000),

“within schools, the principal is in a unique position to influence implementation...and to affect the overall quality of teacher professional development” (p. 386). Trehearn argued that “school administrators are in a unique position to capitalize on their teachers’ professional strengths and needs through professional development” (p. 19).

According to Trehearn (2010), “strategic planning is a third issue necessary for successful professional development” (p. 19). Wallace (2009) postulated, “effective... training and professional development don’t just happen. Strategic planning assists with justifying and producing effective training and professional development programs” (paras. 1, 3). Trehearn believed “strategic planning involves awareness of content and how to effectively provide it” (p. 19). Last, the budget was a dynamic aspect of professional development (Trehearn, 2010). According to Trehearn, “knowledgeable administrators are successful at finding ways to save money by soliciting teacher-leaders to facilitate professional development” (p. 19). Figure 18 illustrates the connection between the four components.

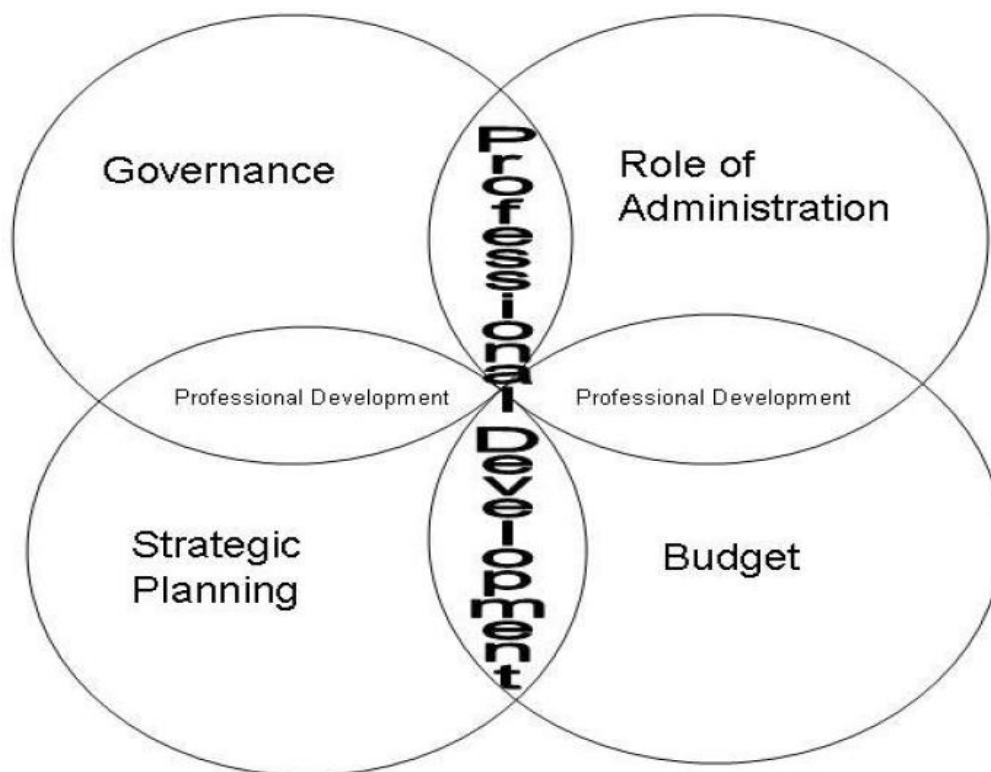


Figure 18. Professional Development Graphic (Trehearn, 2010, p. 21).

According to the National Staff Development Council’s Standards for Staff Development (2001), “in 2001, the National Staff Development Council (NSDC) revised its Standards for Staff Development” (para. 1). The decision was made to update the name from Standards for Professional Development to Standards for Professional Learning to acknowledge the necessity for teachers to take an active role in continuous improvement and learning (National Staff Development Council’s Standards for Staff Development, (2001). The three updated standards were context standards (see Figure 19) and process standards and content standards (see Figure 20).

1. Context standards describe the characteristics needed by the organization that are necessary to sustain the effects of professional development (see Figure

- 19). The NSDC outlines that content standards should:
 - a. organize adults into learning communities, skillful school and district leaders who guide continuous instructional improvement, and sources to support adult learning and collaboration;
 - b. require skillful school and district leaders who guide continuous instruction;
 - c. require resources to support adult learning and collaboration
 - d. require skillful school and district leaders who guide continuous instruction;
 - e. require resources to support adult learning and collaboration
2. Process standards delineate the delivery characteristics that facilitate successful adult change (see Figure 20). These standards must:
 - a. use disaggregated student data to determine adult learning priorities monitor progress, and help sustain continuous improvement;
 - b. use multiple sources of information to guide improvement and demonstrate its impact;
 - c. prepare educators to apply research to decision-making;
 - d. use learning strategies to appropriate goal intended;
 - e. apply knowledge about human learning and change;
 - f. provide educators with the knowledge and skills to collaborate
3. Content standards specifically identify the knowledge and skills educators need. As outlined by the NSDC (2001), the standards must (see Figure 19):
 - a. prepare educators to understand and appreciate all students, create safe,

orderly and supportive learning environments, and hold high expectations for their academic achievement. (para. 14)

Standard	Objective	Rationale
Context	Organize adults into learning communities whose goals are aligned with those of the school and district.	Staff development that has as its goal high levels of learning for all students, teachers, and administrators requires a form of professional learning that is quite different from the workshop-driven approach. The most powerful forms of staff development occur in ongoing teams that meet on a regular basis, preferably several times a week, for the purposes of learning, joint lesson planning, and problem solving.
Context	Require skillful school and district leaders who guide continuous instructional improvement.	Quality teaching in all classrooms necessitates skillful leadership at the community, district, school, and classroom levels. Ambitious learning goals for students and educators require significant changes in curriculum, instruction, assessment, and leadership practices. Leaders at all levels recognize quality professional development as the key strategy for supporting significant improvements. They are able to articulate the critical link between improved student learning and the professional learning of teachers.
Context	Require resources to support adult learning and collaboration	Well-designed professional development creates learning communities that provide mutual support and focus everyone's attention and learning on a small number of high priority goals. While the vast majority of educators' professional learning should occur during the school day in collaboration with colleagues, it is also important that they acquire knowledge from sources outside the school by attending workshops and state and national conferences. However, when most teachers' and principals' professional learning occurs away from the school, it serves as a centrifugal force that leads to fragmentation and incoherent improvement efforts.

Figure 19. Objective and Rationale of NSDC (2001) Context Standards for Professional Learning.

Standard	Objective	Rationale
Process	Use disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement	Data from various sources can serve a number of important staff development purposes. First, data on student learning gathered from standardized tests, district-made tests, student work samples, portfolios, and other sources provide important input to the selection of school or district improvement goals and provide focus for staff development efforts. This process of data analysis and goal development typically determines the content of teachers' professional learning in the areas of instruction, curriculum, and assessment.
Process	Use multiple sources of information to guide improvement and demonstrate its impact	The quality of staff development experienced by many teachers and administrators varies considerably from year to year and even from teacher to teacher in the same school. As a result, many educational leaders and policy makers are skeptical about the value of staff development in improving teaching and student learning. Well-designed staff development evaluation can address this skepticism by serving two broad purposes: (1) improving the quality of current staff development efforts, and (2) determining the effects of staff development in terms of its intended outcomes.
Process	Prepare educators to apply research to decision making	The charisma of a speaker or the attachment of an educational leader to an unproven innovation drives staff development in far too many schools. Staff development in these situations is often subject to the fad du jour and does not live up to its promise of improved teaching and higher student achievement. Consequently, it is essential that teachers and administrators become informed consumers of educational research when selecting both the content and professional learning processes of staff development efforts.
Process	Use learning strategies appropriate to the intended goal	Just as successful teaching requires that teachers be adept at using a variety of research-based instructional strategies, so too does successful staff development require that planners select learning strategies that are appropriate to the intended outcome and other situational factors. That means that staff development leaders and providers must be aware of and skillful in the application of various adult learning strategies.
Process	Apply knowledge about human learning and change	No matter the age at which it occurs, human learning is based on a common set of principles. While adults have more life experience to draw on than younger learners and are often clearer about what they want to learn and why it is important, the means by which the learning occurs is remarkably similar. Consequently, it is important that the learning methods used in professional development mirror as closely as possible the methods teachers are expected to use with their students.
Process	Provide educators with the knowledge and skills to collaborate	Some of the most important forms of professional learning and problem solving occur in group settings within schools and school districts. Organized groups provide the social interaction that often deepens learning and the interpersonal support and synergy necessary for creatively solving the complex problems of teaching and learning.
Content	Prepare educators to understand and appreciate all students, create safe, orderly and supportive learning environments, and hold high expectations for their academic achievement	Teachers' knowledge of their students is an essential ingredient of successful teaching. Staff development helps teachers to understand the general cognitive and social/emotional characteristics of students in order to provide developmentally appropriate curriculum and instruction. It provides strategies for tapping the unique learning strengths of each student. In addition, it helps teachers to use knowledge of their students' interests and backgrounds to assist them in planning meaningful, relevant lessons.

Figure 20. Objectives and Rationale of NSDC (2001) Process and Content Standards for Professional Learning.

The National Staff Development Council's Standards for Staff Development (2001) recognized that in order for staff development to be effective, these standards must be tackled concurrently (para. 1). The National Staff Development Council's Standards for Staff Development (2001) then contended,

While these standards serve as an updated guideline for professional learning, they are not a prescription for how education leaders and public officials should address all the challenges related to improving the performance of educators and their students. Instead, the standards focus on one critical issue -- professional learning. (para. 2).

No matter how effective professional development may be, research suggests that some participants will be resistant to change. One research study concluded that career teachers are often resistant to change. In Snyder's (2017) research, he stated, "one of the factors affecting effective implementation of reform is resistance to change. Veteran teachers in particular present unique challenges, and stereotypically the greatest resistance, for effective implementation of change" (p. 1). Another study suggested that teacher disengagement was a cause for lack of implementation of new strategies and methodologies. Tucker (2019) concluded, "teachers spend more time checking email than engaging with new teaching techniques.... They focus on all of the "buts" or all of the reasons they cannot do something, instead of using the time to be creative problem solvers" (para. 8). Other research pointed to the role administrators play in ensuring that teachers embrace new strategies from professional development. Still, more research pointed to the role administrators play in ensuring that teachers embrace new strategies from professional development. As mentioned previously, Trehearn (2010) argued that

school administrators are in a unique position to capitalize on their teachers' professional strengths and needs through professional development.

Despite the challenges often presented by professional development, there was a body of research which supported the notion of and suggested the impact of professional development on teacher efficacy. Yoo's (2016) research suggested professional development education does have a positive effect on teacher efficacy. Research by Calik, Sezgin, Kavgaci, and Kilinc (2012) concluded, "some factors deemed effective in developing self-efficacy include...professional development" (p. 2501). Likewise, The Share Team (2018) asserted that "allowing teacher input and providing useful professional development helps to build a culture of efficacy" (para. 11).

Best Practices

According to Scott (2015), "the past two decades have seen the emergence of a global movement that calls for a new model of learning for the twenty-first century" (p. 1). While Scott argued that no single methodology is in place to educate students for the 21st century, NC Public Schools (n.d.) contended that creativity, the ability to solve problems, a desire to learn, strong work ethic, and chances for continuous learning are necessary for today's youth to thrive in a globally competitive world. Driscoll (2018) contended, "success looks different now than it did in the past. A 21st century education gives students the skills they need to succeed in this new world" (para. 10). Greenhill (2010) argued that "critical thinking and problem solving, communication, collaboration, and creativity and innovation are the attributes that separate students who are equipped for life and work in the twenty-first century, versus those who are not prepared" (p. 9).

Arendale (2016) of the Educational Opportunity Center identified best practices

as “a broad spectrum of individual activities, guidelines, and systematic methodology which yielded positive outcomes in student attitudes and academic behaviors” (para. 3). Lemov (2015) noted systematic methodologies like using a clock to optimize classroom lessons and focus on smooth transitions impacted both academic and behavioral outcomes and expectations. According to NC Public Schools (n.d.), “best practices are inherent, and are applicable to all grade levels” (para. 2).

Arendale (2016) described best practices as an “umbrella term that embodied designations differing based on their level of evidence support; these three designations are: promising, validated, and exemplary” (p. 4). Promising practices referred to detailed information which described the practice and how it is implemented. With promising practices, data collection exists, but rigorous evaluation is incomplete (Arendale, 2016). With validated practice, also referred to as evidence-based practice, rigorous evaluation of positive student outcomes is evident (p. 4). Last, Arendale (2016) referred to exemplary practice as an education practice that had been authenticated and successfully reproduced numerous times, generating comparable positive student outcomes. Arendale (2016) concluded, “these levels of evidence supported the underpinnings of best practices” (p. 4).

Marzano. According to NC Public Schools (n.d.), “classrooms that exemplify best practices are easy to detect as soon as you enter the room” (para. 3). The students are engaged and focused, teachers choose appropriate activities, there is active engagement with teachers working with various groups of students, seating arrangements suggest multi-instructional areas, and data-driven instruction is evident (NC Public Schools, n.d.).

Alber (2015) also argued that best practices had data to back them up. Alber noted that Marzano had spent hundreds of hours observing and studying classroom practices and then used the data gathered from those observations to recommend best practices for teaching, assessing students, and fostering classroom management. In 2012, Edmentum partnered with the Marzano Research Lab led by Robert Marzano, touted as someone who regularly develops high-quality tools that put education research into practical ways an educator can put them to use (“A Study of Best Practices in Edmentum Online Solutions,” 2012., para. 3). According to “*A Study of Best Practices in Edmentum Online Solutions*” (2012), the goal of the research was to “evaluate the relationship between student learning and effective teacher pedagogical practices” (para. 3).

The Edmentum and Marzano collaboration resulted in 13 best practices across three dimensions of teacher behaviors and strategies which are connected to positive student outcomes (“A Study of Best Practices in Edmentum Online Solutions,” 2012). According to the report, “the dimensions identified were strategies involving routine events, strategies enacted on the spot, and strategies addressing content” (“A Study of Best Practices in Edmentum Online Solutions,” 2012, para. 6). The dimensions were inclusive of the 13 practices for teacher behaviors identified as best practices with correlation to positive student outcomes (see Figure 21).

Marzano Dimension: Strategies involving routine events
• Communicating course/assignment rules and procedures
• Providing students with all materials needed to complete an assignment
• Clearly presenting the goal/objective for each assignment
• Offering encouragement and positive feedback to students
• Allowing students to keep track of their learning progress
• Accessibility to students via electronic communication as well as face-to-face
Marzano Dimension: Strategies enacted on the spot
• Monitoring student work
• Knowing every student by name and being able to recognize them outside of the online environment
• Allowing students to progress through assignments at their own pace
• Providing help to understand and practice new knowledge
• Allowing students to ask questions during online course/assignment
• Treating all students equally
Marzano Dimension: Strategies addressing content
• Adding external resources to assignments aligned to local objectives

Figure 21. 13 Teacher Best Practices Positively Impacting Student Achievement as Spread Across Three Dimensions (A Study of Best Practices in Edmentum Online Solutions, 2012).

Bloom’s taxonomy. The University of Chicago Chronical (1999) noted that Benjamin Bloom was an educational theorist whose research strongly impacted the field of education. Like Marzano, who followed in Bloom’s footsteps, Bloom’s work consisted of evidence gathered across the United States and internationally that showed nearly all children can learn at high levels when their learning environment consists of best practices (University of Chicago Chronical, 1999, para. 9). According to Bloom (1981),

These views are...based on research findings in many classrooms in the U.S. and abroad. Schools can be vastly improved in the instruction they provide for all students, and these changes have important effects on students' learning, their attitudes and interests, and their mental health. (p. ix).

According to Armstrong (n.d.), “in 1956, Benjamin Bloom, with collaborators

Max Englehart, Edward Furst, Walter Hill, and David Krathwohl, published a framework for categorizing educational goals: *Taxonomy of Educational Objectives* familiarly known as Bloom's Taxonomy" (para. 2). According to Bloom (1956), the taxonomy "was created...as a way to categorize the levels of reasoning skills required in classroom situations" (para. 1). Bloom's (1956) taxonomy consisted of six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation; and each required graduated levels of deduction (para. 1). "The levels were a learning hierarchy which served as the foundational building blocks of learning objectives, including a series of verbs, or action words, like identify, recognize, interpret and distinguish" (Akresh-Gonzales, 2018, para. 3). Bloom's (1956) goal was to produce students who are thinkers rather than students who just recant material (para. 1). According to Bloom (1956), "building on knowledge and helping kids begin to apply, analyze, synthesize, and evaluate is the key to helping them grow and prosper in school and beyond" (para. 9).

According to Akresh-Gonzales (2018), "in 2001, Bloom's Taxonomy was revised (see Figure 22) to "remember, understand, apply, analyze, synthesize/evaluate, and create—to reflect both educational goals and clinical experience" (para. 3). According to "Bloom's Taxonomy of Measurable Verbs" (n.d.; see Figure 23), Bloom's Taxonomy, and his later revised taxonomy "help us describe and classify observable knowledge, skills, attitudes, behaviors and abilities" (para. 1). By creating learning objectives using measurable verbs, students knew exactly what they needed to do to show evidence of mastering the learning. "Since its publication, teachers have relied on Bloom's taxonomy to guide how they write learning outcomes, structure learning activities, and assess student learning" (Stanny, 2016, p. 1).

Revised Bloom Taxonomy

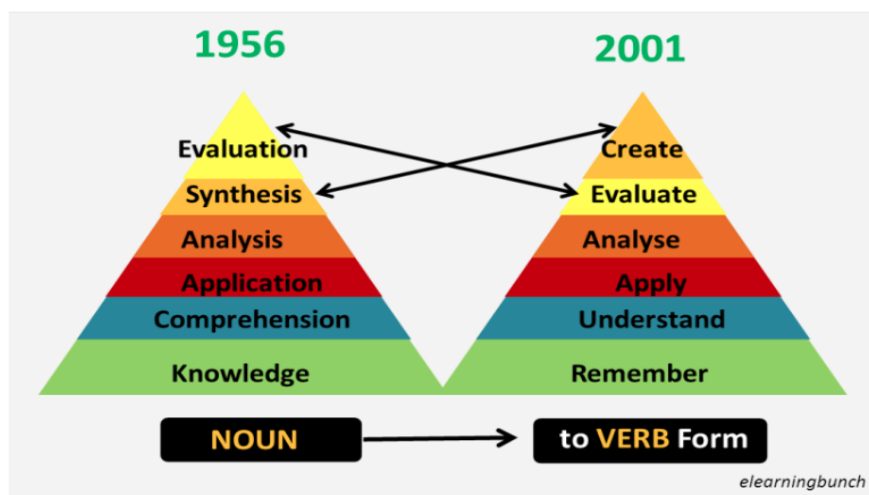


Figure 22. Bloom's Original and Revised Taxonomy (Boettcher, 2010).

Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Define	Explain	Solve	Analyze	Criticize	Design
Identify	Describe	Apply	Compare	Evaluate	Compose
Describe	Interpret	Illustrate	Classify	Order	Create
Label	Paraphrase	Modify	Contrast	Appraise	Plan
List	Summarize	Use	Distinguish	Judge	Formulate
Name	Classify	Calculate	Infer	Support	Invent
State	Compare	Change	Separate	Decide	Hypothesize
Match	Discuss	Demonstrate	Categorize	Discriminate	Write
Select	Distinguish	Experiment	Differentiate	Recommend	Compile
Locate	Predict	Relate	Discriminate	Assess	Construct
Memorize	Associate	Complete	Divide	Convince	Develop
Quote	Convert	Construct	Order	Defend	Integrate
Recall	Demonstrate	Dramatize	Subdivide	Find errors	Modify
Reproduce	Estimate	Interpret	Survey	Measure	Organize
Tabulate	Express	Manipulate	Advertise	Grade	Prepare
Tell	Indicate	Paint	Conclude	Rank	Produce
Copy	Infer	Prepare	Correlate	Score	Rearrange
Duplicate	Relate	Produce	Deduce	Select	Rewrite
Enumerate	Restate	Report	Devise	Test	Adapt
Omit	Select	Teach	Diagram	Argue	Arrange
Recite	Translate	Act	Dissect	Conclude	Assemble
Record	Cite	Administer	Estimate	Consider	Collaborate
Repeat	Generalize	Articulate	Illustrate	Critique	Devise
Retell	Give examples	Chart	Organize	Debate	Express
	Group	Collect	Outline	Distinguish	Facilitate
	Illustrate	Compute	Plan	Editorialize	Make
	Order	Determine	Question	Justify	Negotiate
	Report	Develop	test	Persuade	Originate
	Represent	Employ		Rate	Propose
	Rewrite	Explain		Weigh	Reorganize
	Show	Interview		Validate	Simulate
	Trace	List			Structure
	Transform	Operate			
		Practice			
		Predict			
		Simulate			

Figure 23. Measurable Verbs Associated with Bloom's Taxonomy (Freml, 2013).

Hattie. For more than 20 years, educational researcher John Hattie researched influences on the achievement of children in grades K-12. Hattie's research synthesized

more than 50,000 studies that dealt with student achievement and was designed to aid teachers in seeing and better understanding learning through the eyes of their students (Alber, 2015). According to Hattie (2015b), “the visible learning model asks teachers to evaluate the quality of the evidence they can provide relating to key findings” (p. 81). Five best practices taken from the visible learning model included “teacher clarity, classroom discussion, feedback, formative assessments and metacognitive strategies” (Hattie, 2009, p. 85).

Hattie (2009) argued that “teacher clarity dealt with clearly communicating the lesson—its organization, showing exemplars, and assessment criterion” (p. 126). According to Alber (2015), “when a teacher begins a new unit of study or project with students, she clarifies the purpose and learning goals, providing explicit criteria on how students can be successful” (para. 5). By clearly communicating the purpose of the concepts and skills students need to learn, teachers set clear expectations for positive student outcomes (Hattie, 2009).

Hattie (2009) identified classroom discussion as a style of teaching that included the whole class conducting a discussion. Alber (2015) argued that teachers “needed to regularly leave the front of the classroom to conduct entire class discussions in an effort to promote peer to peer learning” (para. 6). According to the Hattie (2009), “not only did classroom discussions promote the voicing of students’ opinions and thoughts, it also benefited teachers because they could quickly assess what students had learned” (p. 86).

Alber (2015) noted that “along with individual feedback (written or verbal), teachers need to provide whole-group feedback on patterns they see in the collective class’ growth and areas of need” (para. 7). Hattie and Timperley (2007) concluded that

when it came to learning and achievement, feedback ranked as one of the most influential forces (p. 81). According to Hattie's and Timperley's model for effective feedback, "feedback answered the following three critical questions—Where am I going (the goals)?, How am I going (What progress is being made toward the goal)?, and Where to next (What activities need to be undertaken to make better progress)?" (p. 87).

One of the ways teachers determined the type of feedback they needed to give was through formative evaluation. Hattie (2015a) referred to formative evaluation as an evaluation of learning while the learning was taking place. In a video on assessment-capable learners, Hattie (2015a) distinguished between formative and summative evaluation by reflecting on the following analogy:

When the cook tastes the soup, its formative. When the guests taste the soup its summative. Both sides want the soup to be good. On the one hand you're still making it, on the other hand you're serving it. It's the same kind of notion with schools. (p. 52)

The premise of visual learning focused on what works in schools (Hattie, 2009). According to David-Lang (2013), "when learning is visible, teachers clearly communicate what the lesson is about and what the students should be learning" (p. 1).

Teach Like A Champion. Doug Lemov, director of Uncommon Schools, emerged from the charter school movement with his *Taxonomy of Effective Teaching Practices*, a collection of instructional best practices assembled from observations of highly effective teachers in high-performing inner-city classrooms (Lemov, 2010, para. 1). According to Atkins (2015), Lemov "saw the significance of instructional brush strokes that most of us either missed or didn't appreciate" (p. xxi). Specifically, Lemov

(2010) studied how teachers circulated; engaged all students; targeted their questions; framed the positive; worked the clock; and waited strategically for, then stretched out student answers (Atkins, 2015, p. xxi).

The first iteration of Lemov's (2010) taxonomy manifested itself in the form of a book in 2010. "*Teach Like A Champion* offered applicable teaching tactics to help teachers become a champion in their classrooms" (Thriftbooks, 2010., para. 1). Outlining strategies that were specific and easy to put into practice the next day, the 49 best practices (referred to as techniques) in the book fostered teacher understanding via deep thought and application of how best practices play out in the classroom (Thriftbooks, 2010.). With techniques like "No Opt Out," where teachers learned how to foster an environment where reluctant learners were comfortable answering aloud, or "Do It Again," where teachers encouraged learners to not just do it again, but do it better, *Teach Like A Champion* provided actionable evidence-based techniques that impacted student achievement (Lemov, 2010).

In 2015, *Teach Like A Champion* evolved into *Teach Like A Champion 2.0.*, which added 13 additional techniques. Lemov (2015) described the latest edition as a compilation of additional best practices after observing more since the first book, but this time he focused on ways to increase rigor. Basing his work on the books *Built to Last* and *Good to Great* by Jim Collins, Lemov's (2010) focus was on techniques that distinguished a great teacher from the teacher who is good.

Lemov studied how teachers circulated; engaged all students; targeted their questions; framed the positive; worked the clock; and waited strategically for, then stretched out student answers (Atkins, 2015). There are 62 techniques in Lemov's (2015)

Teach Like a Champion 2.0. that district and state leaders could choose from to equip teachers with researched-based best practices.

Whether teachers want strategies that prepare them to check for understanding, set high expectations, gather and act on data, or guidance on pacing, *Teach Like a Champion 2.0* provides multiple opportunities that can easily be taught through professional development. There are numerous examples of techniques from the book that can easily set teachers up for success and improve academic outcomes in the classroom. For example, the *Wait Time* technique encouraged teachers to allow students more time to think before answering. Then, if the student continued having trouble, the teacher would narrate them toward the correct answer (Lemov, 2015). Another technique, *Cold Call*, required teachers to call on students regardless of whether or not their hands were raised. This technique set the tone that all students were accountable to participate in the learning process (Lemov, 2015). Additionally, a technique like *Begin with the End* allowed teachers to maximize their planning by first defining the objective, then deciding how to assess it, and last choosing proper activities and lessons (Lemov, 2015).

Lemov's training via Uncommon Schools impacted the likes of more than 18,000 principals and teachers through the purchase of his book, and the best practices outlined in his book were applied by thousands more in the classroom (Atkins, 2015, p. xxii).

Summary

Bandura's (1994) research was credited with the theory of self-efficacy we know today. Bandura (1994) defined self-efficacy as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (p. 71). Impacted by performance outcomes, vicarious experiences,

verbal persuasion, and physiological feedback, the stronger one's perceived self-efficacy, the higher the goals and challenges people set for themselves (Bandura, 1993). While self-efficacy directly addressed one's thoughts on their ability to perform, teacher efficacy was a simple idea with significant implications (Tschannen-Moran & Woolfolk Hoy, 2001).

Research findings show that professional development has a positive effect on teacher efficacy. Research by Kragler, Martin, and Kroeger (2008) suggested that while teachers were receptive to new instructional materials, they were less receptive to expected instructional changes. However, studies showed that gaining new knowledge is generally positive as it relates to teacher efficacy and positive student outcomes (Yoo, 2016). Professional development is a unique avenue that offers teachers the opportunity to learn about best practices in the industry. These practices, based on evidence and data, in turn prepare youth with the skills that are needed to meet the 21st century challenges.

This study focused on the impact that research-based best practices through professional development have on teacher efficacy and collective teacher efficacy beliefs.

Chapter 3: Methodology

Introduction

The purpose of this study was to investigate how in-service professional development with respect to applying strategies from *Teach Like a Champion 2.0* impacted teacher self-efficacy and the collective teacher efficacy beliefs at SMS.

The study focused on providing strategic, professional development training modules after assessing teacher self-efficacy and collective efficacy as well as their specific training desires and needs. This mixed-methods study assessed teacher self-efficacy and collective efficacy beliefs, provided research-based professional development, reassessed self and collective efficacy beliefs, and measured the impact. It was hypothesized that by providing research-based professional development exposing teachers to research-based best practices, teacher self-efficacy and collective efficacy would be positively impacted, furthermore impacting student achievement.

The questions addressed in this study were

1. What impact does research-based professional development have on teacher self-efficacy beliefs with respect to applying strategies/techniques from *Teach Like a Champion 2.0*?
2. What impact does research-based professional development have on collective efficacy beliefs with respect to applying strategies/techniques from *Teach Like a Champion 2.0*?

This chapter provides a detailed explanation of the mixed methods research used by addressing the (a) participants, (b) research design, (c) instrumentation, (d) procedures, (e) data collection, (f) data analysis, (g) delimitations, and (h) limitations in

this study.

Participants

Participants in this mixed methods study were selected using purposive sampling. According to Palys (2008), “purposive sampling is one of the most common sampling strategies in qualitative research” (p. 697). Purposive sampling allowed the researcher to choose those participants deemed to provide the best information that could be logically assumed to be representative of the population.

The sampling population consisted of the current instructional staff of 20 classroom teachers, one exceptional children’s resource teacher, one AIG specialist, and a media coordinator. The participants taught across Grades 6-8 in the subjects of math, science, English/language arts, social studies, health/PE, and technology. Prior to Institutional Review Board (IRB) approval, the principal of SMS was contacted to determine the school’s level of need for this study as well as data collected by the study. Based on communications with the principal, there was a desire for this study to take place. The researcher requested and received approval from the school district to conduct this study (see Appendix A).

Research Design

Mixed methods research is a methodology for conducting research that involves collecting, analyzing, and integrating quantitative (e.g., experiments, surveys) and qualitative (e.g., focus groups, interviews) research (FoodRisC Resource Centre, n.d., para. 1). Defranzo (2011) identified quantitative research as “a way to analyze a problem by generating data to attitudes, opinions, and behaviors” (para. 4). Additionally, research noted that qualitative research is used to gain insights into people's feelings and thoughts,

which may provide the basis for future practice (Austin & Sutton, 2015).

Surveys, face-to-face interviews, online polls, and systematic observations are all examples of quantitative data collection methods. Upon IRB approval, this mixed methods study used a teacher demographic survey, TSES, Collective Beliefs Scale (CBS), and Professional Development Needs Assessment (PDNA) survey. The researcher's rationale was to determine the relationship between teacher and collective efficacy beliefs and research-based professional development; therefore, the surveys were administered before and after the study.

The methods of participant observation, the classroom observation tool, and in-depth teacher interviews were used to collect qualitative data. The rationale behind these approaches was that observation was appropriate for collecting data on naturally occurring behaviors in their usual context; and in-depth interviews are optimal for collecting data on individuals' personal histories, perspectives, and experiences (Mack, Windsong, MacQueen, Guest, and Namey, 2005). In-depth interviews require researchers to lead strategic individual interviews with small numbers of participants, to better understand their perspectives on a particular idea, program, or situation (Boyce & Neale, 2006). For this study, the researcher engaged the participants by posing open-ended questions, asked follow-up questions, and probed for additional responses to elaborate about personal feelings, opinions, and experiences, while gaining insight about their attitudes and perceptions.

As a participant observer, the researcher became embedded in the action and context of the setting. According to the University of California-Davis' Department of Psychology (n.d.), "in participant observation the observer participates in ongoing

activities and records observations...becoming a ‘player’ in the action” (para. 1). For the researcher, this included presence at the location of the study, building a rapport with the participants, and spending the time required interacting to get the data needed (Guest, Namey, & Mitchell, 2013). As a participant observer, different types of data were available depending on what role the researcher played. Figure 24 reveals some common participant observation activities arranged along a two-axis grid in which the x-axis is the degree of participation relative to the degree of observation, while the y-axis is the degree of revelation or concealment of the researcher role (Guest et al., 2013).

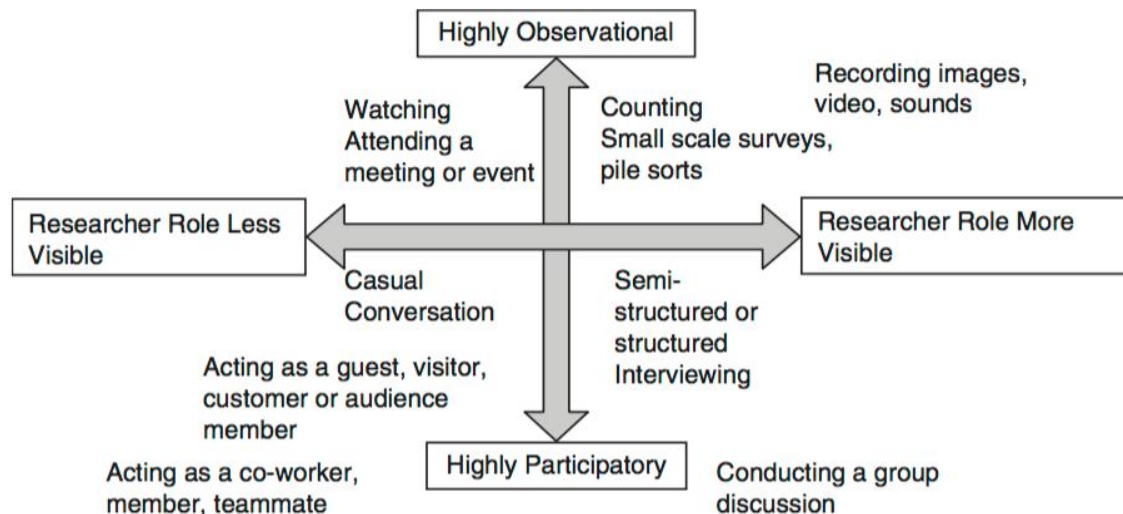


Figure 24. Participant Observation Continuums (Guest et al., 2013).

Instrumentation

Multiple instruments were used for this study; each was administered as a paper-and-pencil self-reporting survey. The specific instruments used for this study included an initial teacher demographic information survey, the TSES, the CBS, a PDNA survey, and a Classroom Walkthrough Observation Tool.

The initial survey gathered basic teacher demographic information from the

participants (see Appendix B). Targeting the characteristics participants should possess might assist with the study (Koenig, 2016). Therefore, data such as years of teaching experience, highest level of education completed, subject area taught, and areas of certification were gathered from this survey.

TSES. The second instrument used in this study was the TSES created by (Tschannen-Moran & Woolfolk Hoy, 2017; see Appendix C). According to Tschannen-Moran and Woolfolk Hoy (1993), “the Teacher Sense of Efficacy Scale asks teachers to assess their capability concerning instructional strategies, student engagement, and classroom management” (para. 3). Chang and Engelhard (2015) asserted the researchers “created and validated the Ohio State Teachers’ Sense of Efficacy Scale (OSTES) with factor analysis, and it has been considered as more congruent with self-efficacy theory than other measures have been” (p. 2).

This scale included three dimensions: (a) efficacy for instructional strategies (IS), which denoted teachers’ sense of efficacy in developing and implementing IS to meet students’ needs; (b) efficacy for classroom management (CM), denoting teachers’ sense of efficacy in keeping classroom order and helping students follow rules; and (c) efficacy for student engagement (SE), which denoted teachers’ sense of efficacy in engaging and motivating students to learn.

(Tschannen-Moran & Woolfolk Hoy, 2001, para. 1).

This 24-item questionnaire used a 9-point Likert scale, and the responses were anchored with the descriptors *1-nothing*, *3-very little*, *5-some influence*, *7-quite a bit*, and *9-a great deal* (Heneman, Kimball, & Milanowski, 2006). The researcher requested and received approval to use this questionnaire (see Appendix D).

To address construct validity, Tschannen-Moran and Woolfolk Hoy (2001) contended,

We examined construct validity by assessing the correlation of this new measure with other existing measures. Participants in study 2 were asked to respond not only to the OSTES, but also to the RAND items, the How and Woolfolk (1993) 10-item adaptation of the Gibson and Dembo TES, the pupil control ideology form and the work alienation scale. As expected, the total scores on the OSTES were positively correlated to both the RAND items...as well as both the personal teaching efficacy (PTE) factor of Gibson and Dembo, and the general teacher efficacy (GTE) factor. (p. 798)

Tschannen-Moran and Woolfolk Hoy concluded the scale “could be considered reasonably valid and reliable” (p. 801), and “superior in content to the previously developed measures of TSE” (p. 802). According to Tschannen-Moran and Woolfolk Hoy, “the findings of Study 2 were encouraging. The 18-item instrument had good validity and the factors were conceptually sound representations of the various tasks of teaching” (p. 798).

CBS. The CBS was used to assess the “collective” perceptions of the participants as it relates to their belief in their collective ability to impact student learning (see Appendix E). The researcher requested and received approval to use the survey (see Appendix F). According to Tschannen-Moran and Woolfolk Hoy (2001),

The collective sense of efficacy in a school is the sense that the faculty holds that it has the capacity to achieve meaningful student learning in spite of whatever obstacles may be present that might make learning difficult. It includes an

assessment of the collective perception of the school's capacity for student discipline, as well as for instructional practices. (sec. 3)

Like the TSES, this 12-item questionnaire used a 9-point Likert scale; and the responses were anchored with the descriptors *1-nothing*, *3-very little*, *5-some influence*, *7-quite a bit*, and *9-a great deal*. According to Tschannen-Moran and Woolfolk Hoy (2001), "construct validity of the Collective Teacher Beliefs Scale was established through factor analysis. Two strong factors emerged that were moderately correlated. When a second order factor analysis was conducted, the two factors formed a single factor" (para. 1).

PDNA survey. The PDNA survey was designed by the researcher to target the professional development preferences and needs of the staff (see Appendix G). Questions on the survey addressed preferences for location, length of time, format, and delivery of training. To ensure construct validity, this instrument was given to three experts in creating needs assessment surveys for inter-rater reliability. The experts determined that the instrument measured what the researcher had designed it to do; and once taken, the instrument gave the researcher the data needed to answer the research questions.

Classroom Walkthrough Observation Tool. The Classroom Walkthrough Observation Tool was designed by the researcher as an instrument to capture notes and behaviors observed as it relates to participants implementing the concepts/strategies learned during in-service trainings (see Appendix H). To ensure construct validity, this instrument was given to three experts in creating classroom observation instruments for inter-rater reliability. The experts determined the instrument measured what the

researcher had designed it to do; and once taken, the instrument gave the researcher the data needed to answer the research questions.

Procedures

Prior to IRB approval, the principal was contacted to determine the school's level of need for this study as well as a need for the data collected by the study. Based on communications with the principal, there was a desire for this study to take place.

After IRB approval, the researcher met with the selected participants to explain the purpose of the research and the data collection process and provided clarity for unanswered questions about the process. Consent forms were distributed to participants (see Appendix I).

The participants were administered both pre- and post-surveys. The initial surveys were administered to all participants over a 2-week period to ensure each survey had been completed by each participant. The researcher answered participant questions related to the survey to provide clarity and ensure the accuracy of responses.

Surveys administered during week 1 of the study included the initial teacher demographic survey and the PDNA. During week 2 of the study, the TSES and the CBS were administered.

On Monday of week 3, teachers attended in-service professional development facilitated by the researcher to learn two research-based concepts/strategies from *Teach Like A Champion 2.0*. Tuesday through Thursday of each week, the participants implemented the strategies in their classrooms. Weeks 4-8 were a continuation of participants acquiring two new research-based concepts/strategies from in-service professional development on Mondays, with Tuesday through Thursday being classroom

implementation. Each Friday, the researcher met with teachers to discuss successes and failures of concept/strategy implementation and provided clarity and redirection as needed.

Weeks 3-8 served as the implementation phase of the concepts/strategies from the in-service training. During weeks 9- 17, the researcher and the instructional coach continued to complete classroom walkthrough observations, checking for fidelity of implementation of concepts/strategies. Field notes taken by the researcher and instructional coach captured a snapshot of the fidelity of the concepts/strategies observed during the walkthrough.

At the conclusion of the study, the TSES and the CBS were readministered during week 18. The same initial format was used to administer these two instruments over a 1-week period. The researcher displayed the disaggregated data in graph format and shared with the respondents. The final step was an in-depth exit interview conducted by the researcher to gather additional feedback and perceptions on the impact of the in-service training.

Data Collection

The data collection process encompassed a 13-week period. Data collected included basic teacher demographic information which consisted of questions pertaining to years of teaching experience, highest level of education completed, subject area taught, and areas of certification. Data representing both the participants' personal and collective beliefs about their abilities to impact student learning were collected from the TSES and CBS. Additionally, data were collected from the PDNA survey and the walk-through observation instrument with field notes.

The primary use of the data collected was to determine a baseline of teacher self-efficacy and collective efficacy beliefs before and after the targeted professional development modules were implemented. At the conclusion of the research period, the TSES and CBS were readministered to assess and compare the outcomes.

The confidentiality of each participant was ensured during the data collection process by assigning each participant a code. All participant names from audio transcripts of interviews were replaced with the appropriate assigned code. The researcher maintained confidentiality of all data collected by keeping instruments and responses in a secure, locked drawer. At the completion of the study, the researcher shredded and destroyed all documentation from the research study.

Data Analysis

Multiple sources of data were collected for this study, including rating scales, walk-through observations, and surveys. Data collected from these sources were entered into Excel spreadsheets and displayed as tables and graphs to capture, display, and compare the data from the beginning and end of the study.

Data captured from the initial demographic survey were analyzed to capture the diversity of each participant's background.

TSES. The TSES was administered before and after the study to determine the level of teacher self-efficacy before and after targeted professional development modules were implemented. This scale was created to measure teacher beliefs in their ability impact instruction, student engagement, and classroom management. The data collected from the TSES were scored on a 9-point response scale; and the responses are anchored with the descriptors *1-nothing, 3-very little, 5-some influence, 7-quite a bit,*

and 9-a great deal. The researcher scored and analyzed the responses using the scoring directions and guidelines that accompanied the survey. Furthermore, the researcher used a paired-sample *t* test to analyze and compare the responses from the pre- and post-survey.

CBS. The CBS was administered to assess the “collective” perceptions of the participants as it relates to their beliefs in their collective ability to impact student learning. The data collected from the CBS were scored on a 9-point response scale; and the responses are anchored with the descriptors *1-nothing, 3-very little, 5-some influence, 7-quite a bit, and 9-a great deal.* The researcher scored and analyzed the responses using the scoring directions and guidelines for the survey. Additionally, the researcher used a paired-sample *t* test to analyze and compare the responses from the pre- and post-survey.

PDNA. The PDNA survey was administered to determine the immediate pedagogical needs of the participants. The data from this survey were presented in tabulated form and analyzed by the researcher and instructional coach to target critical instructional needs.

Classroom Walkthrough Observation Tool. The Classroom Walkthrough Observation Tool was used three times per week to capture notes and participant behaviors observed by the researcher and instructional coach as it relates to participants implementing the concepts/strategies learned during in-service trainings. The data from this instrument were analyzed weekly to assist participants with proper implementation of concepts/strategies from in-service training. The data were also analyzed to capture the continuity of use and fidelity of implementation of the concepts/strategies learned during

in-service trainings.

Delimitations

The sampling population for this study consisted of 15 teachers at a middle school located in the eastern region of North Carolina. The composition of the teachers was made up all staff who directly teach students in some capacity at the middle school. Therefore, the results of the study were not reflective of a diverse population of middle schools; it was only representative of the middle school sampled for the study.

Limitations

Because the sampling population for this study consisted of 15 teachers at a middle school located in the eastern region of North Carolina, the results of this study were limited to one middle school in the state and are not reflective of all middle schools in the state of North Carolina.

Summary

The purpose of this study was to investigate how research-based professional development impacted teacher self-efficacy and collective efficacy beliefs at SMS. The study focused on providing strategic, professional development training modules after assessing teacher self-efficacy and collective efficacy and their specific training desires and needs. This mixed methods study assessed teacher self-efficacy and collective efficacy, trained them, reassessed their self-efficacy and collective efficacy, and measured the professional development's impact on their efficacy.

Chapter 4: Findings

This study examined the relationship between teacher self-efficacy and collective efficacy beliefs and research-based professional development. This chapter presents the results of the data collection for the two research questions used to examine these variables.

The research study questions were

1. What impact does research-based professional development have on teacher self-efficacy beliefs with respect to applying techniques from *Teach Like a Champion 2.0*?
2. What impact does research-based professional development have on collective efficacy beliefs with respect to applying techniques from *Teach Like a Champion 2.0*?

The results presented in this chapter include descriptive statistics, inferential statistics, and qualitative analyses. The section of descriptive statistics provides data on demographics and a synopsis of teacher responses to the PDNA. The inferential statistics section contains paired-sample *t*-test data from the TSES and CBS used in this study. In addition, qualitative data from teacher interviews are presented.

Demographic Data

The demographic data presented were comprised of responses from the 15 teachers in the sampling population. The Teacher Demographic Survey collected basic demographic information from the participants that included years of teaching experience, highest level of education completed, subject area taught, ethnicity, and areas of certification. Table 1 provides the demographic data by gender.

Table 1

Participant Demographics: Primary Position, Credentials, and Experience by Gender

		Gender		
		Male	Female	Total
		N	N	N
Primary Position	MS Math	1	3	4
	MS English/LA	1	2	3
	MS Social Studies		1	1
	MS Science		2	2
	MS Technology			
	Other	2	3	5
	Total	4	11	15
NC Licensure	Licensed	3	8	11
	Provisional License		3	3
	Not Licensed	1		1
	Total	4	11	15
Years of Teaching Experience	0-3 yrs		5	5
	4-6 yrs		1	1
	7-10 yrs	1		1
	10+ yrs	3	5	8
	Total	4	11	15
Years Teaching MS	0-3 yrs	1	4	5
	4-6 yrs	1	1	2
	7-10 yrs		3	3
	10+ yrs	2	3	5
	Total	4	11	15

The total sample was comprised of 15 teachers of which 11 (74%) are female and four (26%) are male. The sampling population covered five subject areas taught to include English, math, science, social studies, and other (elective) classes. The average teacher was licensed, with 14 (93%) holding either a full or provisional license. Eight (53%) had 10 years or more of teaching experience, followed by five (33%) with 0-3 years of teaching experience.

Table 2 presents demographic data by gender about ethnicity and degrees

completed.

Table 2

Participant Demographics: Ethnicity and Degree by Gender

		Gender		
		Male	Female	Total
		N	N	N
Ethnicity	African-American		6	6
	American Indian			
	Caucasian	3	4	7
	Hispanic		1	1
	Multi-Racial			
	Other	1		1
	Total	4	11	15
Highest Degree	BA/BS	1	6	7
	MS/MA		5	5
	Specialist	2		2
	Doctoral	1		1
	Total	4	11	15

As it related to ethnicity, six (40%) identified as African-American, seven (46%) identified as Caucasian, one (.06%) identified as Hispanic, and one (.06%) identified as Other. Eight of the 15 participants (53%) held an advanced degree.

Professional Development Data

The professional development needs of the sample group were measured by administering a PDNA. The PDNA was designed by the researcher to target the professional development preferences and needs of the staff. The seven questions on the survey measured several constructs: the group's attitudes and beliefs about professional development courses taken in the past year, the quality and preferred method of delivery, beliefs about beneficial professional development opportunities,

and professional development priorities. Additionally, the survey collected data about professional development topics the participants believed would be beneficial. Two of the questions required a short answer response.

Table 3 presents data related to participant attitudes and beliefs about professional development courses taken within the past year.

Table 3

Professional Development Courses: Attitudes and Beliefs

		N	%
The professional development course is relevant to my current job.	Strongly Disagree		
	Disagree	1	6.67
	Agree	11	73.33
	Strongly Agree	3	20.00
	Total	15	100.0
The professional development courses I have attended helped me do my job better	Strongly Disagree		
	Disagree	2	13.33
	Agree	12	80.00
	Strongly Agree	1	6.67
	Total	15	100.0
The professional development courses I have attended helped me better help my students in the classroom	Strongly Disagree		
	Disagree	3	20.00
	Agree	11	73.33
	Strongly Agree	1	6.67
	Total	15	100.0

To measure the group's attitudes and beliefs about professional development courses taken in the past year, the participants were asked to rate how much they agreed with statements about professional development. Participants responded to the questions by choosing strongly disagree, disagree, agree, and strongly agree. Of the 15 participants, 14 (93.33%) agreed or strongly agreed that professional development courses taken in the past year were relevant to their current job. When asked if

professional development courses attended in the past year helped them do their job better, 86.67% (n=13) agreed or strongly agreed, while 13.33% (n=2) disagreed. Eighty percent (n=12) agreed or strongly agreed that the professional development courses they attended in the past year helped them better help their students in the classroom. Twenty percent of the participants (n=3) disagreed and did not believe the professional development courses helped them to better help their students.

Questions 2 and 3 on the PDNA measured beliefs about the quality of professional development sessions and the participants' preferred method of delivery. Table 4 presents the data about the quality and delivery preferences.

Table 4

Professional Development Quality and Preferred Method of Delivery

		N	%
Overall, what grade would you give for the quality of the professional development sessions that you attended this year?	Failure	1	6.67
	Poor	4	26.67
	Average	10	66.67
	Outstanding		
	Total	15	100.00
I prefer to participate in professional development that is	Delivered online/self-paced	2	13.33
	Study groups or learning communities	2	13.33
	Traditional face to face	3	20.00
	Blended	8	53.33
	Total	15	100.0

As it related to participant attitudes and beliefs about the overall quality of the past year's professional development sessions, 66.67% (n=10) rated the quality as average, 26.67% (n=4) felt the quality was poor, and 6.67% (n=1) believed the quality was a failure. None of the participants believed the quality to be outstanding.

The participant group was also asked about preferences for professional

development delivery methods. Eight participants (53.33%) preferred a blend of delivery methods. Three participants (20%) preferred the traditional, face-to-face method, two (13.33%) preferred delivery via study groups or learning communities, and two (13.33%) preferred a self-paced, online method of delivery.

Question 4 asked participants to select professional development opportunities from which they could benefit. The participants were presented with 12 topics and could choose as many as applicable, as they were not limited to one topic. Figure 25 presents the data related to participant choices.

Beneficial Professional Development Opportunities

	Participant															Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Student engagement & active participation	1	0	1	0	1	1	1	1	0	1	0	0	0	1	1	9
Effectively addressing student errors	1	1	0	1	0	1	0	0	1	1	1	1	0	1	0	9
Holding students accountable	0	0	1	1	0	0	1	1	1	1	1	0	1	1	1	10
Setting high academic expectations	1	1	0	0	1	1	0	1	0	0	0	1	1	0	0	7
Pacing	1	0	0	1	0	0	0	0	1	0	1	0	1	1	0	6
In class observations	1	0	1	0	0	0	1	0	0	0	0	1	0	0	0	4
Building trust amongst your students	1	0	0	1	1	0	1	0	0	0	0	0	1	0	0	5
Classroom climate	1	0	0	1	1	0	0	0	1	0	1	1	1	0	1	8
Understanding and using data to improve practice and learning	1	0	1	0	0	0	1	1	1	1	0	1	0	1	1	9
Modeling	0	0	0	1	0	0	0	0	1	0	1	0	0	1	1	5
Formative Assessment	1	1	1	1	0	1	1	1	1	0	0	1	1	0	0	10
Lesson structure	1	0	0	1	1	0	1	0	0	0	1	1	0	1	0	7

Figure 25. Beneficial Professional Development Opportunities.

Of the 12 choices presented, “Holding Students Accountable” and “Formative Assessments” were each selected by 10 participants. Nine participants selected “Student Engagement and Active Participation,” “Effectively Addressing Student

Errors,” and “Understanding and Using Data to Improve Practice and Learning” as beneficial. “Classroom Climate” was selected by eight participants, while “Setting High Expectations” and “Lesson Structure” were selected by seven participants. The data showed that six participants selected “Pacing,” five participants selected “Building Trust Amongst Your Students” and “Modeling,” and “In Class” observation was selected by four participants.

Question 5 asked participants to choose from six areas of professional development and select which area(s) would be a personal priority for improvement. Participants could choose as many as applicable, as they were not limited to one priority. Figure 26 presents the data related to participant choices about personal priorities for professional development.

Professional Development Priorities

	Participant															Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Closing achievement gap	1	1	0	0	0	1	1	0	0	0	1	0	0	0	1	6
Literacy strategies	0	1	1	0	0	1	0	1	0	0	0	0	0	1	0	5
Research-based instructional best practices	1	0	0	1	1	0	0	1	1	1	1	1	1	1	0	10
Helping students develop critical thinking skills	0	1	1	0	1	0	1	0	0	0	1	1	0	0	1	7
Engaging and motivating students	0	1	1	1	1	1	0	1	1	1	0	1	1	0	1	11
Your content area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 26. Professional Development Priorities.

Eleven participants selected “Engagement and Motivating Students” as a top personal priority for improvement. Ten participants chose “Research-based Instructional Best Practices,” and seven participants chose “Helping Students Develop Critical Thinking Skills.” “Closing the Achievement Gap” was selected as a top personal priority for six participants, and “Literacy Strategies” was chosen by five. No

participants selected “Your Content Area” as a top personal priority for professional development.

The final two questions on the survey required a short answer response. When asked to describe what a beneficial professional development session might look like, three themes emerged: professional development should be meaningful, professional development should be useful, and professional development strategies should be easily transferrable/applicable to the classroom.

Thirteen participants (87%) said that a beneficial professional development session should be meaningful. According to responses from the participants, meaningful professional development should be relevant to their current content areas, should be aligned with the school’s current goals, and should offer opportunities to collaborate with other teachers. The notion of professional development being meaningful is supported by research. Yaron (2017) contended that meaningful professional development “at its best, is purposeful, relevant...and brings people together to fulfill a vision of what schools and districts can be” (para. 8). Darling-Hammond, Hyler, and Gardner (2017) concluded that meaningful professional development should be “content focused and support collaboration” (para. 4).

Nine participant (60%) responses indicated that an element of beneficial professional development is that it is useful. Participant responses pointed to useful professional development as sessions all teachers could use regardless of content area, asked teachers about what they need from professional development, and simple and effective strategies that could be implemented immediately after professional development training. According to Yaron (2017), professional development content

should be “transferable to every teacher's classroom” (para. 10). Additional research by Darling-Hammond and McLaughlin (1995) supported the idea that professional development should engage teachers in practical tasks and be participant driven.

When asked to describe a past professional development session that was beneficial, participants shared past experiences that included having access to materials that could be used in the classroom, strategies that addressed the needs of students, and hands-on training. Fifteen participants (100%) noted the importance of providing materials that could be used in the classroom from professional development. Research by Davis (2015) contended that the best professional development classes provided teachers with “the necessary tools to use within two weeks of completing that training” (para. 2). Eleven participants (73%) expressed the importance of professional development that equipped them to address student needs; they wanted strategies and skills that impacted student learning. Sparks and Hirsh (1997) found that effective professional development should focus of student needs. According to Harris’s (2000) article on identifying the professional development needs of teachers, “the hands-on approach involving interactivity, discussion, and feedback, etc.—leads to a more engaging professional development experience” (p. 28).

Teacher Self-Efficacy Data

The TSES (Tschannen-Moran & Woolfolk Hoy, 2017) was administered to the participants twice, once at the start of the research study and once at the conclusion of the research study, to assess their sense of efficacy. The survey consisted of 24 questions (long format). Eight questions measured participant beliefs about instructional strategies (questions 7, 10, 11, 17, 18, 20, 23, and 24); eight questions measured beliefs about

student engagement (questions 1, 2, 4, 6, 9, 14, and 22); and eight questions measured beliefs about classroom management (questions 3, 5, 8, 13, 15, 16, 19, and 21). The 24-item questionnaire used a 9-point Likert scale, and the responses were anchored with the descriptors *1-nothing*, *3-very little*, *5-some influence*, *7-quite a bit*, and *9-a great deal*.

Paired-samples *t*-tests were conducted to compare participant self-efficacy beliefs at the start of the research study and the conclusion of the research study for each of the components of the TSES and the total score. The data in Table 5 represent the results of the total score statistics for the post and pretests. Results show participants scored higher on the posttest ($M=7.3556$, $SD=.61052$) as opposed to the pretest ($M=6.35833$, $SD=.871706$).

Table 5

TSES Total Score Statistics

	Mean	N	Std. Deviation
Post-TSES Total Score	7.3556	15	.61052
Pre-TSES Total Score	6.35833	15	.871706

Table 6 shows the results of the paired-sample *t* test for Post-TSES and Pre-TSES total scores.

Table 6

Paired-Sample t Test for Post-TSES and Pre-TSES Total Scores

	Paired Differences		t	df	Sig. (2-tailed)
	Mean	Std. Deviation			
Post-TSES Total Score – Pre-TSES Total Score	.997222	.8478	4.55	14	.000

The average total score means increased on average .997 points ($SD = .848$). This

difference in the posttest total score is significantly different from the pretest total score with $t(14) = 4.55, p < .001$.

The questions on the TSES were classified into three components: Student Engagement, Instructional Strategies, and Classroom Management. Table 7 represents the results of the total score statistics for the post and pretests for each of the three components.

Table 7

Results of Components from Post-TSES and Pre-TSES

	Mean	N	Std. Deviation
Pair 1 Post-TSES Total Efficacy in Student Engagement Score	7.0833	15	.70183
Pre-TSES Total Efficacy in Student Engagement Score	6.0833	15	.97131
Pair 2 Post-TSES Total Efficacy in Instructional Strategies Score	7.7750	15	.49821
Pre-TSES Total Efficacy in Instructional Strategies Score	6.3750	15	.84118
Pair 3 Post-TSES Total Efficacy in Classroom Management Score	7.2083	15	.81513
Pre-TSES Total Efficacy in Classroom Management Score	6.6167	15	1.02586

The results for the Student Engagement component showed participant Post-TSES scores were higher ($M=7.0833, SD=.70183$) than Pre-TSES ($M=6.0833, SD=.97131$). Results for the Instructional Strategies component also showed Post-TSES scores ($M=7.7750, SD=.49821$) were higher than Pre-TSES scores ($M=6.3750, SD=.84118$). Likewise, results for the Classroom Management component showed Post-TSES scores ($M=7.2083, SD=.81513$) were higher than Pre-TSES scores ($M=6.6167, SD=1.02586$).

Table 8 presents the results of the paired-sample t test which reflects the mean difference of the total scores of the three components for the Post-TSES and Pre-TSES. For the Student Engagement component, the total score mean increased on average 1.0

point ($SD=.93780$). This difference in the posttest total score was significantly different from the pretest total score with $t(14) = 4.13, p = .001$. As it related to the Instructional Strategies component, the total score mean increased on average 1.4 points ($SD=.82943$). This difference in the posttest total score was significantly different from the pretest total score with $t(14) = 6.537, p < .001$. The data for the Classroom Management component resulted in a total score mean increase on average .591 points ($SD=.94546$). This difference in the posttest total score was significantly different from the pretest total score with $t(14) = 2.424, p = .029$.

Table 8

Paired-Sample t-Test Results for Post-TSES and Pre-TSES Component Scores

	Mean	Std. Deviation	Paired Differences			
			Mean	<i>t</i>	df	Sig. (2-tailed)
Post-TSES Total Efficacy in Student Engagement Pre-TSES Total Efficacy in Student Engagement	1.00000	.93780	.24214	4.130	14	.001
Post-TSES Efficacy in Instructional Strategies Pre-TSES Total Efficacy in Instructional Strategies	1.40000	.82943	.21416	6.537	14	.000
Post-TSES Efficacy in Classroom Management Pre-TSES Efficacy in Classroom Management	.59167	.94546	.24412	2.424	14	.029

Collective Beliefs Data

The CBS was used to assess the “collective” perceptions of the participants as it related to their belief in their collective ability to impact student learning. Like the TSES,

a paired-samples *t* test was conducted to compare participant collective efficacy beliefs at the start of the research study and the conclusion of the research study. This 12-item questionnaire used a 9-point Likert scale; and the responses were anchored with the descriptors *1-nothing, 3-very little, 5-some influence, 7-quite a bit, and 9-a great deal*.

The questions on the CBS were classified into three components: Collective Teacher Efficacy Beliefs, Collective Teacher Beliefs About Instructional Strategies, and Collective Teacher Beliefs About Student Discipline. Table 9 presents the data related to participant collective beliefs in these three components.

Table 9

Means and Standard Deviation for Post-CBS and Pre-CBS

		Mean	N	Std. Deviation
Pair 1	Post-Collective Teacher Efficacy Score	7.3056	15	.70124
	Pre-Collective Teacher Efficacy Score	6.8111	15	1.21803
Pair 2	Post-Collective Teacher Instructional Strategies Subscale Score	7.4556	15	.66805
	Pre-Collective Teacher Instructional Strategies Subscale Score	7.0222	15	1.35674
Pair 3	Post-Collective Teacher Student Discipline Subscale Score	7.1556	15	.82005
	Pre-Collective Teacher Student Discipline Subscale Score	6.5911	15	1.20082

Results from the Collective Teacher Efficacy Beliefs component showed participants scored higher on the CBS posttest ($M=7.3056$, $SD=.70124$) as opposed to the CBS pretest ($M=6.8111$, $SD=1.2180$). The data from the CBS Instructional Strategies component showed participants scored higher on the posttest ($M=7.4556$, $SD=.66805$) as

opposed to the pretest ($M=7.0222$, $SD=.66805$). Data from the CBS Student Discipline component showed participants scored higher on the posttest ($M=7.1556$, $SD=.82005$) as opposed to the pretest ($M=6.5911$, $SD=.1.20082$).

Table 10 reflects the mean difference of each of the three components for the Post-CBS and Pre-CBS tests. The data for the Collective Teacher Efficacy component showed a mean increase on average .49444 points ($SD=.97665$).

Table 10

CBS Mean Difference

	Mean	Std. Deviation	<i>t</i>	df	Sig. (2- tailed)
Post-Collective Teacher Efficacy Score – Pre-Collective Teacher Efficacy Score	.49444	.97665	1.961	14	.070
Post-Collective Teacher Instructional Strategies Subscale Score – Pre-Collective Teacher Instructional Strategies Subscale Score	.43333	1.21629	1.380	14	.189
Post-Collective Teacher Student Discipline Subscale Score – Pre-Collective Teacher Student Discipline Subscale Score	.56444	.91482	2.390	14	.031

This difference in the posttest is not significantly different from the pretest total score with $t(14) = 1.961$, $p = .070$. The data for the CBS Instructional Strategies component showed a mean increase on average .43333 points ($SD=1.21629$). This difference in the posttest is not significantly different from the pretest total score with $t(14) = 1.380$, $p = .189$. The data for the Student Discipline component showed a mean increase on average .56444 points ($SD=.91482$). This difference in the posttest is significantly different from the pretest total score with $t(14) = 2.390$, $p = .031$.

Classroom Observation Data

For this research study, the researcher facilitated 6 weeks of professional development training, driven by the data collected from the PDNA, that focused on participant professional development priorities as well as professional development opportunities they deemed beneficial. Each week, the participants received professional development training on two techniques from Lemov's (2015) *Teach Like A Champion 2.0*, for a total of 12 strategies learned over the 6-week period. One book for each teacher was donated for the study (see Appendix J). After each training session, teachers were tasked with implementing the newly learned techniques in the classroom.

The researcher chose techniques from seven categories: Gathering Data on Student Mastery, Acting on Data and the Culture of Error, Setting High Academic Expectations, Lesson Structure, Pacing, Systems and Routines, and Building Character and Trust. Figure 27 displays a timeline of the techniques delivered via the training as well as the number of possible observation opportunities during the observation cycle.

Date	Category	Technique	Number of Possible Observations for Strategy
Week – 1 September 10, 2018	Gathering Data on Student Mastery	Technique 2: Targeted Questioning	11
	Gathering Data on Student Mastery	Technique 5: Show Me	11
Week – 2 September 17, 2018	Acting on Data and the Culture of Error	Technique 7: Plan for Error	10
	Acting on Data and the Culture of Error	Technique 8: Culture of Error	10
Week – 3 September 24, 2018	Acting on Data and the Culture of Error	Technique 9: Excavate Error	9
	Lesson Structure	Technique 10: Do Now	9
Week - 4 October 1, 2018	Setting High Academic Expectations	Technique 11: No Opt Out	8
	Systems and Routines	Technique 12: STAR/SLANT	8
Week – 5 October 8, 2018	Lesson Structure	Technique 22: Board = Paper	7
	Lesson Structure	Technique 26: Exit Ticket	7
Week – 6 October 15, 2017	Pacing	Technique 30: Work the Clock	6
	Building Character and Trust	Technique 59: Precise Praise	6

Figure 27. Timeline of Techniques Delivered/Number of Possible Observations.

The Classroom Walkthrough Observation Tool was used to observe participants weekly. During the 11 cycles of observation, the Classroom Walkthrough Observation Tool captured notes and participant behaviors observed by the researcher and

instructional coach as it related to participants implementing the techniques learned during in-service trainings.

For example, during week 1, the Targeted Questioning and Show Me strategies were introduced; therefore, the researcher only looked for evidence of these two strategies during the first observation cycle. During week 2, the Plan for Error and Culture of Error strategies were introduced, so the researcher only looked for evidence of the four total strategies during the second observation cycle. This pattern of observing strategies continued until all strategies were taught and proceeded for an additional five observation cycles, for a total of 11 observation cycles. The following section further displays the frequency of use for each of the individual techniques.

Gathering data and student mastery. The techniques selected under this category were Targeted Questioning and Show Me. Targeted Questioning required classroom teachers to ask a quick series of carefully chosen, open-ended questions directed at a strategic sample of the class, executed in a short time period. For example, instead of asking, “is everyone clear on what a simile is,” the teacher would ask, “Jeffrey, can you give me an example of a simile in a sentence?” By utilizing specific, targeted questions, teachers are better able to conduct quick, summative assessments of student mastery of a given topic.

The Show Me technique allowed teachers to flip the classroom dynamic by gleaning data from a passive group of students. The technique required all students to use hand signals to show their understanding of content. For example, the teacher instructed students to use the rock, paper, scissors method. He asked a question, counted to three, shouted, “rock, paper scissors,” and the students then held up their fingers

(either one, two, or three) to represent whether they believed the answer to the question is A, B, or C. This technique allowed students to actively show evidence of their understanding.

The data from Table 11 represents the number of teachers who used these strategies as well as the number of times the strategy was used during the 11 observation cycles. During the observation period, 15 teachers were observed using the Targeted Questioning strategy 29 times collectively, and 14 teachers were observed using the Show Me strategy 30 times collectively.

Table 11

Data from Techniques Under Gathering Data and Student Mastery Category

Strategy	# of Teachers Observed Using Strategy	# of Times Observed During 11 Observations
Targeted Questioning	15	29
Show Me	14	30

Acting on data and the culture of error. The techniques selected under this category were Plan for Error, Culture of Error, and Excavating Error. The Plan for Error technique increases the likelihood that teachers will be able to recognize and respond to errors made by students. This technique required participants to

- List three to five of the most important questions they will ask in the next day's lesson;
- For each question, list two incorrect answers they thought they would likely get; and
- Describe how they would respond to each of the incorrect answers.

By planning for common mistakes and anticipating errors in advance, this

technique allows teachers to be more productive.

The Culture of Error technique encouraged participants to create a classroom environment that embraced error, where students felt safe to make and discuss mistakes. For example, a participant might give a challenging set of questions. The participant would acknowledge to students the difficulty of the questions, then ask students to nominate questions/problems they felt were the most challenging. Through this process, teachers are able to build trust and create a classroom culture where it is expected to address errors.

The Excavating Error technique required study participants to dig into student errors to better understand where their students struggle and how best to address them. This technique required participants to

- Ask students for an alternative response when they gave an incorrect answer;
- Compare responses (choose two student answers that are different and ask class to find evidence to support each answer);
- Analyze wrong choices (ask a student to explain what details/information might lead to a specific wrong answer given); and
- Ask for a proposed response (ask students to look at content and propose a wrong answer then have student further explain the rationale for why someone might choose that wrong answer).

Table 12 reflects data collected from 10 observation cycles. Three teachers were observed once each using the Plan for Error technique. The Culture of Error technique as well as the Excavating Error technique was not observed being implemented by any participants during the observation cycles.

Table 12

Data from Techniques Under Acting on Data Category

Strategy	# of Teachers Observed Using Strategy	# of Times Observed During 10 Observations
Plan for Error	3	3
Culture of Error	0	0

The Excavating Error Technique was taught during the third week of training.

Table 13 reflects the data collected specific to the Excavating Error technique during nine observation cycles and shows that no teachers were observed using this strategy.

Table 13

Data from Techniques under Acting on Data Category

Strategy	# of Teachers Observed Using Strategy	# of Times Observed During 9 Observations
Excavating Error	0	0

Lesson structure. The techniques selected under this category included Do Now, Board=Paper, and Exit Ticket. The Do Now technique was a short warm-up activity, required no teacher instruction/direction, and was to be completed at the start of the class. This technique, often referred to as “bell-ringers” or “warm-ups,” promoted learning before a teacher started the daily instruction. Some of the key elements of the Do Now technique included having it in the same place every day so it became habit for students, able to be completed in 3-5 minutes without instruction/direction, and should have generally previewed the day’s lesson or reviewed the previous day’s lesson.

Fourteen teachers were observed using the Do Now technique a total of 42 times.

Table 14 reflects the data collected specific to the Do Now technique during nine observation cycles.

Table 14

Data from Techniques Under Lesson Structure Category

Strategy	# of Teachers Observed Using Strategy	# of Times Observed During 9 Observations
Do Now	14	42

The Board=Paper technique showed participants how to use the classroom chalkboard/whiteboard to model and shape how students should take notes. The premise behind the Board=Paper technique is that students needed to make intentional decisions about what to include in the notes they took. This technique suggested that student notes should be a mirror image of what teachers wrote on the blackboard/whiteboard; this could best be accomplished by giving students a graphic organizer, ensuring the blackboard/white board was a mirror image of the board so as the teacher filled in blank spaces, students would follow-up by filling in blank spaces as well.

The Exit Ticket was a technique that allowed teachers to end each class with an explicit assessment of the day's objective that could be used to evaluate teacher and student success. The characteristics of an effective Exit Ticket included

- Quick—no more than one to three questions;
- Data Yielding—each question should be designed to focus on one key part of the day's objective; and
- Use as a Do Now—after the teacher looked at the data, the next day was started with a Do Now that retaught areas from the Exit Ticket where students may have struggled.

During a 7-week observation cycle, all 15 participants were observed using the Board=Paper technique for a total of 19 times. Eleven participants were observed

using the Exit Ticket strategy a total of 13 times. Table 15 reflects the data collected specific to the Board=Paper and Exit Ticket techniques.

Table 15

Data from Techniques Under Lesson Structure Category

Strategy	# of Participants Observed Using Strategy	# of Times Observed During 7 Observations
Board=Paper	15	19
Exit Ticket	11	13

Setting high academic expectations. Under this category, the researcher trained participants on the No Opt Out technique. This technique encouraged teachers to turn “I don’t know” responses into success by helping students who will not try or cannot succeed practice getting it right. There were four basic formats of the No Opt Out technique:

1. Teacher provided the answer; student repeated the answer.
2. Another student provided the answer; the initial student repeated the answer.
3. Teacher provided a cue; student used it to find the answer.
4. Another student provided a cue; the initial student used it to find the answer.

Eight participants were observed using the No Opt Out technique a total of 11 times during eight observation cycles. The data from Table 16 displays the data for the No Opt Out technique.

Table 16

Data from Techniques Under the Setting High Academic Expectations Category

Strategy	# of Participants Observed Using Strategy	# of Times Observed During 8 Observations
No Opt Out	8	11

Pacing. The Work the Clock technique urged teachers to be intentional, strategic, and visible in an effort to maximize time in the classroom. Because every minute matters and time is the greatest resource for a teacher, this technique showed teachers how to get the most out of the instructional day. In order for this technique to be effective, teachers had to

- Show the Clock—made the time visible to students by having a visible clock, or using an online clock;
- Use specific, odd increments—round numbers often sound like estimates; odd numbers bring attention to time creating an awareness to be diligent; and
- Use Countdowns—simple tasks, wrap-ups, and transitions can run more smoothly when teachers use a countdown giving students just enough time to do something well.

During six observation cycles, 12 participants were observed using the Work the Clock technique a total of 15 times. The data from Table 17 reflects the data from the Work the Clock technique.

Table 17

Data from Techniques Under the Pacing Category

Strategy	# of Participants Observed Using Strategy	# of Times Observed During 6 Observations
Work the Clock	12	15

Systems and routines. Under this category the researcher chose the STAR/SLANT technique. The goal of this technique was for teachers to teach students key baseline behaviors for the learning environment. One of the ways to get students to pay attention is by using acronyms that stick. The STAR acronym stood for

- Sit up
- Track the speaker
- Ask and answer questions like a scholar
- Respect those around you

The SLANT acronym stood for

- Sit Up
- Listen
- Ask and answer questions
- Nod your head
- Track the speaker

One of the best aspects of these acronyms was that they served as shorthand.

Once a teacher has taught students how to STAR/SLANT, it becomes a one-word command to encourage students to self-correct.

The STAR/SLANT technique was observed being used by nine participants for a total of 12 times during eight observation cycles. Table 18 represents the data from the STAR/SLANT technique.

Table 18

Data from Techniques Under Systems and Routines Category

Strategy	# of Participants Observed Using Strategy	# of Times Observed During 8 Observations
STAR/SLANT	9	12

Building character. Precise Praise is a technique that encourages teachers to make positive reinforcement strategic. By differentiating between acknowledgement and praise, teachers could better manage positive feedback to maximize its results. This

technique encouraged teachers to reinforce actions not traits, offer objective-aligned praise, and differentiate acknowledgment from praise.

The Precise Praise technique was observed being used by two participants a total of two times. The data are reflected in Table 19.

Table 19

Data from Techniques Under Building Character Category

Strategy	# of Participants Observed Using Strategy	# of Times Observed During 6 Observations
Precise Praise	2	2

The data in Table 20 summarize the number of times each technique was observed being implemented by each participant during the 11-week observation cycle. The technique names in the table are abbreviated Targeted Questioning (TQ); Show Me (SM); Plan for Error (P/E); Culture of Error (CE); Excavating Error (EE); Do Now (DN); Board=Paper (B=P); Exit Ticket (ET); No Opt Out (NOO); Work the Clock (WTC); STAR/SLANT (SS); and Precise Praise (PP).

Table 20

Participant Implementation of Technique Summary

Part. #	TQ	SM	P/E	CE	EE	DN	B=P	ET	NOO	WTC	S/S	PP
1	2					2	1					
2	1	2				1	1		2	1		
3	2	3				4	1	2		2	1	
4	1	2				4	1	1	1	1	2	1
5	2	1				4	1			1	2	
6	3	2	1			4	1	1	1	2		
7	2	4				4	1	2	2	1	2	
8	2	1				4	2	1	1	1	1	1
9	3	2					1	1		1	1	
10	3	3				2	1		2		1	
11	1	1				2	1	1		1	1	
12	2	3				2	2	1	1		1	
13	1	2				2	2	1	1	2		
14	1	2	1			4	1	1		1		
15	3	2	1			3	1	1		1		

Teacher Interviews

Thirteen of the research study participants agreed to a private interview with the researcher at the conclusion of the study. Each interview was conducted in a private office, and participant confidentiality was maintained. During the interview session, each participant was thanked for their participation and was asked the following 12 questions about the professional development training they received (see Appendix K).

1. The initial phases of this study involved 6 weeks of professional development.
Do you agree or disagree that the overall PD sessions were well organized?
2. Do you agree or disagree that the PD sessions were focused on pedagogy?
3. Do you agree or disagree that the PD sessions included opportunities for modeling, coaching, and/or resolving issues you may have had implementing

the techniques?

4. Do you agree or disagree that the PD sessions have caused you to change your teaching practices?
5. As a result of the PD training you received, do you agree or disagree that you have been equipped with strategies to bring about measurable change to your students' academic achievement levels?
6. Do you agree or disagree that your self-efficacy has been positively impacted by the professional development sessions?
7. Do you agree or disagree that you are able to positively impact student engagement?
8. Do you agree or disagree that you are equipped with instructional strategies that will positively impact student achievement?
9. Do you agree or disagree that you have been equipped with strategies to positively impact classroom management?
10. Do you agree or disagree that your collective efficacy has been positively impacted by the professional development sessions?
11. Do you agree or disagree that as a group, you are collectively equipped with instructional strategies that will positively impact student achievement?
12. Do you agree or disagree that you have been collectively equipped with strategies to positively impact classroom management?

The data revealed that all 13 interview participants agreed the professional development sessions were well organized. Likewise, all interview participants agreed the sessions were focused on pedagogy. Eleven interview participants agreed the

sessions included opportunities for modeling, coaching, and/or resolving issues they may have had implementing the technique, while two participants disagreed. Twelve participants agreed the sessions have caused them to change their teaching practices, while one participant disagreed. All interview participants agreed that as a result of the training they received, they have been equipped with strategies to bring about measurable change to student academic achievement levels.

All participants interviewed agreed that they had been equipped with strategies to bring about measurable change to student academic achievement levels, and 12 participants agreed that they are able to positively impact student engagement, while one participant disagreed. When asked if they agreed or disagreed that they were equipped with instructional strategies that would positively impact student achievement, 10 participants agreed and three disagreed. While one participant disagreed, 12 participants agreed that they had been equipped with strategies to positively impact classroom management.

When asked about collective efficacy beliefs, nine participants agreed their collective efficacy had been positively impacted by the professional development sessions; four participants disagreed. All 13 participants agreed that as a group, they were collectively equipped with instructional strategies that would positively impact student achievement; and they all agreed they had been collectively equipped with strategies to positively impact classroom management.

Table 21 reflects the data obtained from the private teacher interviews

Table 21

Data from Teacher Interviews

Question	# of Participants Responding to Questions	# of Participants Who Agree	# of Participants Who Disagree
Do you agree or disagree that the overall PD sessions were well-organized?	13	13	0
Do you agree or disagree that the PD sessions were focused on pedagogy?	13	13	0
Do you agree or disagree that the PD sessions included opportunities for modeling, coaching, and/or resolving issues you may have had implementing the techniques?	13	11	2
Do you agree or disagree that the PD sessions have caused you to change your teaching practices?	13	12	1
As a result of the PD training you received, do you agree or disagree that you have been equipped with strategies to bring about measurable change to your students' academic achievement levels?	13	13	0
Do you agree or disagree that your self-efficacy has been positively impacted by the professional development sessions?	13	13	0
Do you agree or disagree that you are able to positively impact student engagement?	13	12	1
Do you agree or disagree that you are equipped with instructional strategies that will positively impact student achievement?	13	10	3
Do you agree or disagree that you have been equipped with strategies to positively impact classroom management?	13	12	1
Do you agree or disagree that your collective self-efficacy has been positively impacted by the professional development sessions?	13	9	4
Do you agree or disagree that as a group, you are collectively equipped with instructional strategies that will positively impact student achievement?	13	13	0
Do you agree or disagree that you have been collectively equipped with strategies to positively impact classroom management?	13	13	0

Summary

Chapter 4 detailed data collected from the research on the impact of professional development on teacher self-efficacy and collective efficacy beliefs. The data included a demographic survey, PDNA, TSES, CBS, classroom observations, techniques from Lemov's (2015) *Teach Like A Champion 2.0*, and teacher interviews.

As indicated in the data, significant growth was seen overall in the area of teacher self-efficacy. Questions on the TSES were classified into three components: Student Engagement, Instructional Strategies, and Classroom Management. The data revealed a statistically significant difference in each of these three areas. Results from the CBS showed participants scored marginally higher overall on the CBS post-survey than the CBS pre-survey. The questions on the CBS were also classified into three components: Collective Teacher Efficacy Beliefs, Collective Teacher Beliefs about Instructional Strategies, and Collective Teacher Beliefs about Student Discipline. The data showed there was not a significant difference between the post-survey and pre-survey for Collective Teacher Efficacy and Teacher Instructional Strategies components. However, there was a significant difference with the Classroom Management component.

Teacher interviews were based on the professional development sessions they received. Data from the interviews showed that overall, participants agreed the sessions were well organized, focused on pedagogy, included opportunities for modeling and coaching, caused them to change their teaching practices, and equipped them to bring about measurable change in students academic achievement levels. Additionally, most of the participants agreed they had been equipped to positively impact student achievement and classroom management.

Chapter 5: Conclusion

Introduction

The purpose of this study was to examine the impact of research-based professional development on teacher self-efficacy and collective efficacy beliefs. Research findings spanning more than 20 years are clear about the connection between effective, highly trained teachers and student achievement (Fiese, 2011); yet for many teachers, their students' learning challenges are so daunting that the educators do not believe they can make an impact (Mizell, 2010). While reasons for this lack of self-efficacy may be vast, one reason is teacher lack of knowledge and skills to address today's students' specific challenges (Mizell, 2010). This study considered the use of research-based techniques from Lemov's (2015) *Teach Like A Champion 2.0*, delivered through professional development, to help address this problem. This study investigated the following questions: "What impact does research-based professional development have on teacher self-efficacy beliefs with respect to applying techniques from *Teach Like a Champion 2.0*" and "What impact does research-based professional development have on collective efficacy beliefs with respect to applying techniques from *Teach Like a Champion 2.0*?"

This chapter provides answers to the research questions, discusses implications for practice and future research, and addresses limitations.

Research Questions

Research Question 1. What impact does research-based professional development have on teacher self-efficacy beliefs with respect to applying techniques from *Teach Like a Champion 2.0*? Final analyses of the TSES data revealed that

teacher self-efficacy increased during the study. The results of the paired-sample *t* tests suggested there were statistically significant differences between participant post-TSES scores and pre-TSES scores. According to Yoo's (2016) research, these results suggested professional development does have a positive effect on teacher efficacy. Calik et al.'s (2012) research also supported these data results, concluding, "some factors deemed effective in developing self-efficacy include...professional development" (p. 2501). Likewise, an article by The Share Team (2018) asserted that providing useful professional development helps to build a culture of efficacy.

Test results for the three components measured by the paired-sample *t* tests also confirmed teacher self-efficacy for each component increased during the study. The Student Engagement component measured participant beliefs about what they can do to reach the most difficult students. The test's results suggested the difference in the post-survey total score for this component was significantly different from the pre-survey total score. The Instructional Strategies component measured how well the participants felt they were equipped to respond to the instructional needs of students. The test results suggested the difference in the posttest total score for this component is significantly different from the pretest total score. The Classroom Management component measured participant beliefs about their ability to positively impact student behaviors. Test results suggested the difference in the posttest total score for this component was significantly different from the presurvey total score.

The qualitative data collected during this study suggested some participants believed their efficacy increased and others found the training beneficial. Several participants stated that the training helped improve their overall self-efficacy. Participant

1 felt the training was relevant and it bolstered their confidence. Participant 3 stated, I think this training was just what the staff needed. I was able to immediately implement the techniques the day after they were taught, and I could see a difference in some of my students. I really appreciate this training.

Participant 4 indicated, “I like the fact that I could easily use each of these techniques. Although I have not tried them all yet, at least I feel I can use them to make a difference in my classroom.” Even though the qualitative data revealed participants found the training beneficial, the observation data clearly showed participants did not implement techniques with frequency.

Although research on the impact of professional development on teacher self-efficacy is still evolving, studies do point to professional development as having a positive impact on teacher self-efficacy. Yoo’s (2016) research concluded that professional development does have a positive effect on teacher efficacy. Calik et al.’s (2012) research indicated, “some factors deemed effective in developing self-efficacy include...professional development” (p. 2501). Furthermore, Karimi (2011) found, “teacher participation in professional development initiatives significantly enhances or can change teachers’ beliefs about their teaching practices” (p. 57); and a study by Gardner et al. (2019) indicated that professional development not only changes teacher beliefs, but it also changes their classroom practices and creates a foundation for how a teacher may teach in the future.

The observation data showed that the implementation of the techniques lacked frequency; however, when the participants were observed using the techniques, they did so with fidelity and a high level of success in understanding the process. While the

researcher cannot conclude that the professional development and the implementation of the techniques impacted teacher self-efficacy, this observation suggested that *if* technique implementation did have a positive impact on efficacy, successful experiences from implementing the techniques *may* have been a contributing factor or played a small role. This idea is supported by several studies and was identified by Bandura (1994) as mastery experiences. The idea of mastery experiences (often known as performance outcomes) impacting self-efficacy suggests that if an individual performs well on a previous task, he or she is more likely to have a higher sense of self-efficacy. When asked to perform the task again, they are more likely to try harder in an effort to complete the task with better results (Redmond & Slaughenhou, 2016). Bandura (1994) also pointed to the argument that “one effective way of creating strong self-efficacy is mastery experiences because successes build a strong belief in one's personal efficacy” (para. 4).

Even though teacher self-efficacy increased in this study and research showed increases in self-efficacy can be attributed to professional development, the researcher believed that evidence from participant observed behaviors in professional development sessions casts doubt as to whether the TSES data results are reflective of the training. Therefore, as previously mentioned, due to the lack of frequency in implementation of the techniques, the researcher cannot conclude that the increased efficacy resulted from use of the techniques.

Research Question 2. What impact does research-based professional development have on collective efficacy beliefs with respect to applying techniques from *Teach Like a Champion 2.0*? According to Dewitt and Slade (2014), collective teacher efficacy is ranked as one of the most important influences in schools today.

Dewitt and Slade asserted, “it can have a marked positive impact on student learning” (para. 1). In this study, the final analysis of the CBS data results revealed no significant difference except one area: classroom management. The quantitative data collected for this research question included a paired sample *t* test for a pre-survey and post-survey on collective efficacy beliefs. While the TSES and CBS both measure efficacy, they are two different constructs (Skaalvik & Skaalvik, 2007). The CBS was designed to measure the capacity of educators working in the same school as well as measure their perceptions of collective efficacy, with an emphasis on the group's collective capabilities (Couto & Azzi, 2015).

Like the TSES, the CBS survey measured participant collective efficacy beliefs in three components: Collective Teacher Efficacy Beliefs, Collective Teacher Beliefs about Instructional Strategies, and Collective Teacher Beliefs about Student Discipline. Goddard et al. (2000) defined collective teacher efficacy as teacher opinions about whether or not their collective efforts positively affect students.

The Collective Teacher Efficacy Beliefs component measured participant beliefs about their collective capacity to achieve meaningful student learning in spite of whatever obstacles may be present that might make learning difficult. The data revealed no significant difference between the post-survey and pre-survey score for this component. The Collective Beliefs about Instructional Strategies component measured participant collective beliefs about the group's capacity to effectively implement instructional strategies. The data revealed no significant difference between the post-survey and pre-survey score for this component. One concern noted by the researcher was the fact that there were little to no opportunities in the school's schedule (outside of the designated 6-

week training) for participants to collaborate in groups or share ideas and experiences as a team. Research asserts that collaboration and working in teams might impact teacher beliefs about the ability of the team and the school's faculty of teachers to demonstrate the actions necessary to produce results (Skaalvik & Skaalvik, 2007). The researcher felt the lack of opportunities to collaborate may have impacted participant beliefs about their collective efficacy and capacity.

The Collective Teacher Beliefs about Student Discipline component measured participant collective beliefs about the group's ability to manage the behaviors of difficult students as well as their ability to maintain a safe and positive learning environment. Conversely, the data from the Collective Teacher Beliefs about Student Discipline component showed a statistically significant difference between the post-survey and pre-survey scores. The researcher believed there were two potential drivers for this significant difference. One potential driver was the introduction of the STAR/SLANT technique, which 60% of the participants were observed implementing. The STAR/SLANT technique was used to teach students key baseline behaviors for the learning environment. By using an acronym (i.e. S, sit up; T, track the speaker; A, ask and answer questions like a scholar; and R, respect those around you; or S, sit up; L, listen; A, ask and answer questions; N, nod your head; and T, track the speaker), once the participants taught students how to STAR/SLANT, it became a one-word command to encourage students to self-correct.

A second potential driver for the significant difference in the scores for the collective beliefs about student discipline was the introduction of the Work the Clock technique. The Work the Clock technique urged teachers to use a clock to be intentional,

strategic, and visible in an effort to maximize time in the classroom. Although this technique was used for pacing, Lemov (2015) described this technique as one that allowed for teachers to manage transitions so they run more smoothly and minimize disruptive classroom behaviors. Based on Lemov's (2015) assessment, the researcher believed that the use of this technique also may have contributed to the data results for the classroom management component.

The results clearly showed participant efficacy beliefs about the collective group as well as their collective beliefs about their ability to positively impact academic achievement through instructional strategies were lower than their own personal efficacy beliefs. While the researcher can conclude that the 6-week training sessions provided opportunities for the participants to collectively discuss successes and failures with techniques, overall, the school schedule did not provide many opportunities for teachers to collaborate, share ideas, or discuss strategies currently used in individual classrooms, which may have contributed to the lack of change in participant overall collective efficacy. With school districts focusing on accountability and a trend towards teacher professional learning communities, teachers can no longer work in isolation, and opportunities to collaborate are important.

Research by Redmond and Slaughenhoup (2016) supported the idea that collective efficacy was impacted when teachers were familiar with colleagues' practices.

Collaboration and working in teams can create a new mindset for teachers. According to Skaalvik and Skaalvik (2007), "collaboration and working in teams might impact a teacher's beliefs about the ability of the team and the school's faculty of teachers to demonstrate the actions necessary to produce results" (p. 613). Ultimately, teacher

beliefs about the school's ability as a team to bring about positive change will impact teacher collective efficacy beliefs. Donohoo (2017) concluded, "teachers gain confidence in their peers' ability to impact student learning when they have more intimate knowledge about each other's practice" (para. 4). The researcher believes the lack of opportunities to collaborate and become familiar with other teachers' practices may have contributed to low scores in collective efficacy.

Conclusions

Although small in scope, this study provided insight into the role research-based professional development had on teacher self-efficacy and collective efficacy beliefs. The researcher found that overall, teacher self-efficacy beliefs showed a significant increase, while collective efficacy beliefs suggested no difference except for the student discipline component. The researcher chose to use a PDNA to assess participant needs and chose Lemov's (2015) *Teach Like a Champion 2.0* as a backdrop for the study to address participant needs. Although participants had input into the topics to be covered, the researcher controlled the scope of the topics.

The participants expressed a need for strategies that engaged and motivated students, research-based best practices, and strategies that developed critical-thinking skills; however, during the professional development training sessions for these strategies, the researcher observed a lack of enthusiasm and attention. Only six or seven participants actively engaged each week by asking questions, recalling previous experiences, and sharing feedback about technique implementation with their students. Others were observed doodling/drawing on handout materials during the training, engaging in sidebar conversations with their peers, or they simply sat through the training

quietly without offering any input unless the researcher intentionally called on them to contribute to the sessions. This raised a question as to why the teachers were not more engaged. Were they bored with the training? Was efficacy so low they did not believe the techniques would make a difference?

Qualitative data from interviews supported the researcher's observations.

Participant 4 felt that although the training was good and they learned new strategies that actually worked, she believed some teachers did not take the training seriously.

Participant 10 stated, "I was disappointed to see some teachers not taking notes, and I feel they were not tuned in because the study was voluntary and not mandatory."

The lack of engagement from training translated into a lack of implementation of techniques. Analyses of the classroom observation data revealed none of the participants attempted to implement all 12 techniques, and the frequency in which the techniques were implemented was low given the number of opportunities to implement the techniques during the 11-week observation cycle. Qualitative data revealed that Participant 8 and Participant 15 believed some participants did not take the training sessions seriously and were suspicious as to how frequently the participants implemented the techniques from the training. The researcher concluded there was a definitive difference between what participants *said* their professional development needs were and their actual frequency of *implementation* of the techniques that aligned with those needs. For instance, participants wanted a strategy to hold students accountable, yet only half of the participants were actually observed implementing the No Opt Out technique; a technique specifically designed to hold students accountable. Additionally, the majority of the participants expressed preferences for strategies to address student engagement,

student errors, and use data to improve learning. Five of the techniques learned were aligned with those needs, yet two were never implemented by any of the participants and the other three lacked frequency of implementation. Based on observations of participant behaviors during training and the classroom observation data, the researcher noted a direct relationship with the frequency of implementation of techniques by participants who were actively engaged in training versus those who were not engaged.

There could be numerous reasons why there was a lack of consistency in implementing the techniques during this study. One research study contributed the blame to career teachers being resistant to change. In Snyder's (2017) research, he concluded, "one of the factors affecting effective implementation of reform is resistance to change. Veteran teachers in particular present unique challenges, and stereotypically the greatest resistance, for effective implementation of change" (p. 1). Another study suggested teacher disengagement was a cause for lack of implementation of new strategies and methodologies. Tucker (2019) espoused, "teachers spend more time checking email than engaging with new teaching techniques.... They focus on all of the 'buts' or all of the reasons they cannot do something, instead of using the time to be creative problem solvers" (para. 8). Regardless of the reasons, this was a classic example of lack of control in the study. The researcher could not force participants to implement the techniques.

The researcher found valuable insight from the qualitative data interview questions that addressed the collective efficacy component and instructional strategies component. Particularly noted were discrepancies in participant responses related to the two aforementioned components. For example, all participants interviewed agreed they

believed they were collectively equipped with instructional strategies that will positively impact student achievement, and 70% agreed their collective self-efficacy had been positively impacted by the professional development sessions; yet CBS data suggested no significant difference between post-survey and pre-survey scores for both of these components. Interview feedback was more consistent with results from the collective efficacy classroom management component. One hundred percent of those interviewed agreed they had been collectively equipped with strategies to positively impact classroom management, which showed a direct relationship with the significant difference from the quantitative data results in this component on the CBS. Qualitative data also supported these findings. Participant 9 and Participant 7 mentioned the STAR/SLANT technique, an acronym for a one-word command that encouraged students to self-correct, as a contributing factor in establishing behavior protocols in their classrooms that impacted their collective efficacy beliefs about classroom management.

Based on the observations, lack of control, and lack of frequency of implementation of the techniques, there seems to be a question as to whether the professional development played a role in the increase of self-efficacy. Even though teacher self-efficacy went up in this study and research showed increases in self-efficacy can be attributed to professional development, the researcher believes evidence from participant behaviors observed in professional development sessions casts doubt as to whether the TSES data results are reflective of the training. Additionally, due to the lack of frequency in implementation of the techniques, the researcher cannot conclude that the increased efficacy resulted from use of the techniques.

Limitations

There were several factors that served as limitations to this study. One limitation was that the sampling population for this study was extremely small, only consisting of 15 teachers at one middle school located in the eastern region of North Carolina. A larger sampling population may have provided the researcher with more data validity.

The second limitation was the lack of some techniques being implemented. During the 11 observation cycles, the researcher noted two strategies were not implemented by any of the participants. Additionally, during the teacher interviews, four participants raised concerns about what they perceived as a lack of interest in the training by other participants. The lack of implementing all the techniques by all participants may have impacted participant beliefs about their capacity to collectively impact student achievement and increase collective efficacy beliefs.

A third limitation is the TSES instrument itself. The TSES measured three components about teacher self-efficacy beliefs: instructional strategies, student engagement, and classroom management. Although these components are related to student achievement, the TSES is not a comprehensive assessment of teacher efficacy. Skaalvik and Skaalvik (2007) concluded that teacher self-efficacy is the most widely researched teacher belief that has shown strong associations with teacher satisfaction and intent to stay in the field, yet despite the most recent progress in the measuring of teacher self-efficacy, Kuusinen (2016) concluded, “much less is known about how strongly teacher self-efficacy is associated with research-based practices known as effective for student learning” (p. 185). Furthermore, Kuusinen explained that teacher efficacy beliefs could take on different meanings based on varying factors like “controllability of the

outcome rather than effectiveness with students, knowledge of strategies to achieve the outcome, ability to execute research-based strategies with skill, effectiveness with every single student, or meeting external standards for performance” (p. 186).

Last, schedule interruptions were a limitation in this study. This study was conducted over a 13-week period starting in September and ending in December. A hurricane cancelled school for 3 days in September, requiring the researcher to reschedule training and observations. Additionally, a medical emergency and Thanksgiving holiday also required the researcher to reschedule training and observation dates. Due to the lack of fidelity in implementing these techniques, schedule interruptions may have contributed to results of the CBS data collected.

Implications/Recommendations for Future Practice

States and local school districts across the nation are expanding their efforts to nurture and improve the academic success of its students. As 21st century reform efforts focus on finding a “cure” for the deficits in student achievement, the role and effectiveness of the classroom teacher stand at the forefront of this mission. This study has yielded several implications and recommendations for district and state level leaders to consider in their efforts to improve teacher efficacy and effectiveness.

One implication for practice is that local school district and state leaders should provide increased training on a variety of research-based best practices during professional development. There is a body of research supporting professional development as an influencer of teacher self-efficacy. Research by Calik et al. (2012) concluded, “some factors deemed effective in developing self-efficacy include... professional development” (p. 2501). Yoo’s (2016) research postulated that

professional development education had a positive effect on teacher efficacy.

Additional research suggested the positive effect of professional development on teacher efficacy is not surprising in that strong teacher training programs are known to be positively associated with teacher efficacy (Kazempour & Sadler, 2015; Tuchman & Isaacs, 2011). In a more recent study, Gardner et al. (2019) indicated that professional development not only changed teacher beliefs but also changed their classroom practices and created a foundation for how a teacher may teach in the future.

Consequently, future researchers should strive for innovative strategies that connect teachers to best practices. According to the The Share Team (2017), “nothing feels more counterproductive than useless Professional Development (PD) meetings” (para. 11). Innovative research-based best practices can help to build a culture of efficacy among the staff. Simply put, to strengthen educator daily performance, the driving factor must be an increase in the effectiveness of professional development (Roy, 2013).

Lemov’s (2015) *Taxonomy of Effective Teaching Practices* is a collection of instructional best practices assembled from observations of highly effective teachers in high-performing inner-city classrooms. Lemov studied how teachers circulated, engaged all students, targeted their questions, framed the positive, worked the clock, waited strategically for, and then stretched out student answers (Atkins, 2015). There are 62 techniques in Lemov’s (2015) *Teach Like a Champion 2.0*. that district and state leaders could choose from to equip teachers with researched-based best practices.

Whether teachers want strategies that prepare them to check for understanding, set high expectations, gather and act on data, or guidance on pacing, *Teach Like a Champion 2.0* provides multiple opportunities that can easily be taught through professional

development. There are numerous examples of techniques from the book that can easily set teachers up for success and improve academic outcomes in the classroom. For example, the Wait Time technique encouraged teachers to allow students more time to think before answering. Then, if the student continued having trouble, the teacher would narrate them toward the correct answer (Lemov, 2015). Another technique, Cold Call, required teachers to call on students regardless of whether or not their hands were raised. This technique set the tone that all students were accountable to participate in the learning process (Lemov, 2015). Additionally, a technique like Begin with the End allowed teachers to maximize their planning by first defining the objective, then deciding how to assess it, and last choosing proper activities and lessons (Lemov, 2015).

Likewise, techniques used for this study are an excellent example of research based best practices for teachers to employ in their classrooms. Techniques like Plan for Error, Culture of Error, and Excavating Error allowed teachers to quickly act on data. Techniques like Do Now, Board=Paper, and Exit Ticket focused on lesson structure and promoted learning before and after daily instruction (Lemov, 2015).

The No Opt Out technique allowed teachers to set high academic expectations by showing teachers how to help students who will not try or cannot succeed practice getting it right. If teachers need help with pacing, the Work the Clock technique showed teachers how maximize time in the classroom (Lemov, 2015).

The STAR/SLANT technique impacted teacher classroom systems and routines to establish baseline behaviors for the learning environment (Lemov, 2015). To build character, the Precise Praise technique encouraged teachers to make positive reinforcement a strategic part of daily planning (Lemov, 2015).

Although the researcher cannot conclude that the teacher self-efficacy increase was due to the implementation of techniques from professional development., research suggested targeted teacher preparation and training can not only improve teacher self-efficacy but can positively impact student achievement as well.

A second implication for practice is to set clear guidelines and expectations for teachers to actively participate in the implementation of strategies and techniques learned in training sessions. One of the largest studies on understanding effective professional development was conducted by Garet, Birman, Porter, Desimone, and Herman (1999). It was determined that one of the top characteristics of professional development was participation. District and school leaders should plan for opportunities that require and encourage active participation from every participant, design activities that create more opportunities for engagement, and create a system to track participation.

Based on the observation data which showed a low frequency of technique implementation, a third implication for practice is to create an accountability system that promotes frequent implementation of the strategies and techniques learned from professional development. “District leaders, which includes the superintendent, the central office staff, the building-level administrators, and board members, have the task of ensuring that teachers have the support needed to accomplish the requirements of meeting individualized student growth” (Darling-Hammond et al., 2017, para. 2). Mizell (2010) noted, “policymakers, community leaders, and parents have a responsibility to ensure that educators within their schools engage in continuous professional learning and apply that learning to increase student achievement” (p. 2). An accountability system might look like a schedule whereby each participant is required to write a different date

beside every strategy so the participant can be observed implementing a specific strategy on a specific date until all strategies have been implemented and observed.

Administrators would be responsible for ensuring teachers were signed up and held accountable for implementation.

A fourth implication for practice is to use data from the qualitative data to inform future professional development efforts. Qualitative research is used to gain insights into people's feelings and thoughts, which may provide the basis for future practice (Austin & Sutton, 2015). Like a SWOT analysis, district and school leaders should identify the concerns from qualitative data presented by participants as weaknesses, then design or update professional development sessions that convert those weaknesses into strengths for the participants.

The fifth implication for practice is to advocate for and create schedules that are conducive to participation and collaboration. According to Karimi (2011), “research indicates that teacher participation in professional development initiatives significantly enhances or can change teachers’ beliefs about their teaching practices” (p. 57). Ensuring that opportunities to collaborate are put into place and built into schedules provides participants with opportunities to interact and collaborate with their peers.

The sixth implication for practice calls for greater accountability measures in studies analyzing the impact of professional development of teacher efficacy. The researcher observed in this study that the participants did not implement all the techniques learned, nor did they implement the techniques with frequency. Research by Kragler et al. (2008) suggested that while teachers were receptive to new instructional materials, they were less receptive to expected instructional changes. Coburn (2001)

described this type of behavior as a form of gate keeping teachers to preserve their image by showing interest in the training, but they do not make any drastic changes to their daily routines. Future research should establish rules and expectations about the frequency of use of training strategies.

To improve participant engagement in both professional development and the implementation of strategies learned, the final implication is to allow participants to have a voice in the programs they undertake in training; participants should have input into the professional development strategies on which they receive training.

Implications for Future Research

The results of this study have recommendations for further research. One of the factors that impacts how teachers perform in the classroom is self-efficacy (Looney, 2003). Looney (2003) contended, “researchers have been concerned with how various teaching practices and teacher behavior can affect student performance” (p. 1). Furthermore, teacher effectiveness and accountability are trending issues in the government’s effort to increase academic achievement and raise test scores of students (U.S. Department of Education, 2001). Given the potential importance of teacher sense of self-efficacy for instructional effectiveness and student achievement, professional development is an important strategy for supporting the complex skills students need to have to be prepared for college and careers in the 21st century.

There is a need to continue to examine the relationship between researched-based professional development and teacher self-efficacy and collective efficacy beliefs. The first recommendation for future research is for a longitudinal study that would provide future researchers an opportunity to observe teachers to look for and identify any patterns

of change and/or stability in self-efficacy and collective efficacy beliefs at different stages of their careers. Mizell (2010) postulated, “policymakers, community leaders, and parents have a responsibility to ensure that educators within their schools engage in continuous professional learning and apply that learning to increase student achievement” (p. 2). Because there are varying degrees of need along the experience continuum, preservice and novice teachers may need more intense professional development as opposed to mid or late career teachers. A longitudinal study would provide multiple opportunities for researchers to assess, over time, the impact professional development has on personal self-efficacy and collective efficacy beliefs.

A second recommendation for future research is to duplicate this study in schools with larger populations. Because the sampling population for this study was extremely small and was conducted at a small school, conducting the study in a setting with a larger population would produce data from a larger pool of participants. Additionally, there are a large number of schools with different demographics. By duplicating the study with a higher number of participants and creating measures to ensure frequency of implementation of the techniques/strategies, data would provide more evidence to support or challenge research on the impact of professional development on teacher self-efficacy and collective efficacy.

The third recommendation for future research is to execute the study as a yearlong study. Schedule interruptions due to hurricanes and illness impacted the continuity of this study and may have played a role in some of the participant behaviors during training. By conducting a yearlong study, future researchers can accommodate schedule interruptions and changes and can increase opportunities for participant collaboration.

The fourth recommendation for future researchers is to increase the opportunities to collect qualitative data from teachers relating to self-efficacy and collective efficacy beliefs. The Share Team (2017) concluded, “qualitative analysis allows for a detailed examination of the thoughts, feelings, opinions and/or experiences of individuals, groups or communities” (para. 3). In this study, the researcher gleaned valuable information pertaining to participant feelings and opinions via the teacher interviews. The quality of this information would not be able to be accessed via quantitative measures. This is important because when future researchers make a correlation with the current problem, the qualitative data aid in creating programs and solutions specific to that particular context. Qualitative data provide an opportunity for study participants to actively participate in the research process, creating opportunities for much needed control over the study environment.

Summary

Teachers are the most valuable asset in a school. In order to improve student achievement, teachers must be equipped with the necessary strategies and skills to make a measurable impact. Efficacy has been defined as the extent to which a teacher believes he or she has the capacity to affect student performance (Bandura, 1993); therefore, this study investigated if research-based professional development would impact teacher efficacy beliefs.

The quantitative data from this study revealed statistically significant differences between the TSES post-survey and pre-survey in each of the three components measured by the instrument. This conclusion supports existing research that professional development positively impacts teacher personal self-efficacy beliefs.

Although the results showed a marginal increase in participant collective efficacy beliefs, the data from the CBS post-survey and pre-survey did not show a statistically significant difference in the Collective Teacher Efficacy Beliefs component and Collective Teacher Beliefs about Instructional Strategies component.

The results of this study have implications for future research. In some schools, professional development is not valued; teachers do not believe they have anything new to learn, or they believe the only source for new ideas is in trial and error in one's own classroom. There is a need to conduct longitudinal studies. Additionally, further research is needed to provide increased training on a variety of research-based best practices during professional development, while greater accountability measures should be put into place. Future researchers should increase opportunities to collect qualitative data from teachers relating to self-efficacy and collective efficacy beliefs, and they need to consider other factors that impact teacher self-efficacy in addition to the components measured by Tschannen-Moran and Woolfolk Hoy's (2001) TSES. The results of this study combined with further research could provide additional validity to the existing body of research in understanding how teacher self-efficacy and collective efficacy develop and evolve and the role research-based professional development plays.

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Appendix A
District Approval for Study

[Redacted]

Mon, Jul 23, 2018 3:15 pm

To: you
Mrs. Dunn,

Your Request for Research Application has been approved. [Redacted] County Schools looks forward to working with you on this project.

Congratulations Again,
Karen [Redacted]

Karen [Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]

[Redacted]
[Redacted]
[Redacted]

Appendix B

Teacher Demographics Survey

Teacher Demographics Survey

This survey will determine the demographics for teachers participating in research studying the impact of in-service professional development on efficacy.

1. What is your primary position?
 - a. Middle school math teacher
 - b. Middle School English/language arts teacher
 - c. Middle School social studies teacher
 - d. Middle School science teacher
 - e. Middle School Computer/Technology teacher
 - f. Other

2. What is your gender?
 - a. Male
 - b. Female

3. Identify your age range?
 - a. 1945-1960
 - b. 1961-1979
 - c. 1980-present

4. Are you licensed to teach in North Carolina?
 - a. I am licensed
 - b. I hold a provisional license
 - c. I am not yet licensed

5. Years of teaching experience?
 - a. 0-3
 - b. 4-6
 - c. 7-10
 - d. 10+

6. Years teaching at the middle school level?
 - a. 0-3
 - b. 4-6
 - c. 7-10
 - d. 10+

7. Identify your ethnicity:
 - a. African-American
 - b. American Indian

- c. Caucasian
- d. Hispanic
- e. Multi-Racial
- f. Other

8. What is your highest degree earned?
- a. BA/BS
 - b. MS/MA
 - c. Specialist
 - d. Doctorate

Appendix C
Teacher Self-Efficacy Scale

Teacher Beliefs - TSES

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

	None at all	Very Little	Some Degree	Quite A Bit	A Great Deal				
1. How much can you do to get through to the most difficult students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. How much can you do to help your students think critically?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. To what extent can you make your expectations clear about student behavior?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. How well can you respond to difficult questions from your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8. How well can you establish routines to keep activities running smoothly?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9. How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10. How much can you gauge student comprehension of what you have taught?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11. To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12. How much can you do to foster student creativity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13. How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14. How much can you do to improve the understanding of a student who is failing?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15. How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
16. How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
17. How much can you do to adjust your lessons to the proper level for individual students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
18. How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
19. How well can you keep a few problem students from ruining an entire lesson?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
20. To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21. How well can you respond to defiant students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
22. How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
23. How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
24. How well can you provide appropriate challenges for very capable students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Appendix D

Approval to Use Teacher Self-Efficacy Scale



William & Mary
School of Education

MEGAN TSCHANNEN-MORAN, PHD
PROFESSOR OF EDUCATIONAL LEADERSHIP

July 2, 2018

Rhonda,

You have my permission to use the **Teacher Sense of Efficacy Scale** (formerly called the Ohio State Teacher Sense of Efficacy Scale), which I developed with Anita Woolfolk Hoy, in your research. Please use the following as the proper citation:

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

You also have my permission to use the **Collective Teacher Efficacy Scale** that Dr. Barr and I developed. Please use the following citation:

Tschannen-Moran, M., & Barr, M. (2004). Fostering Student Learning: The Relationship of Collective Teacher Efficacy and Student Achievement. *Leadership and Policy in Schools*, 3(3), 189–209.

You can find each of these measure, as well as scoring directions for each, on my web site at <http://wmpeople.wm.edu/site/page/mxtsch>. I will also attach directions you can follow to access my password protected web site, where you can find the supporting references for this measure as well as other articles I have written on this and related topics.

I would love to receive a brief summary of your results.

All the best,

Megan Tschannen-Moran
The College of William and Mary
School of Education

Appendix E

Collective Efficacy Beliefs Scale

Collective Teacher Beliefs

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the *current* ability, resources, and opportunity of the teaching staff in your school to do each of the following.

	None at all	Very Little	Some Degree	Quite A Bit	A Great Deal				
1. How much can teachers in your school do to produce meaningful student learning?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
2. How much can your school do to get students to believe they can do well in schoolwork?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
3. To what extent can teachers in your school make expectations clear about appropriate student behavior?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
4. To what extent can school personnel in your school establish rules and procedures that facilitate learning?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
5. How much can teachers in your school do to help students master complex content?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
6. How much can teachers in your school do to promote deep understanding of academic concepts?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
7. How well can teachers in your school respond to defiant students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
8. How much can school personnel in your school do to control disruptive behavior?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
9. How much can teachers in your school do to help students think critically?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
10. How well can adults in your school get students to follow school rules?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
11. How much can your school do to foster student creativity?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
12. How much can your school do to help students feel safe while they are at school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨

For office use only.

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

Appendix F

Approval to Use the Collective Efficacy Beliefs Scale

[REDACTED] Fri, Jun 29, 2018 12:24 pm

To: you

Dear Rhonda,

You may use the scale for your doctoral research. Commercial or any other form of for-profit use is not allowed. You should cite the journal article in which the scale you are using originally appeared.

I would be most grateful if you would share the abstract of your study when it is complete.

Best wishes for a successful study.

[REDACTED]
On Fri, Jun 29, 2018 at 6:14 AM, Rhonda Partin-Dunn [REDACTED] wrote:

Dr. [REDACTED]

My name is Rhonda Dunn and I am a doctoral student in Educational Leadership at Gardner-Webb University in Boiling Springs, NC. My research study will explore the impact of in-service professional development (using techniques from Teach Like A Champion 2.0) on teacher self-efficacy and collective teacher efficacy beliefs.

I am requesting permission to use the Collective Efficacy Scale. I would greatly appreciate an electronic written response indicating your permission for the appendix section of my dissertation. For electronic response I can be reached at: [REDACTED].

Thank you in advance for your consideration.

Sincerely,
Rhonda P. Dunn
[REDACTED]

Mon, Jul 23, 2018 3:15 pm

Appendix G

Professional Development Needs Assessment

Professional Development Needs Assessment
--

Dear Teacher,

Continuous lifelong learning is essential today to ensure that workers have the knowledge and skills to compete in the global economy. Similarly, educators need to make sure that they have the knowledge and skills necessary to prepare students for the global economy. That is, you need to have the most up-to-date skills and knowledge to help your students succeed. This survey is designed to collect your feedback on the topic areas where you need additional training. It covers areas such as classroom management, pedagogy, assessments, and more. The information you and your colleagues provide will be used to prepare a comprehensive professional development program.

1. Please rate how much you agree with the following statements regarding professional development courses you attended in 2018:

a) The professional development course content is relevant to my current job

Strongly disagree Disagree Agree Strongly Agree

b) The professional development courses I have attended helped me do my job better

Strongly disagree Disagree Agree Strongly Agree

c) The professional development courses I have attended helped me better help my students in the classroom

Strongly disagree Disagree Agree Strongly Agree

d) The professional development courses have helped me prepare for advancement

Strongly disagree Disagree Agree Strongly Agree

2. **Overall, what grade would you give for the quality of the professional development sessions that you attended this year?** Please use the scale from A to F, where "A" denotes outstanding, "C" is average, and "F" is failure

3. **I prefer to participate in professional development that is:**

- Delivered online/self-paced
- Study groups or learning communities
- Traditional face-to-face
- Blended (a combination of face-to-face and online)

4. **I can benefit from professional development opportunities addressing:**

(Select all that apply)

- Student engagement and active participation
- Effectively addressing student errors
- Holding students accountable
- Setting high academic expectations
- Pacing
- In-class observations
- Building trust amongst your students
- Classroom climate
- Understanding and using data and assessments to improve classroom practice and student learning
- Modeling
- Formative assessments
- Lesson Structure

5. **Of the following areas of professional development, which issue(s) is/are your top personal priority(ies) for improvement over the next year? Select all that apply***

- Closing the achievement gap
 - Literacy strategies (reading and writing across the curriculum)
 - Research-based instructional best practices
 - Helping students develop critical thinking skills
 - Engaging and motivating students
 - Your content area (please state area)
-

6. Describe your idea of what a meaningful professional development session might look like:

7. Describe a professional development session you've experienced that you found beneficial. Explain why.

Appendix H

Classroom Observation Walkthrough Tool

Classroom Observation Tool

Date: ____/____/____

Time: _____

Teacher Observed: _____

Grade _____ **Subject** _____

Student Engagement

- Authentically on task
- Passive/Compliant
- Disengaged/Disruptive

**Individual
Group/Paired**

Whole Class

Small

- __ Independently producing product responsibilities
- __ Independent practice/problem-solving producing product
- Collaboratively problem-solving
- __ Writing Activity
- __ Silent reading
- __ Researching information

- __ Asking/Responding to questions
- __ Listening and taking notes
- __ Participating in discussion
- __ Participating in guided practice
- __ Presenting

- __ Students- defined
- __ Collaboratively
- __ Presenting

Research-Based Techniques

- Show Me
- Targeted Questioning
- Plan for Error
- Culture of Error
- Excavating Error
- Do Now
- No Opt Out
- STAR/SLANT
- Board = Paper
- Exit Ticket
- Work the Clock
- Precise Praise

Technique Implementation

- __ Teacher displays strong understanding of technique (s)
- __ Teacher displays some understanding of technique (s)
- __ Teacher does not display understanding of technique (s)

Comments

Observed by: _____

Appendix I

Participant Informed Consent Form

Gardner-Webb University IRB
Informed Consent Form

Title of Study: The Impact of Research-Based Professional Development on Teacher Self-Efficacy and Collective Efficacy Beliefs

Researcher: Rhonda L. Partin-Dunn

Purpose

The purpose of the research study is to study the impact of research-based professional development (using techniques from *Teach Like A Champion 2.0*) on teacher self-efficacy and collective efficacy beliefs. This study will contribute to the researcher's completion of her doctoral dissertation.

Procedure

Should you decide to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. This study consists of surveys, an audio-taped interview, a focus group, and observations that will be administered over a 17-week period at SMS. You will be asked to provide answers to a series of questions related to self-efficacy and collective efficacy, in addition to questions related to your professional development needs. If at any point a question on the survey(s) or interview causes discomfort you make skip that question or stop the survey or interview at any time. You will be asked to participate in 6 research-based professional development training modules.

Time Required

It is anticipated that the study will require about 15 hours of your time. This study will include multiple sessions. You will spend approximately 45 minutes on each of the four surveys to be administered at the start of the study, approximately nine hours spread across six sessions of research-based professional development training, approximately two hours on training follow-up sessions, and approximately 45 minutes on each of the three surveys to be re-administered at the conclusion of the study, and 30 minutes on the study conclusion interview.

Voluntary Participation

Participation in this study is voluntary. You have the right to withdraw from the research study at any time without penalty. You also have the right to refuse to answer any question(s) for any reason without penalty. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identified state.

Confidentiality

The information that you give in the study will be handled confidentially. Your information will be assigned a *code number*. The list connecting your name to this code will be kept in a *locked file*. When the study is completed and the data have been analyzed, this list will be destroyed via shredder within five days of completion of

analysis, and any audio-taped interview will be deleted within five days of completion of analysis. Your name will not be used in any report.

Risks

There are no anticipated risks in this study. If, as a result of the study, you experience discomfort and would like to discuss your thoughts or feelings, please contact the researcher for assistance:

Rhonda L. Partin-Dunn
(c) 919-671-3834
rdunn2@gardner-webb.edu

Benefits

There are no direct benefits associated with participation in this study. The study may help us to understand a link between research-based professional development and teacher and collective efficacy beliefs. The Institutional Review Board at Gardner-Webb University has determined that participation in this study poses minimal risk to participants.

Payment

You will receive no payment for participating in the study.

Right to Withdraw From the Study

You have the right to withdraw from the study at any time without penalty. If you choose to withdraw from the study, your audio-taped interview will be destroyed.

How to Withdraw From the Study

If you want to withdraw from the study, you may tell the researcher and leave the room, or during your interview, tell the interviewer to stop the interview. There is no penalty for withdrawing.

If you have questions about the study, contact the following individuals:

Rhonda L. Partin-Dunn
Gardner-Webb University
Boiling Springs, NC 28017

[REDACTED]

Dr. David Shellman
School of Education
Gardner-Webb University
Boiling Springs, NC 28017

[REDACTED]

If the research design of the study necessitates that its full scope is not explained prior to participation, it will be explained to you after completion of the study. If

you have concerns about your rights or how you are being treated, or if you have questions, want more information, or have suggestions, please contact:

Dr. [REDACTED]
 Chair of [REDACTED]
 Gardner-Webb University
 Boiling Springs, NC 28017
 Telephone: 704-406-2305
 Email: [REDACTED]

Voluntary Consent by Participant

I have read the information in this consent form and fully understand the contents of this document. I have had a chance to ask any questions concerning this study and they have been answered for me.

I agree to participate in the confidential survey.

I do not agree to participate in the confidential survey.

I agree to participate in the focus group.

I do not agree to participate in the focus group.

I agree to participate in the interview session(s). I understand that this interview may be

audio recorded for purposes of accuracy. The audio recording will be transcribed and destroyed.

I do not agree to participate in the interview session(s).

Date:

 Participant Printed Name

Date:

 Participant Signature

You will receive a copy of this form for your records.

Appendix J

Request and Approval for Book Donations for Study

[REDACTED]
Tue, Jun 12, 2018 12:47 pm

To: you [Details](#)

Hello Rhonda:

Please send me your shipping address for UPS and I will request the 25 copies to be sent to you.

Regards,

[REDACTED]
[REDACTED]
Jossey-Bass/Wiley
One Montgomery, Suite 1000
San Francisco, CA 94104
T: +1 415 782 3142
F: +1 415 433 0499
[REDACTED]

WILEY

From: Rhonda Partin-Dunn [REDACTED]
Sent: Wednesday, June 6, 2018 12:55 PM

To: Teach Like A Champion <[REDACTED]>

Subject: Request For Books

Appendix K
Teacher Interview Questions

Teacher Interview Questions

1. The initial phases of this study involved six weeks of professional development.
Do you agree or disagree that the overall PD sessions were well-organized?
2. Do you agree or disagree that the PD sessions were focused on pedagogy?
3. Do you agree or disagree that the PD sessions included opportunities for modeling, coaching, and/or resolving issues you may have had implementing the techniques?
4. Do you agree or disagree that the PD sessions have caused you to change your teaching practices?
5. As a result of the PD training you received, do you agree or disagree that you have been equipped with strategies to bring about measurable change to your students' academic achievement levels?
6. Do you agree or disagree that your self-efficacy has been positively impacted by the professional development sessions?
7. Do you agree or disagree that you are able to positively impact student engagement?
8. Do you agree or disagree that you are equipped with instructional strategies that will positively impact student achievement?
9. Do you agree or disagree that you have been equipped with strategies to positively impact classroom management?
10. Do you agree or disagree that your collective efficacy has been positively impacted by the professional development sessions?

11. Do you agree or disagree that as a group, you are collectively equipped with instructional strategies that will positively impact student achievement?
12. Do you agree or disagree that you have been collectively equipped with strategies to positively impact classroom management?