

ABSTRACT

Colleen Burt, IMPACT OF THE MULTI-CLASSROOM TEACHER MODEL IN ADDRESSING BEGINNING TEACHER SELF-EFFICACY AND RETENTION (Under the direction of Dr. Marjorie Ringler). Department of Educational Leadership, May 2021.

A growing number of beginning teachers are leaving teaching within their first three years, with half leaving the profession in the first five years (Ingersoll, 2012; Stewart et al., 2021). In an attempt to slow this level of attrition, school districts are creating ambitious induction programs. At the time of the study, Pitt County Schools Multi-Classroom Teacher Program (MCT), sought to provide support to beginning teachers over a three-year period. The purpose of this study was to examine beginning teacher self-efficacy and teacher retention. Using Bandura's Social Cognitive Theory of Self-Efficacy (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2001), as a conceptual framework this study examined Beginning Teachers (BTs) self-efficacy and retention during the implementation of the MCT Program. While studying the self-efficacy of 20 beginning teachers participating in the MCT program over a 1-year period, I worked directly with a group of four Beginning Teachers (BTs) and two Multi-Classroom Teacher (MCTs) to implement a small-scale improvement strategy to increase BT self-efficacy. The scholarly practitioner proposed to administer the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001) to the 20 BT participants at the beginning of the study and once again after the small-scale improvement strategy was implemented to determine the impact on BT self-efficacy. Due to the Global Coronavirus Pandemic during this study, the scholarly practitioner shifted the study to explore inflated BT self-efficacy ratings in classroom management compared to how their MCTs rated their teaching efficacy in classroom management.

IMPACT OF THE MULTI-CLASSROOM TEACHER MODEL IN ADDRESSING
BEGINNING TEACHER SELF-EFFICACY AND RETENTION

A Dissertation

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by

Colleen Burt

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BEGINNING TEACHER SELF-EFFICACY AND RETENTION

by
Colleen Burt

APPROVED BY:

DIRECTOR OF DISSERTATION: _____
Marjorie Ringler, EdD

COMMITTEE MEMBER: _____
Travis Lewis, EdD

COMMITTEE MEMBER: _____
Daniel Novey, EdD

COMMITTEE MEMBER: _____
Seth Brown, PhD

CHAIR OF THE DEPARTMENT OF EDUCATIONAL LEADERSHIP:

Marjorie Ringler, EdD

DEAN OF THE GRADUATE SCHOOL:

Paul Gemperline, PhD

DEDICATION

This dissertation is dedicated to my husband Robert and to my children Mckinsey and Aiden. My family, including my selfless mother, Glenda, have supported me through this journey and this journey would not have been possible without their unconditional love, patience, and support.

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CHAPTER 1: INTRODUCTION

The school district in this study had a problem with low student achievement, low teacher self-efficacy and higher teacher turnover for beginning teachers. This study investigated how the Multi-Classroom Teaching (MCT) program impacted beginning teacher (BT) self-efficacy and retention. Throughout this study, the term BT referred to beginning teachers who were new teachers within their first three years of teaching. A Multi-Classroom Teacher (MCT) is defined as a master teacher, as demonstrated by both classroom observation and student performance data, who co-teaches across multiple classrooms with other teachers and apprentices them in the art and science of what highly effective instruction looks like (Feller, 2016). The term master teacher was used to refer to any teacher with at least five years of experience and additional training, degrees, and meets the definition of highly-qualified (North Carolina Department of Public Instruction [NCDPI], 2015).

According to the North Carolina Department of Public Instruction (2015), highly qualified teachers must have obtained an appropriate license for the core academic subjects taught, and demonstrate subject knowledge and teaching skills in reading/language arts, writing, mathematics, and other areas of the basic elementary school curriculum by passing the teacher licensing exams required by the state. The MCT Program in this study was designed by Pitt County Schools Division of Educator Effectiveness and Leadership (DEEL) Department through the R3 Program and Grant. The R3 program referred to an innovative, relevant, and cost-effective initiative designed to implement best practices to recruit, retain, and reward highly effective teachers. The program consolidated multiple initiatives designed to impact student achievement by innovatively investing in our best teachers (Feller & Brown, 2018).

This study provides research on the impact of having an MCT Program on beginning teacher induction practices and addresses a significant gap in the literature on using this co-teaching model as a strategy to build beginning teacher self-efficacy and increase retention. This chapter outlines the background of this problem being addressed, purpose of the study, research questions for the study, conceptual/theoretical foundation, definition of key terms, assumptions, scope and delimitations, limitations, and the significance of this study. The chapter concludes with how this study impacted educational equity related to beginning teacher preparation and support.

Background of the Problem

The most important variable to student success is the teacher and it is essential that students have excellent teachers (Stronge & Hindman, 2003). Research continues to confirm that today's top 25% of teachers help students make well over a year's worth of learning growth- which is three times as much growth as the bottom 25% of teachers produce (Public Impact, 2015). This high growth is essential to help students that are academically behind catch up and students need excellent teachers consistently year after year. Obviously, it would be ideal to employ a school with teachers that are all in the top 25%, but this is not the reality in the United States. Continuing to face a teacher shortage every year, coupled with alternate-pathway candidates entering the profession, the US is facing a crisis to retain the most effective teachers as well develop new and beginning teachers (Public Impact, 2015; Stewart et al., 2021).

When teachers enter the profession that first year they change from "student of teaching" to "teacher of students" (Ingersoll, 2012). They are no longer studying the craft and pedagogy of teaching; instead they are trying to figure out how to apply their knowledge to design and implement instruction that facilitates learning for their students. In order to be successful,

teachers in their beginning years need a number of supports in place such as mentors, professional development, positive working conditions that promote a healthy school culture, administrative support, and a collaborative work environment. Opportunities for these beginning teachers are often limited because nearly all teachers work alone with one class or a few classes of students and teachers spend large portions of their time on tasks such as managing student conduct, grading student work, communicating with parents, and making copies that, on other professions, would be handled by paraprofessionals or technology (Ingersoll et al., 2014).

In spite of the benefits of high-quality teacher preparation, growing numbers of people are entering the profession before having completed-or sometimes even begun-their training. Given the rising cost of higher education and limited access to financial aid, prospective teachers have strong incentives to pursue emergency credentials and other alternative routes to a teaching position, which often bypass the university-based teacher preparatory programs altogether (National Center for Education Statistics [NCES], 2013). Beginning teachers with solid teacher preparation are faced with the struggles of teaching, while alternative licensure teachers enter the classroom with little formal training in best practices of teaching. Districts have to address these challenges by creating induction models that meet the various needs of the teachers being hired in schools in order to adequately prepare teachers during those crucial beginning years. Couple this with the fact that nearly 40% of teachers in some states leave the classroom after five years (Darling-Hammond & Sykes, 2003; Ingersoll, 2012). At the start of the 2017-18 school year, the Learning Institute held a forum in Washington, DC on teacher turnover because roughly 90% of annual teacher demand across the United States is associated with teachers leaving the profession, particularly in high-needs schools, where students were at least four times more likely to be taught by an uncertified teacher (Strauss, 2017).

Beginning teachers are leaving the profession as quickly as they enter into teaching. According to the National Center for Education Statistics (NCES, 2013), Schools and Staffing Surveys in 2013 an analysis of the Teacher Follow-Up Survey (TFS) cited the top 5 reasons teachers left the profession as: (1) personal life reasons (pregnancy, child care, other), (2) pursue a different position, (3) dissatisfied with school assessment/accountability policies, (4) dissatisfied with administration, (5) dissatisfied with teaching as a career. Teacher attrition also tends to be highest in schools serving high concentrations of low-income students and students of color. In 2012-13, almost 1 in 10 teachers in high-poverty public schools left the profession; by contrast, fewer than 1 in 15 teachers in low-poverty schools did so (Goldring et al., 2014).

The research continues to show that underprepared teachers and teachers in high-poverty schools tend to exit the profession quickly. The obvious answers to why teachers are leaving point to low teacher salaries, inadequate preparation and support, low levels of administrative support and poor working conditions (NCES, 2013; Strauss, 2017). According to Strauss (2017), beginning teacher attrition is higher for teachers who are underprepared and un-mentored. Teachers with little or no training leave at 2-3 times the rate of teachers with comprehensive preparation. Thus far one can deduce that the chances of a new teacher entering the profession through an alternative pathway, receiving little mentoring or teacher support, and teaching in a high-poverty school is highly unlikely to stay in the teaching profession after the first few years.

For decades, the US has been looking at teacher turnover rates compared to high-achieving jurisdictions such as Finland, Singapore, and Ontario, Canada where attrition averages 3-4% per year. According to Strauss (2017), in Toronto, Canada, the retention rate for beginning teachers was 98%, due to a well-designed 4-year teacher induction program.

Research points to five major strategies and related policies that can positively influence teachers' decisions to enter and remain in the teaching profession: (1) Strengthen preparation, (2) Improve hiring, (3) Increase compensation, (4) Provide support for new teachers, (5) Improve working conditions (school leadership, professional collaboration, shared decision making, accountability systems, and resources for teaching and learning) (Podolsky et al., 2017). Characteristics of strong teacher preparation include having opportunities to observe other teachers, having a full semester or more of student teaching, receiving feedback on those early teaching experiences, and taking courses in teaching methods, learning theory, and the selection of instructional materials (Ingersoll et al., 2014).

Research shows that teacher induction programs can provide a significant return on investment and help to retain teachers (Ingersoll et al., 2014; Strauss, 2017). Many school districts have resorted to creating and growing their own local models in efforts to recruit talented individuals to the teaching profession. Teacher residencies-another proven grow-your-own model- offer another effective and affordable means of entering the profession (Public Impact, 2015). Modeled after medical residencies, these programs allow talented teacher candidates to work as paid apprentices alongside expert teachers, giving them a way to earn income and gain valuable experience while completing their credentials as long as they commit to teaching for several years in that district (Podolsky et al., 2017).

Context of Study

Pitt County Schools (PCS) is a rural district in Eastern North Carolina that serves approximately 24,000 students. Greenville is the county seat and home of East Carolina University (ECU), the third largest university in North Carolina, comprised of 12 colleges and schools including the Brody School of Medicine, the School of Dental Medicine, the College of

Business, and the College of Education. Vidant Health Systems is headquartered in Greenville, with over 6,000 employees in its region. Despite its role as the center of education, commerce, employment, and health care in eastern North Carolina, Pitt County posts an estimated poverty rate of 24%. PCS operates 39 schools of varying grade ranges located throughout the county, in which an average of 66.3% of students qualified for free or reduced-price school meals in 2018-2019.

The 17.3% teacher turnover rate in Pitt County Schools exceeded the state average of 14.4% from 2012-2016. To address these challenges, PCS deployed the R3 Human Capital Management System in 2013 to the extent possible with available resources. The R3 Program was designed to (1) Recruit, retain and reward effective and highly effective teachers working in high-need schools; (2) Increase student growth and academic achievement in targeted schools; and (3) Reduce the number of high-need schools labeled “Low Performing.” This grant was funded by the Federal Government and now includes two grants totaling 21 million dollars. The R3 program was designed to not only retain effective, experienced teachers, but also to work to mitigate the impact of the large number of inexperienced teachers hired because of turnover.

In the fall of 2018, Pitt County Schools launched the MCT Program. MCTs were requested by the schools through a human resource process that began in the Spring of 2018. School Improvement Teams (SIT) requested an MCT position by identifying the need and submitting a proposal. MCT positions were allotted by the District Office, and finally identified by a team consisting of the beginning teachers and the school principal. Pitt County Schools allotted 15 MCT positions beginning in the 2018-2019 school year. The MCT position required a three-year commitment, so future MCT positions would not be available until the end of the three years. MCTs received a compensation equal to 15% greater than FTs (approximately 30%

above what a Professional Teacher makes). MCTs were expected to provide mentoring and induction supports for BTs addressing many of the factors that cause BTs to leave their teaching jobs. The purpose of the MCT program was to ultimately build teacher capacity in beginning teachers and contribute to advanced teaching roles in the district.

Problem Statement

New teachers who lack mentoring and induction supports leave at about twice the rate of those who receive the highest-quality induction (Strauss, 2017). New teachers need additional support and professional development experiences to become more effective teachers. The research on new teacher induction and attrition examines program supports such as mentoring and professional development (Feiman-Nemser, 2012; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004; Sundli, 2007).

One strategy that is broadly researched in an effort to close the achievement gaps between general and special education students is co-teaching (Friend et al., 2010). Co-teaching occurs when two teachers teach the students in a single class the same material. Most of the research (Forbes & Billet, 2012; Kohler-Evans, 2006; Little & Dieker, 2009; Pugach & Winn, 2011), on co-teaching report improved student outcomes; specifically comparing special education outcomes. However, very little research exists on how co-teaching impacts the teachers' self-efficacy. The research on co-teaching as a strategy to support beginning teachers is even more limited. There is a gap in the literature on how co-teaching can be used in the general education setting between a skilled veteran teacher and a beginning teacher as an apprentice model to support beginning teacher's professional development. This study sought to address some of these gaps in literature and examined the effects of using an MCT Program which was anchored in co-teaching, on BT self-efficacy as well as the teacher retention.

Purpose of the Study

A growing number of beginning teachers are leaving teaching within their first 3 years, with half leaving the profession in the first 5 years (Darling-Hammond & Sykes, 2003; Ingersoll, 2012). In an attempt to slow this level of attrition, school districts are erecting ambitious induction programs. The purpose of this study was to determine how the MCT Program, grounded in a model of co-teaching, impacted BT self-efficacy and retention. This study utilized the Model for Improvement (Langley et al., 2009). The Model for Improvement suggested utilizing PDSA Cycles to determine the impact of improvements. Through the use of multiple PDSA Cycles, the researcher sought to determine how the MCT program impacted BT self-efficacy and retention and then utilized this data to improve BT retention.

Research Question(s)

This study explored two major areas: teacher self-efficacy and teacher retention. The purpose of this study was to determine how the MCT Program addressed teacher self-efficacy and retention and then utilize the Model for Improvement (Langley et al. 2009) to improve beginning teacher self-efficacy and retention. The following study questions guided the research:

1. To what extent does the self-efficacy of beginning teachers change as a result of the MCT Program?
2. To what extent does the self-efficacy of beginning teachers change as a result of the small-scale improvement strategy?
3. How does the MCT program contribute to BT retention?

The study took place in 14 schools in Pitt County that began implementing the MCT Program in 2018-2019. The researcher's school, Elmhurst Elementary, was one of the 14 schools in this study since Elmhurst Elementary was implementing the MCT Program in two 3rd grade

classrooms. Of the 15 MCT Programs implemented in Pitt County in 2018-2019 the following was the breakdown by grade configuration and subject area; 7 elementary schools (6 focused on reading and 1 focused on math), 4 K-8 schools (2 focused on reading and 2 on math), 2 middle schools focused on math, and 2 high school settings (1 MCT worked with 8th grade reading and 9th grade reading) (see Table 1). There was only one MCT Program that represented a multi-school approach, which was Ayden Grifton High School 9th grade English paired with Grifton's (K-8 school) 8th grade English Language Arts. In this case the MCT worked with BTs in both schools to create a vertically-aligned reading focus within this co-teaching context.

The MCT information provided in Table 1 included the MCTs from each of the participating 14 schools in Pitt County from the 2018-2019 school year. The school level, grade and subject focus and MCT assigned did not change for the 2019-2020 school year; however, the Co-Teachers (Co-Ts) and BTs who participated may have changed during the study due to transfers, job changes, or deciding not to participate for various reasons. This information as well as a breakdown of the Co-Ts/BTs demographic information including experience level and path to licensure was updated prior to conducting the study. The researcher worked with the directors from the DEEL office as well as Pitt County Schools Human Resources department to obtain the background and demographic information of the participants in the study.

Conceptual Framework

Drawing upon the work of Albert Bandura, people's judgements of their own ability to deal with different situations is central to their actions (Kaufman, 2003). Self-efficacy refers to the belief that one is capable of dealing with situations that arise from four main information sources: mastery experiences, vicarious experiences, social persuasion, and physiological responses to experiences (Peterson & Arnn, 2008).

Table 1

MCTs Participating Schools 2018-2019

School Name	MCT Focus	No. of BTs/Co-Ts MCT is supporting
Ayden Grifton HS/Grifton	9 th English & 8 th ELA	2
CM Eppes Middle	7 th Grade Math	2
EB Aycock	6 th Grade Math	3
Elmhurst	3 rd Grade Reading	2
GR Whitfield	6-8 th Grade Math	2
Grifton	6-8 th Grade Math	2
Grifton	6 th -7 th Grade Reading	2
HB Sugg	2 nd Grade Reading	3
Lakeforest	3 rd Grade Reading	3
Ridgewood	2 nd -3 rd Grade Reading	2
South Central HS	Math 2	2
Sam Bundy	3 rd -5 th Grade Math	2
South Greenville	K-2 Reading	2
Stokes	4 th -6 th ELA	2
Wahl-Coates	3 rd -5 th Grade Reading	2

According to Bandura, successes raise self-efficacy, while failures, especially if they occur early in the learning process, are likely to lower self-efficacy. Bandura's cognitive theory of self-efficacy suggests that efficacy may be most malleable early in learning, thus the first years of teaching could be critical to the long-term development of teacher efficacy (Hoy & Spero, 2005). Kaufman (2003), Zee & Koomen (2016) suggest that observations of others performing successfully through modeling can strengthen beliefs that one can perform similar tasks. Self-efficacy is at the very core of human existence as people seek ways to exercise control to bring about desired results in their lives (Bandura, 1997).

Although few studies have looked at the development of efficacy beliefs among novice teachers, efficacy beliefs of first-year teachers are related to stress and commitment to teaching, as well as satisfaction with support and preparation. According to a study by Hoy and Spero (2005), beginning teachers completing their first year of teaching who had a high sense of teacher efficacy found greater satisfaction in teaching, had a more positive reaction to teaching, and experienced less stress.

Bandura's social cognitive theory of self-efficacy provides the conceptual foundation for this study as teacher self-efficacy was a proposed variable. The MCT Program was designed as a co-teaching model that provided mentoring, coaching and individualized support for novice teachers. The purpose of this study was to examine how the MCT model impacted beginning teacher support and one variable that was measured was teacher self-efficacy. The researcher utilized the Teachers' Sense of Efficacy Scale (long form) to measure and compare BT self-efficacy in two cycles during the MCT program implementation. A more thorough and detailed explanation of the conceptual framework is presented in Chapter 2.

Definition of Key Terms

Beginning Teacher (BT) - Teachers who are new to teaching, within their first three years as a teacher.

Co-Teacher (CT) - Novice or beginning teachers who apprentice themselves to a Multi-Classroom Teacher and receive specialized training in the co-teaching methodology; engage in co-planning, co-teaching, and co-reflecting with the Multi-Classroom Teacher (Feller, 2016).

Co-teaching - A method by which two educators work collaboratively to deliver quality instruction (Murawski & Hughes, 2009). Co-teachers must accept mutual ownership and joint accountability for their students.

Education Value-Added Assessment System (EVAAS) - The State of North Carolina uses this K-12 value-added system to measure teacher impact and effectiveness. Teachers receive one of three ratings: Exceeds Expected Growth, Meets Expected Growth, or Does Not Meet Expected Growth based on student outcomes on standardized test (Feller, 2016).

Induction - Individualized professional development designed to incorporate new teachers into collaborative professional learning communities (Feiman-Nemser, 2012).

Master Teacher - Any teacher that has a minimum of five years of experience and has demonstrated highly effective instruction. A master teacher could also refer to a teacher with advanced college degrees.

Multi-Classroom Teacher (MCT) - These master teachers, as demonstrated by both classroom observation and student performance data, co-teach across multiple classrooms with other teachers and apprentice them in the art and science of what highly effective instruction looks like (Feller, 2016).

R3 Model - Pitt County Schools launched the R3 Framework: Recruit, Retain, Reward in 2013. R3 is an innovative, relevant, and cost-effective initiative focused on developing teacher leaders through intensive professional learning, leadership opportunities and career pathway compensation models (Feller & Brown, 2018).

Teacher Self-efficacy (TSE) - Teacher beliefs and self-referent judgments of their capabilities (Zee & Koomen, 2016).

Assumptions

The assumption most critical to this study was that having an experienced Multi-Classroom Teacher mentor, support and co-teach with novice teachers would improve instructional practices for the novice teacher and therefore increase teacher self-efficacy. The literature on new teacher support and induction programs lacked research in the area of how co-teaching can impact teacher induction, preparedness, and ultimately retention. By participating in this MCT program, beginning teachers in the study were provided supports such as coaching, modeling, co-teaching and reflecting by a master teacher, with the assumption that these strategies would increase BTs instructional methodologies. BTs who participated in this program should report more favorable perceptions of their first years teaching compared to the traditional BT experiences.

Scope and Delimitations

This study was conducted utilizing data from 14 Pitt County Schools (PCS) in Eastern North Carolina. The Pitt County School district employed 37 schools, 20 of which were Elementary Schools. In 2018-2019, PCS employed 15 Multi-Classroom Teachers across 14 schools who mentored, supported and apprenticed approximately 60 beginning teachers.

Due to the limited number of schools participating in the MCT model and the lack of previous research on this particular study, the researcher chose to utilize this study to provide information to the district to inform program research. The MCT Program was intended to be a two-fold model to create additional career pathways for the districts' most effective teachers, compensating them for working with students across multiple classrooms and supporting novice teachers through co-teaching, mentoring and coaching. For this study, the researcher chose to focus on how the MCT program impacted beginning teachers' self-efficacy and retention to isolate the research variables.

Limitations

One limitation of this study was the researcher's employment with PCS during data collection. The researcher was the principal of one of the elementary schools in which the MCT Program was being implemented with two beginning teachers in two third grade classrooms. The researcher participated in the District's MCT Training and Professional Development Sessions and wrote a proposal to the district to participate in the 3-year MCT Model at the researching school. These factors contributed to the limitations due to the researcher's wealth of knowledge about the MCT Program, the teachers included in the research, and the school in which research was being conducted, that could create bias prior to data collection.

Significance of the Study

Collectively, research has addressed the significance of teacher induction programs to impact new teacher support and attrition. The research identifies mentoring and professional development as the central strategies that impact beginning teacher experiences. The body of literature on co-teaching (Dieker & Murawski, 2003; Friend et al., 2010; Little & Dieker, 2009; Pratt, 2014), has revealed that, while there is consensus on what is needed to constitute a

successful co-teaching experience, very little is understood about the impact co-teaching has on teacher self-efficacy and using co-teaching as a strategy for new teacher support. The MCT Program is grounded in the role of co-teaching. There was a gap in literature on using an MCT Program in the general education classroom as a strategy to build beginning teacher self-efficacy and increase retention. There was limited research on the use of local induction models and their impact on beginning teacher support.

In 2009, Public Impact, an education organization that began development of an Opportunity Culture Model, attempted to work on extending the reach of excellent teachers at the local level (Dean et al., 2016). This initiative outlined several school-improvement models that provide students with more access to highly effective teachers as well as opportunities and career advancement pathways for teachers. The Multi-Classroom Leadership Model was one school model introduced by Public Impact and was designed so that teachers with leadership skills, both teach and lead teams of other teachers in order to share strategies and best practices for classroom success. Pitt County Schools R3 Program was based on research aimed at creating self-directed teacher leaders to support and engage teachers to make systematic changes in learning. Pitt County Schools introduced the Multi-Classroom Teacher (MCT) in 2018 as a new position in their Career Pathway Model (Feller & Brown, 2018). These highly-qualified master teachers co-teach across multiple classrooms with beginning or novice teachers and apprentice them in the art and science of what highly effective instruction looks like (Feller, 2016).

With limited quantitative or qualitative research on the use of co-teaching to support beginning teachers and a gap in the research on the Multi-Classroom Teaching Model, this study sought to fill a gap in the literature by providing both qualitative research on the beginning teacher perceptions to this model as well as quantitative research on the effects of teacher self-

efficacy and retention in the classrooms that utilized this model. This small-scale study in one School District using the MCT model could provide significant insights to contribute to the research on the effectiveness and impact on the MCT Program as it relates to beginning teacher self-efficacy and retention.

This study sought to impact educational equity related to assigning teachers to students as well as providing BTs with more individualized support. Increasing teacher quality and providing disadvantaged students' access to effective teachers have been key priorities of the U.S. education platform (Ingersoll et al., 2014; NCES, 2013; OCED, 2018). Compacted by an on-going teacher supply shortage in the US, teacher quality continues to be compromised as there is a rapid movement to recruit and retain teachers and provide students access to highly-qualified teachers. This juggling act of priorities negatively affects the educational equity of our students as well as our teachers. Trends in the research show that disadvantaged or lower-achieving students are more likely to be assigned to inexperienced teachers (Goldring et al., 2014; Hansen & Backes, 2018; NCES, 2013; Strauss, 2017).

In a report published by OECD, using data from the 2015 cycle of the Program for International Student Assessment (PISA), showed that gaps in student performance related to socio-economic status were wider in countries where economically-disadvantaged schools employed fewer qualified and experienced teachers (OECD, 2018). The results implied that most countries should focus on allocating quality teachers to underserved students. The findings also suggest that education systems can do more to address the needs of beginning teachers in disadvantaged schools such as mentoring and professional development opportunities. Ultimately, improving the equity of schooling depends on ensuring that all students have access

to high-quality teachers (Dean et al., 2016; Feller, 2016; Goldring et al., 2014; Ingersoll et al., 2014; OECD, 2018; Podolsky et al., 2017).

Summary

Recruiting and retaining quality teachers has been a priority for educational leaders for decades in the United States. Teachers will continue to leave the profession at alarming rates if reform efforts and policies continue to fall short of slowing this statistic (OCED, 2018; Stewart et al., 2021). The purpose of this study was to determine how the MCT Program addresses beginning teacher self-efficacy and retention and then utilized the Model for Improvement (Langley et al., 2009) to improve beginning teacher self-efficacy and retention. A gap in the research existed on the Multi-Classroom Teaching Model and how this model impacted teacher self-efficacy. Using Bandura's Social Cognitive Theory of Self-Efficacy as a conceptual framework, this study sought to address the gap in literature as well as examined the effects of using an MCT model on BT self-efficacy and retention. The following chapter includes an in-depth review of the current literature on teacher self-efficacy, beginning teacher induction, collaboration, mentoring, administrative support, professional development, co-teaching, teacher residency models, classroom management, and the MCT co-teaching model.

CHAPTER 2: REVIEW OF LITERATURE

The problem of practice addressed in this study was low teacher self-efficacy and higher teacher turnover rates for beginning teachers. This study investigated how the Multi-Classroom Teacher (MCT) Program, grounded in a model of co-teaching, addressed these problems. The purpose of this study was to determine how the MCT Program impacted BT self-efficacy and then utilized the Model for Improvement (Langley et al., 2009) using the Plan-Do-Study-Act (PDSA) Cycles to improve beginning teacher self-efficacy and retention.

The literature revealed that teacher retention has become a national crisis and close to one-third of the nation's teachers leave the profession in the first three-years (Curran & Goldrick, 2002; Gujarati, 2012; NCES, 2013; Strauss, 2017). The research on beginning teachers (BTs) cites induction programs, mentoring, and professional development as crucial components of beginning teacher support. Collaboration and providing a collegial atmosphere with positive working conditions were key themes highlighted in the current literature. The literature revealed the crucial role that school administration plays in beginning teacher retention along with creating positive working conditions and a healthy school climate. This chapter presents a review of the literature on student achievement, beginning teacher self-efficacy, support, and factors affecting retention. The first section of this chapter presents the literature on teacher self-efficacy, which provides the conceptual foundation and framework of this study. The following sections include a review of the literature related to beginning teacher support systems, such as induction, collaboration, PLC's, mentoring, administrative support, and professional development. The final section discusses the research related to beginning teacher support programs and initiatives that have been implemented to increase BT retention such as co-teaching, teacher residency programs and the Multi-Classroom Teaching Program.

Conceptual Framework

Teacher self-efficacy (TSE) was developed from Rotter's (1966) work on locus of control and Bandura's (1977) self-efficacy theory (Tschannen-Moran et al., 1998). Rotter's theory laid the groundwork for the first teacher self-efficacy scale, developed in the 1970s by the Rand Corporation, a simple two-item instrument designed to assess teachers' beliefs about their abilities to bring positive student change (Zee & Koomen, 2016). Building on Rotter's theory, Bandura argued that individuals' behaviors are influenced not only by generalized expectancies for control but also by individuals' perceived capabilities, or *self-efficacy*, to perform those behaviors in particularized domains. Bandura (1977) held that personal self-efficacy beliefs seem to be the most important cause of human behavior. As the predictor of outcome expectancies, they help a person decide which courses of action to pursue and whether to persist in the face of environmental adversities.

Bandura's addition to Rotter's theory led some researchers in the 1980s to differentiate between Bandura's self-efficacy and Rotter's outcome expectancies. Particularly, researchers Gibson and Dembo (1984), developed a measure of TSE that separated these two factors into the categories of personal and general teaching efficacy. Gibson and Dembo's TSE scale remained popular until the late 1990s (Zee & Koomen, 2016).

Bandura's sociocognitive framing led researchers to begin to conceptualize TSE as task specific or situation specific. This growing body of knowledge led researchers to acknowledge that teacher self-efficacy can vary according to different task, situations, or circumstances (Tschannen-Moran et al., 1998). The majority of the TSE instruments are now based on the teachers' role in the classroom rather than outcome expectancy of students.

Researcher's, Tschannen-Moran and Woolfolk Hoy (2001), created a measure for teacher self-efficacy and created the Teachers' Sense of Efficacy Scale (TSES). The TSES, formerly the Ohio State Teacher Efficacy Scale (OSTES), was tested for validity in studies using pre-service and in-service teachers. A careful selection of items after examinations of factor structure gave rise to both a Long Form and a Short Form of the OSTES (McGee & Wang, 2014). The TSES remains the most widely used measure of general teacher self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Bandura's social cognitive theory of self-efficacy provides the conceptual foundation for this study as teacher self-efficacy is one of the proposed variables in the study. The MCT model was designed to provide mentoring, coaching and individualized support for beginning teachers. Self-efficacy refers to the belief that one is capable of dealing with situations that arise from four main information sources: mastery experiences, vicarious experiences, social persuasion, and physiological responses to experiences (Peterson & Arnn, 2008). According to Bandura (1997), successes raise self-efficacy, while failures, especially if they occur early in the learning process, are likely to lower self-efficacy. Bandura's theory of self-efficacy suggests that efficacy may be most malleable early in learning, thus the first years of teaching could be critical to the long-term development of teacher efficacy (Hoy & Spero, 2005). Self-efficacy is at the very core of human existence as people seek ways to exercise control to bring about desired results in their lives (Bandura, 1997). Zee & Koomen (2016) suggests that observations of others performing successfully through modeling can strengthen beliefs that one can perform similar tasks.

One problem with research on teacher self-efficacy is that there is no common agreement about how the construct should be conceptualized and how it should be measured (Skaalvik & Skaalvik, 2010; Tschannen-Moran & Woolfolk Hoy, 2001). It has been conceptualized and

measured differently by different researchers. Bandura (2006) proposed that because self-efficacy is concerned with perceived capability, scale items should contain verbs like “can” or “be able to” in order to make clear that the items ask for mastery expectations. He recommended using “I” statements since the aim is to assess each teacher's subjective belief about his or her own capability, and each item should contain a barrier. Based on Bandura's definition of self-efficacy, several instruments have been developed to measure teacher self-efficacy. Most of these instruments either do not measure teacher self-efficacy as a multidimensional construct, do not reflect the variety of tasks and demands that are put upon teachers, or do not follow Bandura's recommendation for item construction (Skaalvik & Skaalvik, 2016; Tschannen-Moran & Woolfolk Hoy, 2001; Woolfolk et al.,1990).

In 2007, Skaalvik and Skaalvik, developed a 24-item Norwegian Teacher Self-Efficacy Scale (NTSES) constructed according to Bandura's recommendations. The scale was administered to 2,249 Norwegian elementary and middle school teachers to test the factor structure of the scale. The study found that teacher self-efficacy was most strongly related to teachers' relations to parents. Positive relations to parents predicted that teachers had stronger self-efficacy beliefs (Skaalvik & Skaalvik, 2010). This indicates that experiencing that one is not trusted by the parents, that parents are critical, or that cooperating with parents is difficult reduces the teachers' beliefs in their ability to plan, organize, and carry out activities required to attain given educational goals. Hence, the results indicate that parents' evaluation of the teaching is an important frame of reference for teachers' self-evaluation and self-perception.

In a 2013 study, Holzberger et al., confirmed that teachers with higher self-efficacy beliefs showed higher instructional quality. Several research studies across all grade levels resulted to positive associations between TSE and job satisfaction (Klassen et al., 2009). A

review of the research concluded that teachers with low levels of self-efficacy were more likely to experience more difficulties with student misbehavior, were more pessimistic about student learning, and experienced higher levels of job-related stress and lower levels of job satisfaction (Bandura, 1997; Klassen et al., 2009; Skaalvik & Skaalvik, 2010).

Beginning teachers are often given the least-desirable and most challenging teaching assignments to signify their position at the bottom of the status hierarchy. However, according to Tschannen-Moran and Woolfolk Hoy (2001), from an efficacy perspective this is a dysfunctional practice as it can lead beginning teachers to adopt a low sense of efficacy that could result in decreased effort and enthusiasm for teaching. Strengthening teachers' self-efficacy beliefs through targeting the sources of self-efficacy enhances the satisfaction teachers gain from their work. School administrators can focus on building teachers' self-efficacy by providing clear opportunities for successful experiences, positive modeling from successful peers, and verbal encouragement. For novice and beginning teachers who have not had adequate opportunities to build successful experiences, and for whom self-efficacy may be most malleable, positive modeling and verbal encouragement may be especially important in building self-efficacy (Tschannen-Moran & Hoy, 2007).

Teachers Affect Student Achievement

The literature is clear that there is no greater influence on a student's success than the quality of his or her teacher (Darling-Hammond & Youngs, 2002; Leithwood et al., 2004; Marzano, 2011; Stronge, 2010; Stronge & Hindman, 2003). When it comes to student performance on reading and math tests, a teacher is estimated to have two to three times the impact of any other school factor, including services, facilities, and even leadership.

The research is unclear on the definition of what constitutes “good teaching”; however, several underlying characteristics were revealed throughout the literature on characteristics of “effective teachers”. Effective teachers exhibit certain skills and qualifications which include verbal ability, coursework in pedagogy, knowledge of special-needs students, teacher certification, and content knowledge of the specific subjects to be taught (Stronge & Hindman, 2003). Highly effective teachers consistently find ways to integrate new methods in an ever-changing profession into their successful practices (Stronge, 2010). Dedication to their work, flexibility, and the willingness to grow are common to great teachers in the face of difficulty and change (Marzano, 2011).

Multiple studies on teacher effectiveness and student achievement revealed that students that are assigned to a highly-effective teacher for just one year can remain ahead of their peers for the next three years, and the opposite is true when students have an ineffective teacher, the negative influence can last for almost three years (Darling-Hammond & Youngs, 2002; Leithwood et al., 2004; Stronge et al., 2007). In an extensive review of the research, Stronge et al. (2007) divided the qualities of effective teachers into four dimensions including instructional expertise, student assessment, learning environment, and personal characteristics of the teacher.

When it comes to instruction the research was clear that effective teachers set priorities, plan instruction, allocate time, and establish high expectations for student achievement and behavior in the classroom (Darling-Hammond & Youngs, 2002; Stronge & Hindman, 2003; Stronge et al., 2007). Effective teachers develop clear learning goals, differentiate instruction to meet the needs of their students, and employ a variety of instructional strategies such as hands-on learning, problem solving, questioning using higher order thinking skills, and create opportunities for students to take risk. Effective teachers’ classrooms are typically organized and

structured for learning with proactive discipline and a student-centered learning environment (Stronge & Hindman, 2003). Personal characteristics of effective teachers identified in the literature included caring nature, positive attitude about teaching and life, reflective and possess a growth mindset, and hold high expectations for themselves and their students (Leithwood & Beatty, 2007; Strong et al., 2007).

In a study by Stronge et al. (2011), related to teacher effectiveness the differences in student achievement in mathematics and reading for effective teachers and less effective teachers were more than 30 percentile points. Effective teachers maximize instructional time and spent more time on teaching compared to ineffective teachers who spent more time on classroom management (Stronge et al., 2011). One critical difference noted in the research between more effective and less effective teachers was their affective skills. Teachers who convey that they care about students have higher levels of student achievement and establish more positive relationships with students (Darling-Hammond & Sykes, 2003; Stronge et al., 2011). Teachers in this study participated in time on task observations and data revealed that classrooms of bottom-quartile teachers (less effective teachers) had three times as many disruptive events compared to top-quartile teachers (Stronge et al., 2011).

BT Induction

The challenges of beginning teaching have been documented for decades as educational practitioners have struggled to find methods to ease the transition for novice teachers. Beginning teachers need an intensive network of support to handle the stresses of the first few years of teaching. Studies have suggested that between 20-40% of teachers leave teaching in their first 5 years (Darling-Hammond & Sykes, 2003; Ingersoll, 2012). According to the Alliance for Excellent Education (2014), the persistent challenge in K-12 education is the “greening” of the

teacher workforce and concerns about the performance and retention of novice teachers (Bastian & Marks, 2017). Over the last 30 years, induction and mentoring programs have become familiar features on the educational landscape (Feiman-Nemser, 2012; Sundli, 2007). By 2008, over 90% of all new public-school teachers received either mentoring or induction support during their first year, up from 50% in 1990 (Ingersoll, 2012).

Although evidence suggests that induction and mentoring programs can benefit teacher retention (Ingersoll & Strong, 2011; Smith & Ingersoll, 2004); one of the largest experimental study indicates that teacher induction is unrelated to teacher retention, instructional quality, or student achievement (Glazerman et al., 2010). In response to the concerns with attrition of novice teachers, North Carolina allocated \$7.7 million dollars from Race to the Top to create the New Teacher Support Program (NTSP), an induction model developed and implemented by the state's public university system and targeted at low-performing schools. In a study conducted by Bastian and Marks, researchers compared the performance and retention outcomes for teachers participating in the NTSP (a university-based induction program targeted at North Carolina's lowest-performing schools) with two groups of comparison sample peers working in other low performing schools and found that there were no significant performance differences between teachers that participated in the NTSP and those that did not (Glazerman et al., 2010).

The literature on teacher induction illustrates a shift in thinking about what induction should look like from early advocates endorsing a view of induction as bridging the transition to teaching, to educational leaders viewing new teacher induction as a process of incorporating new teachers into collaborative professional learning communities (Feiman-Nemser, 2012; Ingersoll & Strong, 2011). Comprehensive teacher induction is expensive. Current literature estimates the

cost of induction programs range from \$1,600-\$6,605 per teacher each year (Alliance for Excellent Education, 2014; Villar & Strong, 2007)

In 2004, The U.S. Department of Education's Institute of Education Sciences contracted with Mathematica Policy Research to conduct a large-scale evaluation of the effects of comprehensive teacher induction across 17 school districts in 13 states. The findings suggest that during the first year of induction, treatment teachers were more likely to be assigned a mentor and receive more support than the control teachers (Glazerman et al., 2010). However, treatment teachers in years two and three received less support than the control teachers. The study found that in new teachers that received one or two years of induction support, there was no impact on student achievement until year three, in which there was a positive impact on student test scores (Glazerman et al., 2010). In this same study, there was a positive correlation between teachers receiving more induction support reporting higher job satisfaction.

Ingersoll and Strong (2011), assert that while the primary goal of beginning teacher support programs is to improve the performance and retention of beginning teachers, programs should include an emphasis on socialization, adjustment, development, and assessment. The existing research illustrates that beginning teacher induction and support practices seldom occur in isolation and the majority of beginning teachers received multiple types of support (Curran & Goldrick, 2002; Ingersoll & Strong, 2011). Research conducted by Wong et al. (2005) found that high-quality beginning teacher support programs are highly-structured, have a focus on professional learning and development, and allow for teacher collaboration. From the capacity-building perspective, high-quality beginning teacher support programs have demonstrated the ability to reduce attrition rates, leading to greater teacher retention rates (Gujarati, 2012).

BT Induction as Collaborative Work

To keep good teachers, educators need to realize that people crave connection (Wong, 2004). New teachers want more than a job, they want to experience success. According to Wong (2004), they want to contribute to a group and to make a difference. The best induction programs provide connection because they are structured within learning communities where new and veteran teachers interact and treat each other with respect and feel valued for their respective contributions. Consistent research has established that teachers remain in teaching when their work environments include elements such as professional learning communities founded on shared mission and goals and high-quality interpersonal relationships founded on trust and respect (Clement, 2016; Darling-Hammond & Sykes, 2003; Fleming, 2014). There has been a fundamental shift from teaching as an independent practice to teaching as an interdependent practice (Feiman-Nemser, 2012).

Collaboration is a dominant theme in research by the Project on the Next Generation of Teachers (Kardos et al., 2001). This study drew attention to the roles experienced teachers play in the professional development of beginning teachers. In this study, researchers interviewed 50 first and second-year teachers in Massachusetts and identified three types of professional cultures in schools. Kardos et al. (2001) labeled these cultures as either veteran-oriented, novice-oriented, or integrated. The study revealed that in the veteran-oriented cultures, veterans decided what the new teachers needed to know which resulted in isolated work environments. In the novice-oriented cultures, the experienced teachers largely left the new teachers to their own devices and gave them little guidance on how to teach. The most fortunate beginning teachers found themselves in schools with integrated cultures that promoted professional collaboration (Kardos et al., 2001; Lovett & Cameron, 2011). Kapadia and Coca (2007) also found that beginning

elementary teachers who regularly collaborated with colleagues in other elementary grades were more likely to report having a positive teaching experience and an intention to remain in the teaching profession.

While collaboration is highlighted in education literature, teaching has remained an isolated job for individuals in their classrooms (Clement, 2016; Kardos et al., 2001; Wong, 2004). Peer coaching and Instructional Rounds have emerged in the literature as a means to which teachers can observe their colleagues. Instructional rounds are one of the most valuable tools that a school or district can use to enhance teachers' pedagogical skills and develop a culture of collaboration. The goal of instructional rounds isn't to provide feedback to the teacher being observed, although this is an option if the observed teacher desires. Rather, the primary purpose is for observing teachers to compare their own instructional practices with those of the teachers they observe. The benefit of this approach resides in the discussion that takes place among observing teachers at the end of the observation as well as in subsequent self-reflection (Marzano, 2011). The 2 + 2 coaching appraisal model developed by Dwight Allen is one such practice where teachers visit each other's classrooms long enough to provide two compliments and two suggestions for improvement. This model has not only been proven to enhance teaching skills and student learning, but has also increased job satisfaction by reviving productive teacher collaboration (Allen, 2005).

Professional Learning Communities

A Professional Learning Community (PLC) is a school organization in which a group of teachers critically shares and analyzes its practice in an ongoing, reflective, and collaborative way focusing on professional growth and learning (Dufour et al., 2008). A key purpose of PLC's is to enhance teacher effectiveness as professionals (Stoll et al., 2006). The increasingly common

use of the Professional Learning Community model has been a benefit to novice educators (Simos, 2013). The six characteristics of PLC's include: (1) shared mission, vision, values, and goals, (2) collaborative teams focused on learning, (3) collective inquiry, (4) action orientation and experimentation, (5) commitment to continuous improvement, and (6) results orientation (Dufour et al., 2008).

A reoccurring theme in the PLC literature indicates the need for supportive structural and cultural school conditions (Darling-Hammond & Sykes, 2003; Lovett & Cameron, 2011; Stoll et al., 2006). Research has shown that adequate support from the school environment impacts teacher's capacity to deliver differentiated instruction to meet the needs of students. Professional cultures in which teachers across all levels of experience work together and exchange ideas afford beginning teachers sustained opportunities to learn from more experienced colleagues (Kardos & Johnson, 2007). PLCs afford teachers opportunities to learn through continuous inquiry with their colleagues (Lieberman & Miller, 2011; Stoll et al., 2006; Wynn et al., 2007).

PLCs Supporting BTs

One qualitative study explored how PLC's, an indicator of a supportive school environment, can enhance beginning teachers' professional learning in differentiated instruction. This study by Neve and Devos (2017), examined how structural and cultural school conditions foster the development of PLCs in the schools' organization. Semi-structured interviews were conducted with school leaders, special needs coordinators, and beginning teachers in primary schools. A comparative analysis was carried out in 3 schools with high, medium and low levels of beginning teachers professional learning in differentiated instruction. The analysis indicated that structural and cultural school conditions were related to the stages of PLC development and

the results revealed that principal leadership played a key role in the development of the structural and cultural school conditions (Neeve & Devos, 2017).

According to Wynn et al. (2007), the intersection of a professional learning communities' framework and teacher retention is complex. In a three-year study that examined teacher retention through a professional learning communities' framework, findings suggest that beginning teachers' decisions to remain at their school site and in the school district is most strongly associated with school climate and principal leadership (Wynn et al., 2007). Some of the difficulties that beginning teachers face may be resolved through interactions with experienced teachers through the PLC framework.

Researchers contend that collaboration among veteran and beginning teachers results in shared norms of practice and knowledge that leads to further teaching development (Lieberman & Miller, 2011; Neve & Devos, 2017). Beginning teachers may be more versed on new instructional approaches and veteran teachers may benefit from this reciprocal collaboration. Research has found strong ties between collegiality and students' academic success (Kapadia & Coca, 2007; Kardos & Johnson, 2007).

Mentoring

A collective review of the literature on teacher induction cites mentoring as having one of the strongest effects on new teacher induction, but gaps exist in the literature on how states and schools implement mentoring programs. Mentoring and induction are two synonymous terms that are often used incorrectly (Sundli, 2007). Mentoring is an action and it is what the mentor does. A mentor is a person assigned to a new teacher (typically by the school principal) to help provide support and guidance. Induction is a comprehensive, sustained professional development process organized by a school system to train, support and retain new teachers. Mentors are

components of the induction process. Mentors need training in how to support new hires and time to work with them (Clement, 2016; McEwan, 2012).

Research suggests that having an assigned mentor alone, does little to remedy new teacher attrition (Feiman-Nemser, 2012; McEwan, 2012). According to Wong (2004), beginning teacher needs are so varied and immediate that the appropriate combination of expertise, experience, and cultural background is unlikely to reside in one mentor available when needed. Lehman (2003) concluded that there is a need for a multi-year induction program that provides systematic help and support to new teachers because another teacher with a full-time load cannot possibly provide all of the support needed when a problem arises for a new teacher. According to Moir (2009), research indicates that the conditions that support effective mentoring include physical proximity, grade-level and/or subject-matter matches, personal compatibility, and allocated time. The literature suggests careful selection, advance training, and ongoing professional development of mentors as part of a comprehensive induction program (Feiman-Nemser, 2012).

Case studies of thoughtful mentors at work show that they act as co-thinkers, co-planners, helping new teachers reframe challenges, design and modify instruction and assessments, and analyze and promote student learning. Mentors also deliver difficult feedback and strive for a balance between supporting new teachers and challenging them to grow (Wang et al., 2008; Yusko & Feiman-Nemser, 2008). Large-scale surveys suggest that strong mentoring can increase teacher commitment and retention (Smith & Ingersoll, 2004). Kapadia and Coca (2007) found that novice elementary teachers who received strong mentoring were more likely to report that they intended to continue teaching.

One study that contradicted the research that mentors assigned in the same subject or grade level provide more support for new teachers was from the Comprehensive Teacher Induction Study conducted by Glazerman et al. (2010). In this study, beginning teachers who had the same race/ethnicity as their mentor or taught the same grade level as their mentor had lower rates of retention in the district and the teaching profession. When researchers examined beginning teacher attitudes and student outcomes, there was no significant relationship with mentors matched (Glazerman et al., 2010). This could indicate that other factors could have played a role in the beginning teachers attrition rate.

While school districts often provide some support to new teachers through induction and mentoring programs, mentors are almost always full-time classroom teachers themselves. The level of support mentors can provide does not always assist new classroom teachers with deepening their content knowledge, assessing the learning needs of entire classes of children, and implementing instruction that is adequately differentiated to meet the needs of a wide range of learners (Fleming, 2014). Consistent research during the past three decades has established that mentoring, in and of itself, fails to provide evidence of the connection between well-executed professional development and student learning (Villar & Strong, 2007; Wong, 2004; Yusko & Feiman-Nemser, 2008). When mentoring is framed around new teacher learning as the goal, mentors become teachers of teaching, rather than buddies or survival assistance to beginning teachers. Professional development for mentor teachers provides opportunities for mentors to clarify their vision of teaching, develop skills in observing and reflective coaching which builds the capacity of mentors and should increase their retention (Feiman-Nemser, 2003; Feiman-Nemser, 2012; Gilbert, 2005).

A critical component of mentoring programs is observation and dialogue about teaching, which helps to provide the opportunity for beginning teachers to develop and progress (Gilbert, 2005). Trained and qualified mentors are essential to the success of beginning teacher support programs (Gujarati, 2012). Furthermore, Kardos et al. (2001) contends that mentors must be supportive, active listeners, non-judgmental, and open to the teaching style practiced by the beginning teacher, even if it is different than their own. Mentoring increases beginning teacher retention by offering support, guidance and advice. Mentors and other veteran teachers play a prominent role in assisting beginning teachers with their confidence and reducing frustrations that may cause them to leave the field.

Literature on benefit-cost analysis of mentoring programs for beginning teachers is limited in scope. Researchers conducted a benefit-cost analysis of the comprehensive mentoring program in California to determine whether comprehensive mentoring for teachers made financial sense. Findings revealed that increases in teacher effectiveness yielded greater savings than the reduction in costs associated with teacher attrition. The benefit-cost analysis showed that, after 5 years, an investment of \$1 produces a positive return to society, the school district, the teachers, and the students, and the state almost recovers its expenses (Villar & Strong, 2007). States are increasingly recognizing the value of mentoring programs for giving new teachers the additional support they need as they begin their teaching careers (Allen, 2005).

Classroom Management

The literature generally defines classroom management as an umbrella term that describes teachers' efforts to manage the classroom environment, including social interactions, student behavior, and learning (Evertson & Weinstein, 2013; Martin & Baldwin, 1996). A challenge and concern for many beginning teachers that aligns to teacher satisfaction and student

academic success is classroom management (Dicke et al., 2015; Lazarides et al., 2020). Multiple studies have shown that successful classroom management enhances students' academic learning time by increasing student engagement, motivation, and attention (Evertson & Weinstein, 2013; Piwowar et al., 2013). Classroom management is one of the most widespread challenges for all teachers, especially beginning teachers and research suggests that difficulty in establishing and maintaining effective classroom management has shown to correlate with teacher burnout and job dissatisfaction (Feiman-Nemser, 2003; Piwowar et al., 2013; Woolfolk et al., 1990).

Classroom management goes beyond managing behavior, it supports instruction and involves fostering healthy student-teacher relationships (Dicke et al., 2015; Hardin, 2008; Martin & Baldwin, 1996; Martin & Sass, 2010; Piwowar et al., 2013). Beginning or inexperienced teachers are generally more controlling in their beliefs and perceptions of classroom management (Kagan, 1992; Martin & Baldwin, 1996). Kagan's (1992) synthesis of the learning-to-teach literature reveals beginning teachers tend to be overly concerned with classroom control and shift the focus of lesson planning from activities designed to encourage learning to those less likely to cause disruption. Multiple studies have revealed that beginning teachers feel unprepared to handle the realities of classroom management and often resort to practices that do not support positive learning environments. Thus, without proper support and assistance, beginning teachers are more likely to experience higher levels of stress and teacher burnout (Dieke et al., 2015; Donaldson & Johnson, 2011; Glazerman et al., 2010; Kardos & Johnson, 2007).

Teachers' self-efficacy for classroom management is regarded as an essential component of teacher ability and a key predictor of effective classroom management strategies (Evertson & Weinstein, 2013; Kunter & Baumert, 2007; Zee & Koomen, 2016). Tschannen-Moran et al. (1998) describe self-efficacy as context specific; however, little is known about how classroom

management self-efficacy and classroom management behaviors are shaped by job-related demands (Lazarides et al., 2020). In a study of 395 primary and secondary Australian teachers, researchers utilized the Job Demands-Resources model in examining contextual influences on developmental dynamics between classroom management self-efficacy and teacher-reported classroom management. This study revealed that teachers' classroom management self-efficacy positively related to aspects of their perceived classroom management (Lazarides et al., 2020).

Researchers have typically assumed that self-efficacy affects classroom behaviors and student outcomes rather than the other way around; however, teachers' self-efficacy seems to be related to their own subsequent perceptions of classroom management (Dicke et al., 2015). In a U.S. study, preservice teachers' self-efficacy increased during teacher education but subsequently declined during their first-year teaching (Hoy & Spero, 2005). In relation to classroom management self-efficacy, U.S. beginning teachers in their first five years reported lower levels compared to teachers with 10+ years of experience (Wolters & Daugherty, 2007). Literature on teacher self-efficacy has shown that school facilities, resources, and colleagues' support, were the variables most strongly related to teachers' self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

In a longitudinal study of 243 secondary teachers to examine teacher burnout and perceived self-efficacy in classroom management, it was concluded that perceived self-efficacy in classroom management has a longitudinal effect on burnout and teacher stress (Brouwers & Tomic, 2000). Multiple studies advise educational leaders to take perceived self-efficacy in classroom management into consideration when developing interventions and professional development for beginning teachers (Brouwers & Tomic, 2000; Lazarides et al., 2020; Martin & Baldwin, 1996; Piwowar et al., 2013). The findings suggest that beginning teachers self-efficacy

in classroom management would be increased by reducing excessive demands and workload, providing supportive collegial relationships and strong mentoring programs that focus on teacher reflection, reducing teaching negativity and adaptive classroom management strategies (Dicke et al., 2015; Kunter & Baumert, 2007; Lazarides et al., 2020; Zee & Koomen, 2016).

Administrative Support

Among teachers who leave their jobs due to dissatisfaction, salaries and working conditions such as poor administrative support run neck and neck as reasons for leaving (Darling-Hammond, 2003). Adequate social support begins with the building principal. A climate of collaboration between administrators, instructional support personnel, and teachers must be prevalent in order to allow new teachers to feel comfortable about seeking assistance as they embark on teaching careers (Flynt & Morton, 2009). What most administrators may fail to realize is that many teachers are sinking.

Thibodeaux et al. (2015) conducted a study to examine whether principal leadership and the demands of high-stakes testing had an impact on teachers' intent to remain in the teaching profession. This study found that principal leadership had the strongest bearing on whether teachers would remain in the teaching profession. Teacher responses from multiple studies confirmed that job dissatisfaction accounted for nearly 40% of teachers departing high poverty schools, with lack of administrative support being a contributing factor to teacher dissatisfaction (Allen, 2005; Thibodeaux et al., 2015). These findings suggest that teachers rely heavily on administrative support in providing an environment where teachers experience high levels of job satisfaction. Donaldson and Johnson (2011), conducted a study of Teach for America Teachers and found that nearly one-tenth of the teachers cited poor administrative leadership at their school as the reason that they left teaching.

In 2005, the Education Commission of the States reviewed 91 studies on teacher recruitment the research found that schools with strong administrative support and teacher autonomy have lower teacher turnover rates (Allen, 2005). Principals are key to influencing working conditions by improving the school culture (Deal & Peterson, 1990). The initial investment of time Principals spend on building relationships with beginning teachers will aid in teacher retention.

Professional Development

The starting point for professional learning is best located in schools and classrooms where teachers work and where they can define and solve real problems of practice. Professional communities build relationships between and among teachers who share students and who are working for greater student learning (Lieberman & Miller, 2011). New teachers are still learning to teach and are not likely to develop effective practices alone in isolation. In order for new teachers to receive the individualized professional learning, considerable variables must be in place to identify the need such as peer-observations, formal and informal observations by administration, mentors and peers, and a collaborative learning environment to foster new teacher's growth and reflection.

Research on teacher professional development indicates that teachers leave trainings and rarely implement the ideas into their classroom (Grossman & McDonald, 2008). The Chicago New Teacher Support Program (CNTS) was designed to provide follow-up classroom-based support, co-teaching, and cognitive coaching thought to better result in establishing and implementing goals for improvement and learning (Fleming, 2014). The second component of the CNTS study was focused on providing individualized professional development not just delivered by mentor or experienced teachers, but new teachers expertise and strengths were

utilized to provide opportunities for new teachers to present to their colleagues. The findings suggested that engaging beginning teachers as experts in professional development increased their sense of efficacy and confidence in their teaching skills (Fleming, 2014).

In a small qualitative study of beginning teachers in their second year of teaching, findings indicated that the support systems in school do not encourage the new teachers to become self-monitoring or critically reflective practitioners (Dymoke & Harrison, 2006). Professional development seems to be largely rooted in performance-led school managerial systems that may leave beginning teachers unsupported in relation to their career aspirations and personal and professional targets.

Co-Teaching

Co-teaching is grounded in the understanding that learning to teach is a sociocultural activity where teachers collaborate to create a supportive environment (Roth & Tobin, 2004). Co-teaching initially began as a collaborative between a general education teacher and a special education teacher in response to Public Law 94-142 Individuals with Disabilities Education Act (IDEA) legislation to support students with disabilities in general education classrooms (Friend et al., 2010; Nichols et al., 2010). Though definitions of co-teaching vary in the literature, educators agree that co-teaching involves two or more adults collaborating to instruct students (Friend et al., 2010; Murawski, 2010; Nichols et al., 2010). Most of the literature on co-teaching focuses on implementation, emphasizing the need for adequate time for planning, ongoing professional development, administrative support and effective collaboration between both teachers (Kloo & Zigmond, 2008; McEwan, 2012; Murawski & Hughes, 2009; Roth & Tobin, 2004; Villa et al., 2008). Before co-teaching implementation, stakeholders need to have the basic knowledge, goals and expectations of co-teaching classrooms (Wassell & LaVan, 2009).

Murawski (2010) determined that a number of factors need consideration before implementation such as class size, parent communication, shared goals and vision for co-teaching and professional development for all stakeholders.

Other uses of co-teaching discovered in the literature included class-size reduction and using co-teaching as an intervention strategy. Districts in Florida at one time were utilizing co-teaching classrooms as a strategy to lessen the teacher to student ratio, which the Florida state school board has since discouraged districts from doing (Sutton et al., 2008). Response to Intervention (RTI), defined as a pyramid of intervention strategies to assist at-risk students, included co-teaching as a strategy within the tiers of assistance for students who had academic difficulties (Murwaski & Hughes, 2009).

The study of co-teaching practices for pre-service teachers has been acknowledged in the research as having a positive impact on teacher preparation (Bacharach et al., 2010; Brinkmann & Twiford, 2012; Tschida et al., 2015). Co-teaching practice for student teachers was becoming more prevalent in universities and student teachers' shared ideas and assisted in proper co-teaching program models (Murphy et al., 2009).

Data from several studies found that participation in co-teaching during student teaching made student teachers feel more comfortable and confident in co-teaching classrooms which led to more collaborative planning and professional growth (Kamens, 2007; Tschida et al., 2015; Villa et al., 2008; Wassell & LaVan, 2009). Tschida et al. (2015) introduced a 2:1 model of co-teaching in teacher preparation in which 2 teacher candidates co-teach with 1 cooperating teacher during their internship. Data from this study revealed that the most important effect of this model was the positive impact on student achievement growth due to the opportunity for differentiation within the classrooms (Tschida et al., 2015). An unexpected benefit found in the research of co-

teaching during student teaching was that co-teaching served as professional development for cooperating teachers (Badiali & Titus, 2010; Brinkmann & Twiford, 2012; Gallo-Fox & Scantlebury, 2016; Kamens, 2007; Tschida et al., 2015).

While co-teaching provided interns opportunities to develop and gain confidence in their teaching skills, the model was still questioned as an effective way to prepare teacher candidates for having their own classroom. Wassell and LaVan (2009) found that co-teaching interns were less likely to attempt risks and contained less self-confidence when teaching independently.

Benefits of Co-Teaching

A collective review of the literature on co-teaching suggests that two teachers sharing one class can increase the student success and classroom management (Dieker & Murawski, 2003; Pratt, 2014; Villa et al., 2008). Teachers who co-teach reported positive attitudes towards professional interactions and a belief that co-teaching influences student achievement (Forbes & Billet, 2012; Kohler-Evans, 2006; Little & Dieker, 2009; Pugach & Winn, 2011). Two teachers in the classroom provided both educators more time to work individually or in small groups, so all students acquire the content more effectively (Wassell & LaVan, 2009). In a study conducted by Dieker and Murawski (2003) a majority of student surveys revealed the benefits in being in a classroom with more than one teacher. Students in a co-teaching class perceived benefits such as receiving more assistance, improved acceptance of others and an increase of student academic understanding (Friend et al., 2010). Researchers placed an emphasis on administrators playing an active role in co-teaching environments by establishing goals for co-teaching classrooms, conducting observations, meeting with teachers to discuss student success and needs, as well as offering feedback (Bacharach et al., 2010; Dieker & Murawski, 2003; Pratt, 2014; Villa et al.,

2008). School administrators played a key role in co-teaching, as they were the primary source of scheduling, problem-solving, and professional development preparation (Friend et al., 2010).

The most successful co-teaching programs used common planning time and problem solving to find creative and effective ways to meet the needs of learners (Murwaski, 2010).

Creating a positive culture of high expectations for academics and behavior for all students is the foundation for high achievement (Little & Dieker, 2009). A supportive work environment and ongoing administrative support gives teachers room to engage in consistent collaborative planning, problem solving, and reflection (Little & Decker, 2009; Murwaski & Hughes, 2009). Research demonstrates that collaboration works. Two teachers who brainstorm how to solve a learning problem or teach a difficult concept are much more likely to solve problems and teach collaboratively (Murdock et al., 2015).

Barriers of Co-Teaching

A challenge for teachers is sharing a role that has traditionally been individual. Co-teaching involves sharing goals, decisions, instruction, classroom management, accountability, and assessment of student learning. While co-teaching might be viewed as only having to do half the work of teaching; studies show it takes more work on both parties. Co-teaching must be dynamic, united, purposeful and differentiated (Kloo & Zigmond, 2008). A major criterion for successful co-teaching was personal compatibility of the teaching pairs (Brinkmann & Twiford, 2012; Pugach & Winn, 2011). In one study researchers found that while negative interpersonal relationships between cooperating teachers and teacher candidates strained the professional relationship and diminished communication; tensions between teachers also led to enhanced reflection and opportunities for professional growth (Gallo-Fox & Scantlebury, 2016). Co-teaching can also cause stress for both novice teachers and experienced teachers as role

definition and conflict can create unnecessary challenges (Dieker & Murawski, 2003; Murphy et al., 2009; Pugach & Winn, 2011).

Barriers to successful co-teaching that were identified in the research included lack of common planning time, and lack of administrative support (Gallo-Fox & Scantlebury, 2016; Pugach & Winn, 2011). Dieker and Murawski (2003) determined that co-teaching lacks the consistent view as a positive experience for teacher's due to the limited support and professional development during the preparation and implementation. Without the necessary professional development, teachers lacked the utilization of all the tools and resources in order to make a co-teaching setting successful (Roth & Tobin, 2004).

The literature revealed that adequate planning time was a major barrier to successful implementation of the co-teaching model (Dieker & Murawski, 2003; Forbes & Billet, 2012; Murawski, 2010; Murawski & Hughes, 2009). Making use of common collaboration time is a necessity in order for co-teaching to be successful (McEwan, 2012; Roth & Tobin, 2004). Co-teachers had a difficult time finding adequate time to conduct collaborative planning sessions to make co-teaching more successful (Forbes & Billet, 2012).

Several studies revealed that when teachers lacked the choice to co-teach and were instructed to participate by administration or within their district, co-teaching experiences were not as successful (Nichols et al., 2010; Villa et al., 2008). Co-teachers needed the support of their administrators in providing collaboration time and additional professional development, which resulted in lower success rates (Villa et al., 2008). The largest barriers with co-teaching revealed in the literature were lack of professional development involving co-teaching, common planning times, and the lack of buy-in from the administrators (Dieker & Murawski, 2003; Forbes & Billet, 2012; Murawski & Lochner, 2011; Roth & Tobin, 2004).

Teacher Residency Models

In an effort to provide more support for beginning teachers and to help bridge the disconnect between academic coursework and fieldwork, districts across the nation have created their own beginning teacher support models. Zeichner (2010) indicates, there is no magic bullet for fixing the problems that plague teacher education, a promising direction lies in the creation of a “hybrid” or “third space” model to prepare teachers. One such “third space” program, the Newark Montclair Urban Teacher Residency (UTR) emerged in 2007 and was a collaborative endeavor between Newark, New Jersey Public Schools and Montclair State University. Created to mirror medical residencies, pre-service teachers (residents) serve a one-year clinical apprenticeship under the tutelage of an experienced co-teacher in a high-needs school. The first teaching residencies were created to serve the communities of Boston, Denver, and Chicago (Bogges, 2010). In 2009, 28 new urban teacher residency programs were created through support from five-year Teacher Quality Partnership Grants from the Office of Innovation and Improvement in the U.S. Department of Education (Klein et al., 2013). The novice teacher worked alongside the mentor, allowing the novice access to the moment-by-moment thinking and decision-making of the experienced teacher (Klein et al., 2013). A unique aspect of this program was that the coursework during the residency year was constructed, negotiated, and continually modified to reflect the input and observation by all stakeholders. The researchers cited challenges such as institutional regularities, financial resources and sustainability, inventing and borrowing tools and resources and recruitment challenges (Klein et al., 2013). This hybrid “third space” model challenged participants to act, think, reflect, and change by engaging in their own learning.

Teacher residencies not only allow districts to attract and train high-quality teacher candidates, but also provide career advancement opportunities for experienced teachers within those districts to serve as mentors, supervisors, and instructors in the programs. Mentor selection in these programs can be rigorous as mentors in most programs are expected to perform in the top 30% of their school or district and demonstrate the ability to effectively coach adult learners, communicate clearly, collaborate, and undergo extensive training. A major challenge for residency programs is attracting and recruiting qualified mentors as monetary incentives are limited and the considerable time commitment mentors will be invested. In some residency programs such as the Denver residency program mentors are provided a \$2,000 stipend/year; another program called the Aspire program offers mentors a \$3,000 stipend and \$500 for professional development (Perlstein et al., 2014).

Established in 2007, Urban Teacher Residency United (UTRU) began working with districts, non-profits, universities, and states to build and launch teacher residency programs that serve urban and rural high-needs areas. Perlstein et al. (2014) suggests that teacher residency programs not only reduce teacher attrition but result in first year teachers who lead students to higher levels of performance. Aspire Public Schools in Oakland, California joined the UTRU in 2010 and data showed that 44% of residency graduates scored “highly effective” in 2012, compared to 6% of other first-year teachers. Similarly, in 2012-13, Denver Teacher Residency graduates significantly outscored first-year teachers in each of the system’s 12 indicators of effective teaching (Perlstein et al., 2014). Data collected to examine the 2013-2014 UTRU Network program impact revealed that of the 2,078 Residency Program Graduates the 3-year retention rate was 87%, and the 5-year retention rate of these teachers was 82% (Perlstein et al., 2014). In 2015, after five years of implementation of the San Francisco Teacher Residency

(SFTR) Program, 80% of SFTR graduates were still teaching in the district, compared to 38% of other beginning teachers hired in the district. Literature revealed that these residency programs have been effective in preparing teachers, providing career advancement opportunities for veteran teachers, and retaining beginning teachers.

Initial research is promising as to the impact residencies can have on increasing the diversity of the teaching force, improving new teacher retention, and promoting gains in student learning. Residencies support the development of the profession and the acknowledgement that teaching requires rigorous preparation in line with high levels of skill and knowledge needed in the profession. Research suggests that teacher residencies build professional capacity by providing professional learning and leadership opportunities for accomplished teachers in the field, as they scaffold and support the growth and development of beginning teachers (Guha et al., 2016).

There is limited literature and data on the residency programs' impact on student achievement due to the limited case studies and infancy of these programs. A few studies have been conducted that suggest positive student outcomes. A 2015 study of one UTR Program in New York City found that students of UTR residents and graduates outperformed those taught by other novice teachers on 16 out of 22 (or 73%) comparisons of New York State Regents exam scores (Perlstein et al., 2014). A value-added analysis of the Boston Teacher Residency (BTR) program initially found that BTR graduates' students' achievement were comparable to other novice teachers in English Language Arts and mathematics, but BTR graduates' students' achievement gains in math improved rapidly over time, such that by their fourth or fifth year teaching, BTR graduates outperformed veterans by 7% of a standard deviation (National Center for Teacher Residencies, 2016). The Memphis Teacher Residency (MTR) program found that

residency graduates had higher student achievement gains than other beginning teachers and larger gains than veteran teachers on most of the Tennessee Comprehensive Assessment Program (TCAP) exams (Tennessee Higher Education Commission, 2014).

Multi-Classroom Teaching (MCT) Program

Beginning teachers could learn techniques in a co-teaching setting, even though awkward at first, to assist in building their teaching abilities when they were independently instructing a classroom (Wassell & LaVan, 2009). For successful co-teaching to occur, three components are required: co-planning, co-instructing, and co-assessing. Without all three components, co-teaching is not occurring (Murawski & Lochner, 2011).

The Multi-Classroom (MCT) Program was designed to ensure that all three of these components are at the forefront of this model and that on-going professional development in co-planning, co-instructing, and co-assessing is embedded throughout the experience. MCTs are master teachers, as demonstrated by both classroom observation and student performance data, who will co-teach across multiple classrooms with other teachers and apprentice them in the art and science of what highly effective instruction looks like (Feller, 2016). By working on a daily basis with two to four beginning teachers through modeling, co-teaching, and reflection, MCTs will directly impact students in multiple classrooms. Data was not available yet to determine the impact of the MCT program during the 2018-2019 school year in Pitt County, but will be included in this study.

A primary goal of the MCT position is to enable master teachers to coach other teachers and improve those teachers' skill level. Feller and Brown (2018), suggests that the MCT must enter the relationship with a co-teacher with respect and humility in order to foster a productive environment. Pairs must learn to share classroom leadership, acknowledge room for personal

growth, and use reflection as a tool for instructional growth. Improved instruction is a major secondary goal of the MCT program. Co-teaching is intended to strengthen BTs ability to better differentiate instruction, provide more individualized attention in the classroom, and use student data more effectively to produce better lessons for students (Menendez, 2019).

The Multi-Classroom Leadership Model was one school model introduced by Public Impact and was designed so that teachers with leadership skills both teach and lead teams of other teachers in order to share strategies and best practices for classroom success (Public Impact, 2015). The MCT Program was designed by Pitt County Schools Division of Educator Effectiveness and Leadership (DEEL) Department through the R3 Program and Grant. The R3 program refers to an innovative, relevant, and cost-effective initiative designed to implement best practices to recruit, retain, and reward highly effective teachers. The program consolidates multiple initiatives designed to impact student achievement by innovatively investing in our best teachers (Feller & Brown, 2018).

Professional development is a necessity for anyone involved in co-teaching and should begin before co-teaching is originated in a district, and should be ongoing throughout the program (Morocco & Aguilar, 2002; Murawski, 2010). In order to increase the success for co-teaching the following suggestions were made: offer trainings that both teachers can participate in; provide additional time during the week for co-teachers to discuss how the co-teaching classroom can function; and complete observations of other co-teaching settings in the district (Simmons & Magiera, 2007).

Summary and Conclusions

A review of the literature exposed several key themes surrounding beginning teacher support including BT induction, mentoring, collaboration, and the crucial role of school

administrators. This chapter provided a review of the literature on teacher self-efficacy, which provided the conceptual framework for this study. The following sections presented a review of the literature related to beginning teacher support systems. The final section summarized the current literature on the use of co-teaching as a method of instruction. Whereas an abundance of literature exists on co-teaching, very few studies examine co-teaching as a tool for supporting beginning teachers. The chapter concluded with a review of the literature on beginning teacher support initiatives and models including teacher residency models and the multi-classroom teaching program. It can be concluded from a review of the literature that there is a gap in the research on the Multi-Classroom Co-Teaching Model and how this model impacts beginning teacher efficacy and retention. Using Bandura's Social Cognitive Theory of Self-Efficacy as a conceptual framework, this study sought to address the gap in literature and examine the effects of using the MCT model on BT self-efficacy and retention.

The following chapter outlines the methodology for this study which examined the impact of the MCT Program on beginning teacher self-efficacy and retention. Additionally, this study sought ways to improve BT self-efficacy based on data gathered as the study progressed.

CHAPTER 3: STUDY DESIGN

From 2012-2016, Pitt County Schools (PCS) District teacher turnover rate of 17.3% exceeded the state average of 14.4%, and PCS Beginning Teacher turnover rate during that 4-year period was approximately 39% (Revels-Stocks, 2019). To address teacher retention, PCS designed the R3 Human Capital Management System to recruit, retain and reward highly effective teachers, increase student growth and achievement, and provide support for beginning teachers. Under this R3 framework (Feller & Brown, 2018), a Career Pathways Model was created to provide the following teacher leadership roles: Facilitating Teachers (FTs), Collaborating Teachers (CTs), and Multi-Classroom Teachers (MCTs). In the fall of 2018, Pitt County Schools launched the final teacher leadership position under the R3 framework, the Multi-Classroom Teacher position, a teacher leadership position designed to provide intensive job-embedded support for beginning teachers. The term MCT is used for Multi-Classroom Teacher and the term BT refers to beginning teachers. MCTs are defined as master teachers, as demonstrated by both classroom observation and student performance data, who co-teach across multiple classrooms with other teachers and apprentice them in the art and science of what highly effective instruction looks like (Feller, 2016). Pitt County Schools allotted 15 MCT positions beginning in the 2018-2019 school year across 14 schools in the district. The MCT position required a three-year commitment, so future MCT positions were not available until the end of the three years. MCTs received a compensation equal to 15% greater than FTs (approximately 30% above what a Professional Teacher makes).

Multiple studies on teacher effectiveness and student achievement revealed that students who are assigned to a highly-effective teacher for just one year can remain ahead of their peers for the next three years, and the opposite is true when students have an ineffective teacher, the

negative influence can last for almost three years (Darling-Hammond & Youngs, 2002; Leithwood et al., 2004; Stronge et al., 2007). One critical difference noted in the research between more effective and less effective teachers was their affective skills. Teachers who convey that they care about students have higher levels of student achievement and establish more positive relationships with students (Darling-Hammond & Sykes, 2003; Stronge, 2010). Nothing is more fundamentally important to improving our schools than improving the teaching that occurs every day in every classroom. Teachers practices and the learning of their students are significantly influenced by their professionally relevant internal thoughts and feelings; their confidence in their abilities (Leithwood & Beatty, 2007). Teaching is such an emotionally-intense form of work and a teachers' sense of self-efficacy affects their teaching and the learning of their students.

Teacher efficacy refers to a teacher's belief in their own ability to guide students to success (Bandura, 1997). Efficacy beliefs of first-year teachers are related to stress and commitment to teaching, as well as satisfaction with support and preparation. According to a study by Hoy and Spero (2005), beginning teachers completing their first year of teaching who had a high sense of teacher efficacy found greater satisfaction in teaching, had a more positive reaction to teaching, and experienced less stress.

The problem of practice addressed in this study was low teacher self-efficacy and higher teacher turnover rates for beginning teachers. This study investigated how the Multi-Classroom Teacher (MCT) Program, grounded in a model of co-teaching, addressed these problems. The purpose of this study was to determine how the MCT Program impacted BT self-efficacy and retention and then utilizing the Model for Improvement (Langley et al., 2009) using the Plan-Do-Study-Act (PDSA)Cycles to improve beginning teacher self-efficacy and retention. Qualitative

data, in the form of teacher interviews, explored how the MCT program has impacted teacher self-efficacy and retention. The reason for collecting both quantitative and qualitative data was to develop a complete understanding of this research problem by converging and comparing both types of data. The following study questions guided the research:

1. To what extent does the self-efficacy of beginning teachers change as a result of the MCT Program?
2. To what extent does the self-efficacy of beginning teachers change as a result of the small-scale improvement strategy?
3. How does the MCT program contribute to BT retention?

Research Design and Rationale

Improvement Model Using the Plan-Do-Study-Act Cycles

Most improvement efforts require a common approach or framework to impact effective changes. The Model for Improvement is made up of three fundamental questions that drive the improvements along with the Plan-Do-Study-Act (PDSA) Cycle (Langley et al., 2009).

According to Langley et al. (2009), those three fundamental questions include: (1) What are we trying to accomplish? (2) How will we know that a change is an improvement? (3) What changes can we make that will result in improvement? These three questions are at the core of this research study and the PDSA Cycles served as the framework for the trial-and-learning methodology. The PDSA Cycle begins with a plan and ends with an action based on the results of the study.

The problem of practice addressed in this study was low teacher self-efficacy and higher teacher turnover for beginning teachers. The study investigated how the MCT Program addressed these problems. The implementation of a PDSA Cycle combined with specific

strategies in order to improve beginning teacher self-efficacy and retention is the foundation upon which this study was designed. The PDSA Cycle was utilized in three Plan-Do-Study-Act phases.

PDSA Cycle 1

The purpose of the first PDSA Cycle was to administer teacher self-efficacy scales to BTs to study the self-efficacy of beginning teachers participating in the MCT program. The researcher gathered data to obtain a baseline teacher self-efficacy score to identify the weakest category of self-efficacy (student engagement, instructional strategies, classroom management). This first cycle was aligned to Research Question 1 (RQ1).

PDSA Cycle 1 Plan

In this first PDSA Cycle, the researcher administered the TSES to all BTs participating in the MCT program to collect baseline teacher self-efficacy data. Data was collected from the approximately 35-40 BTs classrooms that were participating in the MCT program (see Table 2). The researcher obtained a baseline teacher self-efficacy score to identify the weakest category of BT self-efficacy (student engagement, instructional strategies, classroom management). The researcher met with the Expert Panel to share BT self-efficacy results from the baseline sample.

PDSA Cycle 1 Timeline

In this first PDSA Cycle, the researcher administered the TSES via Google Survey to all BTs at the beginning of the 2019-2020 school year (approximately mid-September). TSES surveys were administered over a 2-week period with a completion date of all surveys returned by September 30, 2019. Once TSES data was analyzed in October the researcher shared data with the Expert Panel. The results and feedback from PDSA Cycle 1 were to be completed by the beginning of November (see Figure 1).

Table 2

MCT Classroom Data

Grade level-Subject	Total Number of MCT Classrooms
3 rd Grade Reading	7
4 th Grade Reading	1
6 th Grade Reading	1
7 th Grade Reading	1
8 th Grade Reading	1
9 th Grade English	1
5 th Grade Math	2
6 th Grade Math	4
7 th Grade Math	4
8 th Grade Math	1
HS Math 2	2

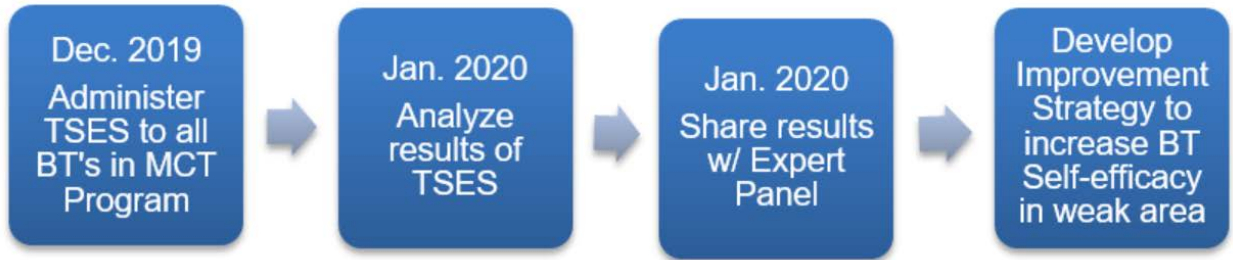


Figure 1. PDSA Cycle 1 timeline.

PDSA Cycle 1 Sampling

Self-Efficacy scale score data were collected from all BTs participating in the MCT Program. This purposeful sample represented 35-40 BTs, which were teachers in their first or second year of co-teaching with an MCT. The Expert Panel group referred to in this cycle was comprised of a representative from Human Resources or Director of Educator Effectiveness (DEEL), two Multi-Classroom Teachers, a Lead Mentor, and two Principals that hosted MCTs.

PDSA Cycle I Instrumentation

Mixed methods research involves the collection of multiple forms of data, such surveys, closed-ended responses found on questionnaires or psychological instruments (quantitative) as well as interviews and observations (qualitative) (Creswell, 2014; Creswell & Plano Clark, 2011). Survey questionnaires are useful in gauging attitudes, sentiments, or characteristics of a given sample (Glasgow, 2005).

The measurement of teacher self-efficacy dates back over 30 years of research. “Teacher efficacy” was first used in two reports of RAND Corporation evaluations of projects that were funded by the Elementary and Secondary Education Act (McGee & Wang, 2014). Following the RAND studies, three measurement instruments emerged in the literature based on Rotter’s Theory (1954): The Teacher Locus of Control (TLC) questionnaire, the Responsibility for Student Achievement (RSA) questionnaire, and the Webb Efficacy Scale in 1982 (McGee & Wang, 2014). In response to the confusion created by so many diverse measurement tools for teacher self-efficacy, Bandura created his own Teacher Self-Efficacy Scale (TSS) in 1997. This survey instrument included a 9-point Likert-type scale with questions such as “How much can you do to keep students on task on difficult assignments?”

Researcher's, Tschannen-Moran and Woolfolk Hoy (2001) created a measure for teacher self-efficacy and created the Teacher's Sense of Efficacy Scale (TSES). The TSES, formerly the Ohio State Teacher Efficacy Scale (OSTES), was tested for validity in studies using pre-service and in-service teachers. A careful selection of items after examinations of factor structure gave rise to both a Long Form and a Short Form of the OSTES (McGee & Wang, 2014). The TSES remains the most widely used measure of general teacher self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

After a review of Teacher Self-Efficacy Survey's, the researcher chose to use the TSES instrument for this study (see Appendix B). The TSES has been used to evaluate the impact of professional development experiences designed to influence teachers' beliefs in their abilities and their subsequent behaviors in the classroom; therefore, this instrument correlated with the purpose of this research in determining if the impact of the MCT model influences teacher's efficacy.

Factor analysis has been used to test the instrument with three moderately correlated factors emerging: Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES has a long (24 item) and short form (12 item) that asks teachers to assess their capability concerning instructional strategies, student engagement, and classroom management. The questionnaire directions ask teachers to rate their opinion about a series of questions related to student engagement, instruction, and classroom management ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Questions include:

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

How well can you respond to defiant students?

This 24-item survey includes 8-items that are aligned with the domain of efficacy in student engagement; 8-items are aligned with efficacy of instructional strategies; and another 8-items are aligned with teacher self-efficacy in classroom management. Surveying teachers about their perceived ability to perform these skills can be used to measure efficacy in beginning teachers (see Appendix B).

PDSA Cycle 1 Procedures

The researcher obtained permission from the superintendent of the target district to conduct the proposed study within the school system. Upon Institutional Review Board (IRB) approval, the researcher sent a letter of introduction via email to the building-level administrators at the fifteen schools in the target district that were implementing the MCT model. Next, the researcher emailed a letter of invitation to the twenty MCT candidates in the target district as well as the 50-55 beginning or collaborating teachers that worked with these MCTs, describing the proposed study and requesting their participation.

After appropriate permissions and approvals were obtained such as informed consent, an electronic version of the Teachers' Sense of Efficacy Scale (long form) was sent to each participant via Google Form, since the district utilized Google Apps for Education. Online survey collection methods can result in higher response rates as they usually involve less time, effort and cost than alternative surveys (Glasow, 2005; Zohrabi, 2013). A link to the survey was included in the letter of invitation that described a brief explanation of the project, assurance of confidentiality, and a statement of informed consent. The survey was designed not to collect respondents email addresses or any identifying demographic information other than two

background questions at the beginning designed to provide guidance during the data analysis phase. Those questions included: Please indicate your role/position: Beginning Teacher (BT) identified as a teacher in their first three years of teaching (Year 1, Year 2, Year 3), or Collaborating Teacher (CT) identified as a teacher that is working with an MCT but is not considered a BT.

PDSA Cycle 1 Data Collection

Quantitative data in the form of survey questionnaire responses using the Teacher's Sense of Self Efficacy Scale (TSES) was the first piece of data the researcher collected. A question was to be added to the TSES about likelihood of remaining in the teaching profession in three years and in five years on the post-survey. Additional information about the TSES Scale is provided in the Instrumentation section in this chapter. The scale has already been assigned numerical values 1-9 that correlate with the terms "How much can you do?" nothing (1), some influence (5), and a great deal (9). Survey response data was entered into SPSS to assign numeric representation of teachers' sense of self efficacy. Descriptive statistics are numbers that summarize and help researchers make good sense of group data. Descriptive statistics was used to display the results of each construct in the Likert-type TSES Survey and analyzed to establish the self-efficacy of the purposeful sample. The researcher sorted the survey responses by the demographic categories (1st year BT in Program, 2nd Year BT in Program, 1st Year CT in Program, 2nd Year CT in Program). The researcher compiled the data by the three subscales (Efficacy in Student Engagement, Efficacy in Instructional Strategies, Efficacy in Classroom Management). The researcher then examined category averages by item and element to identify percent positive and central tendencies; bar graphs were created to present a visual representation of the data.

PDSA Cycle 1 Data Analysis

Descriptive statistics were used to share results and identify the collective efficacy by the three categories. Furthermore, the researcher planned to utilize the data in regression analysis to examine the impact of the MCT program on BTs self-efficacy on multiple variables. These variables included self-efficacy in student engagement, instructional strategies, and classroom management. Survey questions 1, 2, 4, 6, 9, 12, 14, and 22 were aligned to student engagement. Survey questions 7,10,11,17,18,20,23, and 24 were aligned to self-efficacy in instructional strategies. Survey questions 3, 5, 8, 13, 15, 16, 19, and 21 were aligned to classroom management self-efficacy. Each category range could yield scores ranging from 8 to 72. Since all quantitative data analysis was conducted using the SPSS, initial data analysis included frequencies, percentages, means, and standard deviations to summarize the overall results.

To reduce the number of items for group comparisons, the researcher planned to conduct an exploratory factor analysis. Analysis of variance (ANOVA) was to be conducted to compare responses based on level of experience in the program (year 1 or 2), grade level and subject area. A factorial ANOVA was used to analyze the three self-efficacy variables explored on the TSES survey (student engagement, instruction, classroom management).

PDSA Cycle 1 Act

The researcher assembled a meeting to share the data from Cycle 1 and sought input from stakeholder representatives thus creating an Expert Panel. This panel included the following participants: A representative from Human Resources or the Director of Educator Effectiveness (DEEL), two Multi-Classroom Teachers, a Lead Mentor, and a Principal that hosted an MCT. The researcher conducted a Cycle of Inquiry Process to share the data with the group. The researcher collected stakeholder perspectives in terms of their beliefs around self-efficacy, co-

teaching and the MCT program and sought feedback as to their interpretation of the initial data analysis. These comments and field notes were included in the planning phase for PDSA Cycle 2. Based on the analysis of data collected from the TSES scales, the team discussed contributed factors and results. Based on this feedback, the researcher and team developed an improvement strategy to focus on building efficacy in the identified area for BTs (student engagement, instruction, classroom management).

PDSA Cycle 2

The purpose of the PDSA Cycle 2 was to implement the improvement strategy developed in PDSA Cycle 1 as a small-scale proof of concept in at least 2 MCT program settings and to monitor results using observations and field notes. The researcher planned to utilize the results collected from this cycle to develop interview questions with the intent of interviewing BTs and MCTs about the impact of the MCT program on their self-efficacy and decision to continue teaching or not. PDSA Cycle 2 was aligned to Research Question 2.

PDSA Cycle 2 Plan

In PDSA Cycle 2, field notes from the stakeholder group from PDSA Cycle 1, along with initial baseline TSES data was utilized to help plan for Cycle 2. The researcher met with the Expert panel listed in PDSA Cycle 1 at the end of January 2020. The purpose of this planning meeting was to discuss the improvement strategy created in PDSA Cycle 1 and plan the small-scale proof of concept implementation. The researcher and Expert Panel sought to create an implementation plan for this improvement strategy and implement the strategy in at least two MCT settings for at least four months. After the implementation of the improvement strategy, the researcher planned to conduct 1-1 interviews with the BTs who participated in the small-scale

study to capture their reflections, study the impact of the strategy on their own self-efficacy, and inquire about their likelihood of remaining in the profession.

PDSA Cycle 2 Timeline

PDSA Cycle 2 was proposed to begin at the end of January 2020 (see Figure 2), after the stakeholder meeting from PDSA Cycle 1. The researcher planned to facilitate a meeting with the expert panel at the end of January to discuss the results from Cycle 1 including the weakest area(s) identified by the BTs self-efficacy results. The Expert Panel was to study the weakest areas of TSES identified and develop an improvement strategy to be implemented in two MCT program settings. The Expert Team planned to develop an Implementation Plan and necessary professional development, including a timeline for implementation in the small-scale proof of concept. The researcher planned to conduct monthly meetings with the two MCTs implementing the improvement strategy beginning in February 2020 through May 2020. Field notes, observations, reflections, and discussions were to be recorded. In May 2020, the researcher planned to meet with the Expert Panel again and share all preliminary findings, observations, reflections and seek input from the group to determine additional questions for 1-1 Interview Protocol for the BT interviews. In June 2020, prior to teachers leaving for summer break, the researcher planned to conduct 1-1 interviews with the four BTs who participated in the small-scale proof of concept study. Finally, the researcher planned to analyze the interview data during the summer of 2020.

PDSA Cycle 2 Sampling

The small-scale proof of concept employed a purposeful sampling to include at least two MCTs and their respective BTs, which included approximately four BTs. The Expert Panel group,

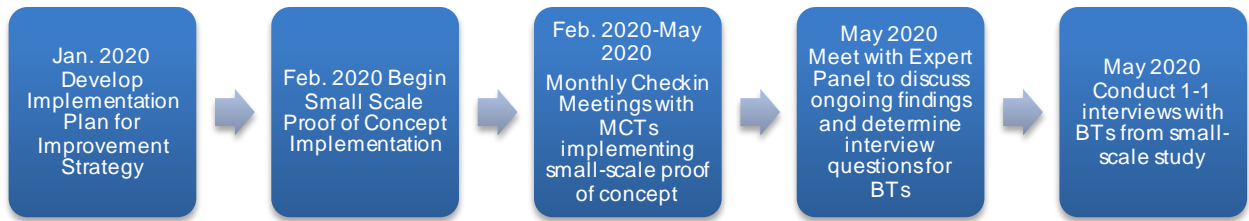


Figure 2. PDSA Cycle 2 timeline.

referred to in this cycle was comprised of a representative from Human Resources and/or Director of Educator Effectiveness (DEEL), two Multi-Classroom Teachers, a Lead Mentor, and a Principal that hosted an MCT. The 1-1 interviews included purposeful sampling of the BTs whom participated in the small-scale proof of concept.

PDSA Cycle 2 Instrumentation

In this cycle, the researcher planned to conduct one-to-one interviews to collect qualitative data. One-on-one interview protocol questions sought to explore the beginning teacher experience with the MCT model as well as how this experience impacted teacher retention (see Appendix C). Demographic information was collected to help the researcher with categorizing information in NVivo software based on years of experience in the program and role (MCT or BT). Interview question 1 was designed to uncover the reason for the interviewee's participation in the program. Interview questions 2-5 were designed to provide feedback on the MCT program and gain a better understanding of their experiences. Question 6, "Where do you see yourself in the next 3 years? 5 years?" was designed to provide feedback to the researcher about the likelihood the candidate will remain teaching, which is aligned to research questions 4 and 5 (How does the MCT program contribute to BT/MCT retention?). Interview question 7 was designed to provide more information about how teachers self-efficacy was impacted through participation in the MCT program, supporting research questions 2 and 3.

Interview questions were reviewed by nonparticipants with specific knowledge in beginning teacher programs and teacher retention. Based on feedback, adjustments to the questions were made before the interview questions would be field tested for validity and additional feedback on the overall structure of the interview and specific feedback on the questions. To ensure data reliability, interviews were to be audio recorded, transcripts created

using NVivo transcription technology, and stored as encrypted, password-protected files to protect confidentiality.

PDSA Cycle 2 Procedures

The researcher and expert team sought to develop an implementation timeline and plan for the small-scale proof of concept improvement strategy. The researcher planned to develop any monitoring protocols and resources that may be necessary for implementation to occur. The MCTs implementing the small-scale proof of concept would receive any necessary training and professional development needed prior to implementing the strategy. The researcher planned to conduct monthly meetings with the 2 MCTs implementing the strategy to discuss progress, barriers, observations and determine if any changes were needed. Field notes were to be collected to capture the information from these monthly meetings. Once the strategy was implemented during the spring of 2020 (approximately a 4-5-month period), the researcher planned to reconvene the Expert Panel to discuss preliminary findings and to seek input from group and to field test the 1-1 Interview Protocol questions (see Appendix C).

In addition to collecting and analyzing quantitative data, the research design also called for qualitative data collection in the form of one-on-one interviews. Through the use of descriptive statistical analysis of the quantitative data, the researcher utilized the structured interview protocol template to provide context and understanding of experiences that quantitative data alone would not illuminate. Inductive analysis is the general process of organizing and characterizing qualitative data (Mertler, 2019). Interviews were to be recorded and uploaded into the NVivo software to assist the researcher in transcribing and codifying the responses. The researcher analyzed the interview responses to uncover any themes or relationships and

categorized information to create codes. Data was assembled by category, and the researcher conducted a preliminary analysis.

PDSA Cycle 2 Data Collection

The researcher planned to utilize a small-scale proof of concept in one or two MCT Program settings specifically focused on increasing teacher self-efficacy in the identified weakest area. After the implementation of the improvement strategy, the BTs involved in the improvement strategy would be interviewed by the researcher to determine the impact of the strategy and the MCT program on their self-efficacy. Through the use of descriptive statistical analysis of the quantitative data, the researcher planned to utilize the structured interview protocol template to provide context and understanding of experiences that quantitative data alone would not illuminate. During PDSA Cycle 3 (which was planned for May 2020), all BTs who participated in the MCT program including the BTs who participated in the small-scale improvement strategy were going to be administered the TSES again as a post-test comparison to determine if the improvement strategy had an impact on the identified weak category of teacher self-efficacy.

PDSA Cycle 2 Data Analysis

Inductive analysis is the general process of organizing and characterizing qualitative data (Mertler, 2019). Interviews were to be recorded and uploaded into the NVivo software to assist the researchers in transcribing and codifying the responses. The researcher analyzed the interview responses to uncover any themes or relationships and categorize information to create codes. Data were assembled by category, and the researcher conducted a preliminary analysis. The interview data was transcribed and coded to uncover any themes or relationships that were used to illuminate the findings from the quantitative data.

PDSA Cycle 2 Act

The researcher planned to meet with the Expert Panel prior to May 2020 to discuss all findings from the interviews and determine if any additional information would be helpful to include on the TSES prior to the post-test TSES administration planned for May 2020.

PDSA Cycle 3

The purpose of PDSA Cycle 3 was to administer the TSES to all BTs who participated in the MCT program during the 2019-2020 school year to analyze and compare BT self-efficacy before and after participating in the MCT program. The self-efficacy results from the BTs who participated in the self-efficacy improvement strategy would be isolated to determine if there was a significant difference in the BTs self-efficacy that participated in the small-scale study compared to all of the BTs who participated in the MCT program. PDSA Cycle 3 was aligned to research questions 1 and 2 and sought to determine the extent of self-efficacy change in BTs as a result of the MCT program.

PDSA Cycle 3 Plan

The researcher planned to re-administer the TSES to all BTs who participated in the MCT program to determine the BTs change in self-efficacy after participating in the MCT program during the 2019-2020 school year.

PDSA Cycle 3 Timeline

The researcher planned to administer the TSES via Google Survey as administered in Cycle 1 to all MCTs and BTs by the end of May 2020 (see Figure 3). The researcher planned to analyze the results of the TSES in June 2020, especially the BTs involved in the improvement strategy. Next, the researcher planned to facilitate an expert panel meeting at the beginning of August to share

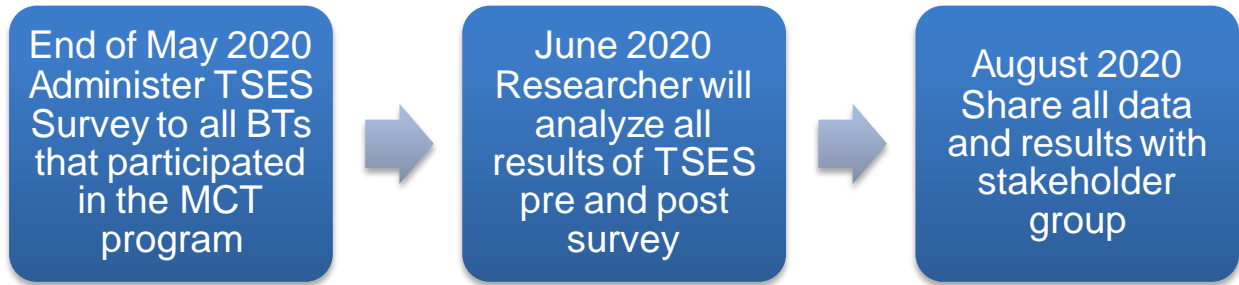


Figure 3. PDSA Cycle 3 timeline.

data, findings and any themes that emerged in the research as well as discuss possible future implications.

PDSA Cycle 3 Sampling

This purposeful sample would represent 36-46 Co-teachers, which were teachers in their first or second year of co-teaching with an MCT. All of these teachers were employed by Pitt County Schools during the time of this study

PDSA Cycle 3 Instrumentation

The researcher planned to use the TSES instrument in PDSA Cycle 3 as a post-test comparison to the TSES survey administered in Cycle 1 (see Appendix B). The TSES is used to evaluate the impact of professional development experiences designed to influence teachers' beliefs in their abilities and their subsequent behaviors in the classroom; therefore, this instrument correlated with the purpose of this research in determining if the impact of the MCT model influences teacher's efficacy.

PDSA Cycle 3 Procedures

After appropriate permissions and approvals were obtained such as informed consent, an electronic version of the Teachers' Sense of Efficacy Scale (long form) would be sent to each participant via Google Form, since the district utilizes Google Apps for Education. Online survey collection methods can result in higher response rates, they usually involve less time, effort and cost than alternative surveys (Glasow, 2005; Zohrabi, 2013). A link to the survey would be included in the letter of invitation that would describe a brief explanation of the project, assurance of confidentiality, and a statement of informed consent. The survey would not collect respondents email addresses or any identifying demographic information other than two background questions at the beginning designed to provide guidance during the data analysis

phase. Those questions include: Please indicate your role/position: Beginning Teacher (BT) identified as a teacher in their first three years of teaching (Year 1, Year 2, Year 3), or Collaborating Teacher (CT) identified as a teacher that is working with an MCT but is not considered a BT. Additional information may be collected in the survey based on feedback from Expert Panel. Demographic data that were to be added to this post-test survey included: did you participate in the small-scale study?

PDSA Cycle 3 Data Collection

Survey response data was to be entered into SPSS to assign numeric representation of teachers' sense of self efficacy. Descriptive statistics are numbers that summarize and help researchers make good sense of group data. Descriptive statistics was planned to be used on the results of each construct in the Likert-type TSES Survey and analyzed to establish the self-efficacy of the purposeful sample. The researcher was to sort the survey responses by the demographic categories (1st year BT in Program, 2nd Year BT in Program, 1st Year CT in Program, 2nd Year CT in Program). The researcher planned to organize and display the data by the three subscales (Efficacy in Student Engagement, Efficacy in Instructional Strategies, Efficacy in Classroom Management). The researcher planned to examine category averages by item and element to identify percent positive and central tendencies; bar graphs would be used to present a visual representation of the data.

PDSA Cycle 3 Data Analysis

Descriptive statistics was to be used to share results and identify the collective efficacy by the three categories. Since all quantitative data analysis was planned to be conducted using the SPSS, initial data analysis would include frequencies, percentages, means, and standard deviations to summarize the overall results. To reduce the number of items for group

comparisons, the researcher planned to conduct an exploratory factor analysis. Analysis of variance (ANOVA) was planned to be conducted to compare responses in the identified category of self-efficacy using the pre-and post TSES results.

Population

The target system for this research was a rural district in eastern North Carolina, Pitt County Schools that served approximately 24,000 students. Greenville is the county seat and home of East Carolina University (ECU), the third largest university in North Carolina, comprised of 12 colleges and schools including the Brody School of Medicine, the School of Dental Medicine, the College of Business, and the College of Education. Vidant Health Systems is headquartered in Greenville, with over 6,000 employees in its region. Despite its role as the center of education, commerce, employment, and health care in eastern North Carolina, Pitt County posts an estimated poverty rate of 24%.

PCS operates 39 schools of varying grade ranges located throughout the county, in which an average of 59% of students qualified for free or reduced-price school meals in 2014-15. The teacher turnover rate in Pitt County Schools exceeded the state average from 2012-2016. To address these challenges, PCS deployed the R3 Human Capital Management System in 2013 to the extent possible with available resources. The R3 Program was designed to (1) Recruit, retain and reward effective and highly effective teachers working in high-need schools; (2) Increase student growth and academic achievement in targeted schools; and (3) Reduce the number of high-need schools labeled "Low Performing." This grant was funded by the Federal Government and now includes 2 grants totaling 21 million dollars. This R3 program was designed to not only retain effective, experienced teachers, but also to work to mitigate the impact of the large number of inexperienced teachers hired because of turnover.

In the fall of 2018, Pitt County Schools launched the MCT position, which was the last teacher leadership positions under the R3 Framework. MCTs are defined as master teachers, as demonstrated by both classroom observation and student performance data, who co-teach across multiple classrooms with other teachers and apprentice them in the art and science of what highly effective instruction looks like (Feller, 2016). MCTs were requested by the schools through a process that began in the Spring of 2018. School Improvement Teams (SIT) requested an MCT position by identifying the need and submitting a proposal. MCT positions were allotted by the District Office, and finally identified by a team consisting of the Co-Teachers and the school principal. Pitt County Schools allotted 15 MCT positions beginning in the 2018-2019 school year. The MCT position requires a three-year commitment, so future MCT positions would not be available until the end of the three years. MCTs received a compensation equal to 15% greater than FTs (approximately 30% above what a Professional Teacher makes).

The participants for this study included 15 Multi-classroom Teachers (MCTs) and 46 Co-teachers (36 from 2018-19) for the 14 identified schools that implemented the MCT Program. The pool of potential participants was divided into groups (1st and 2nd year BTs and 1st and 2nd year Co-Ts).

Ethical Considerations and Informed Consent

The Common Rule (Protection of Human Subjects, 2018) lists criteria for IRB approval of a research plan that are directly related to the three Belmont principles; respect for persons, beneficence, and justice. Respect for persons include safeguards put in place to protect prospective subjects. Beneficence refers to the anticipated benefits to the subject in relation to the reasonable risks associated. Justice includes that selection of subjects in this study are equitable.

Informed consent was sought and documented in accordance with, and to the extent required by 46.116. The HHS regulations (Protection of Human Subjects, 2018) require that the prospective subject be provided with information that a reasonable person would want in order to make an informed decision. Key information provided in the Informed Consent included: the purpose of the research, description of procedures, disclosure of any risks, and that participation is voluntary and subjects are free to withdraw at any time. The informed consent included a statement to subjects that participation in this study was completely voluntary and all information will be kept confidential and no data will be released or used with your identification attached.

Adequate provisions to protect the privacy of subjects as well as to maintain confidentiality of the data were addressed in the application for Institutional Review Board (IRB) approval. Prior to submitting the study application for IRB approval, the researcher completed Collaborative Institutional Training Initiative (CITI) modules, required by East Carolina University.

Ethical concerns related to the recruitment of participants in the study were addressed by disclosing information about the background of the researcher including that the study will be conducted in the researcher's school district as well as one site in the school in which the researcher is the Principal. All participants in the study were recruited based upon their participation in the MCT model in either the role of beginning teacher or Multi-Classroom Teacher. Participants were informed that participation in the study was voluntary and there was no penalty for not taking part in this research study. Participant data was kept confidential and identifiable private information was removed to the extent possible.

General Procedures

The researcher obtained permission from the superintendent of the target district to conduct the proposed study within the school system. After Institutional Review Board (IRB) approval, the researcher sent a letter of introduction via email to the building-level administrators at the fourteen schools in the target district that were implementing the MCT model. Findings are represented in tables, graphs, and figures to support interpretation of the results. The Publication Manual of the American Psychological Association [APA] (2010) suggest results come from reporting extensive description, statistical significance testing, confidence intervals, and effect sizes.

Qualitative data analysis and interpretation is complex and multiple interpretations may occur simultaneously (Leedy & Ormrod, 2013; Mertler, 2019). The researcher planned to look for information in the data that contradicted any emerging trends or patterns and include this information in the results. Leedy and Ormrod (2013) suggest researchers should do as much as possible to minimize biases, prior expectations, and personal judgements since they are an instrument in the qualitative data collection and analysis process.

In this study the researcher planned to present the quantitative statistical results from the survey results comparisons from Cycle 1 to Cycle 3 in a side-by-side comparison. Then the researcher planned to overlap these results with the qualitative findings from the teacher interviews to display data into a single visual. The discussion section of the findings would include a report comparing the results from the two databases and would note convergence or divergence between the two information sources.

Threats to Validity

External Validity

Threats to external validity arise when the researcher generalizes beyond the sample data to other groups, settings, or past and future situations (Creswell, 2014). In this study, potential threats included the specific population and target group tested. The MCT program was a new model for teacher support in Pitt County and the sample population in this study included teachers in Pitt County so results can only be generalized to this population. Due to the characteristics of the narrow setting of participants the researcher cannot generalize to individuals in other settings. Another possible threat to external validity included the researchers' role and position which was addressed in the role of the researcher section in Chapter 3. Several techniques to ensure reliability were employed in this study to address these threats. The researcher provided a detailed focus of the study, including researcher role, basis for selection of participants in the study, and outlined clear data collection procedures. Validity and reliability were enhanced through the collection of multiple sources of data, both quantitative and qualitative. Triangulation of data through multiple methods of collection and analysis strengthens both internal and external validity (Creswell, 2014). Due to the subjects own individual differences and self-examination of their own self-efficacy, the findings from this research can apply well to some people and poorly to others. The researcher restricts claims about groups to which the results cannot be generalized. Additional experiments with groups with different characteristics would need to be conducted to avoid the threat of treatment selection.

Internal Validity

Internal validity refers to the degree to which the dependent variable measured differences are a direct result of the manipulation of the independent variable, and not some other

variable or influence (Mertler, 2019). Internal threats to validity include experimental procedures, treatments, or experiences of the participants that threaten the researcher's ability to draw correct inferences from the data. In this study, the researcher planned to use data to show that dependent variables measured (self-efficacy) were directly correlated to the independent variable (MCT program participation) and not the result of other factors such as maturity of the teachers, instrument changes in testing, and communication between the groups. Since this study extended over the course of two-years, factors other than the experimental treatment could also influence the results. The researcher included in the demographic data whether the subject is in their first or second year of implementing the MCT program to separate that data and increase reliability.

The researcher employed additional strategies to ensure internal validity to include the following. Data was collected through multiple sources and triangulated to enhance validity. A peer examiner would be selected to check data sources and ongoing consultation would occur with the Leadership Team from Pitt County Schools Department of Educator Effectiveness (DEEL). This collaboration would serve as an additional layer of fact-checking, and ensure participant information and data is accurate and reliable. Clarification of researcher bias is articulated under the heading "Role of the Researcher".

Construct Validity

Creswell (2014) explains that threats to construct validity occur when researchers use inadequate measures of variables and definitions. Potential threats to validity include possible unequal sample sizes of the qualitative data compared to larger sizes on the quantitative side. Additional threats include the use of different variable on the quantitative side versus the qualitative side. In this study, teacher self-efficacy was measured quantitatively using the TSES

survey as well as qualitatively addressed in teacher interview question 7. However, the quantitative survey data represents a larger population compared to the smaller population participating in the interviews. The researcher planned to address these limitations in the discussion of findings and interpretation of results section. The researcher planned to address any divergence in themes by returning to the analysis, collecting additional information to resolve differences, and explore databases.

Role of the Researcher

The researcher conducting this study was an elementary school Principal in Pitt County Schools that has been employed by the district since 2003. The researcher's school, Elmhurst Elementary, was 1 of 14 schools implementing the MCT Program in Pitt County that was included in this study. The researcher was directly involved in hiring the MCT at Elmhurst Elementary to begin the program during the 2018-2019 school year as well as identified the BTs who participated during the first year of implementation. The researcher attended and participated in at least five to six professional development sessions regarding MCT implementation and facilitation prior to and during the 2018-19 school year. The researcher in the study directly supervised the two BTs and MCT at Elmhurst Elementary.

The researcher obtained approval from East Carolina University's Institutional Review Board (IRB) prior to beginning the study as well as approval to conduct research in the participating school district. The researcher completed Collaborative Institutional Training Initiative (CITI) Coursework to understand requirements, ethical principles, and procedures in research with human subjects. Once IRB approval was granted, the researcher was responsible for all data collection, analysis and reporting. Informed consent from all participants in the study

was obtained and disclosed the researcher's role in the study as well as informed all participants of their voluntary participation.

The researcher followed all ethical procedures and guidelines to ensure data was collected, analyzed and interpreted free from researcher biases. The researcher also had a peer reviewer review the methods sections and all instruments prior to implementing them. All data were collected and evaluated equally. The researcher remained neutral and unbiased during this study and ensured all findings were reported accurately and free of any biases.

Summary

This study sought to utilize the Improvement Science Model to determine how the MCT Program addressed teacher self-efficacy and retention using the PDSA Cycles of inquiry with the goal to improve BT self-efficacy and retention. The hypothesis was that beginning teacher self-efficacy would increase as a result of participation in the MCT program. In this study, quantitative data in the form of teacher survey data was used to test the social cognitive theory of self-efficacy that predicted that the MCT program will positively influence the self-efficacy for BTs and MCTs in Pitt County Schools. Qualitative data, in the form of teacher interviews, explored how the MCT program impacted teacher self-efficacy and retention. The reason for collecting both quantitative and qualitative data was to develop a complete understanding of this research problem by converging and comparing both types of data. Descriptive statistical analysis was used to compare findings from the quantitative and qualitative data. Chapter 4 outlines the findings from the proposed study design and provides results to data collection and analysis.

CHAPTER 4: RESULTS

Teacher efficacy refers to a teacher's belief in their ability to guide students to success (Bandura, 1997). Efficacy beliefs of first-year teachers are related to stress and commitment to teaching and satisfaction with support and preparation. According to a study by Hoy and Spero (2005), beginning teachers completing their first year of teaching who had a high sense of teacher efficacy found greater satisfaction in teaching, had a more positive reaction to teaching, and experienced less stress.

The problem of practice addressed in this study was low teacher self-efficacy and higher teacher turnover rates for beginning teachers. In an order to reduce teacher turnover rates for beginning teachers, this study sought to increase beginning teacher self-efficacy. The purpose of this study was to determine how the MCT Program impacted BT self-efficacy and retention and then utilize the Model for Improvement (Langley et al., 2009) to incorporate the Plan-Do-Study-Act (PDSA) Cycles to improve beginning teacher self-efficacy and retention. In this study, the researcher collected and analyzed qualitative data and quantitative data. The qualitative data, in the form of teacher interviews, explored how the MCT program impacted teacher self-efficacy and retention. The quantitative data, in the form of Teacher Self-Efficacy Scale (TSES) survey responses from BTs and MCTs, will explore and compare BT self-efficacy. The following original study questions were as follows; however, the Coronavirus Pandemic caused a shift in the study design, which will be elaborated in the sections that follow.

1. To what extent does the self-efficacy of beginning teachers change as a result of the MCT Program?

2. To what extent does the self-efficacy of beginning teachers change as a result of the small-scale improvement strategy?
3. How does the MCT program contribute to BT retention?

Participants

Pitt County Schools allotted 15 MCT positions beginning in the 2018-2019 school year (see Table 3). During the 2019-2020 school year, Pitt County continued to fund 15 MCT positions and schools and principals helped identify the Co-Teachers (Co-T's) which included BTs who would be working with these MCTs. The 15 MCTs represented 14 different schools in the district and worked with 36 identified Co-Ts during the 2019-2020 school year. Of the 36 Co-Teachers, 20 of those have been identified as beginning teachers (in the first three years of teaching). The participants in this study were 20 Beginning Teachers (BTs) that were co-teaching with an MCT during the 2019-2020 school year. Twelve of these BTs identified as grade K-5 teachers, while eight BTs represented grades 6-12 teachers. BTs in the study work with an MCT in one subject area either reading or math, and of these 20 BTs, 12 concentrated on reading and eight concentrated on math. Of the BTs that participated in the study, 55% of the BTs who participated in the study were BT-1s or first-year teachers, 40% were BT-2s or second-year teachers, and 5% were BT-3s in their third year.

The Science of Improvement

Most improvement efforts require a common approach or framework to impact effective changes. The Model for Improvement consists of three fundamental questions that drive the improvements and the Plan-Do-Study-Act (PDSA) Cycle (Langley et al., 2009). According to Langley et al. (2009), those three fundamental questions include: (1) What are we trying to accomplish? (2) How will we know that a change is an improvement? (3) What changes

Table 3

20 Pitt County Schools Beginning Teacher Participants

Grade Range	Number of BTs	BT 1s (11)	BT 2s (8)	BT 3s (1)	Reading Concentration	Math Concentration
K-5	12	8	5	0	9	3
6-12	8	3	3	1	3	5

Note. BT 1s refers to teachers in their first year of teaching, BT 2s refers to 2nd year of teaching.

can we make that will result in improvement? These three questions were at the core of this research study and the PDSA Cycles served as the framework for the trial-and-learning methodology. The PDSA Cycle begins with a plan and ends with an action based on the results of the study.

The problem of practice addressed in this study was low teacher self-efficacy and higher teacher turnover for beginning teachers. The study investigated how the MCT Program addressed these problems. The implementation of a PDSA Cycle combined with specific strategies to improve beginning teacher self-efficacy and retention was the foundation upon which this study was constructed. The PDSA Cycle was utilized in three Plan-Do-Study-Act phases.

Plan-Do-Study-Act

PDSA Cycle 1 Findings

The purpose of the first PDSA Cycle was to administer the teacher self-efficacy scales to BTs participating in the MCT program to obtain baseline teacher self-efficacy scores as a pre-test measure. The primary goal of PDSA Cycle 1 was to analyze the survey data to identify the overall weakest category of self-efficacy (student engagement, instructional strategies, classroom management) reported collectively by the BTs.

The original timeline proposed to administer the survey to BTs was at the beginning of the 2019-2020 school year; however, due to a later defense proposal date, the IRB approval process, as well as the district research approval process, the researcher administered the survey during the first 2 weeks in December 2019. The researcher met with Dr. Seth Brown, the Director of Educator Support and Leadership Development, on November 13th, to discuss any changes to the MCT Program including some BTs who had already moved or changed since the

summer information. The researcher obtained an updated list of the BTs participating in the MCT program and had to eliminate any Co-Teachers that were participating but were not considered beginning teachers. Dr. Brown advised the researcher to wait until right after Thanksgiving Break to administer the survey to BTs since the district had just added a new Drive Climate Survey that had to be administered to all teachers in the district by November 22, 2020. The researcher converted the Teacher Self-Efficacy Survey (TSES) into a Google Form Survey as outlined in the IRB approval process. The survey instrument included the Informed Consent to participate so that once a participant agreed the survey link took them to the demographic background and the survey. At the advice of Dr. Seth Brown, the researcher sent the MCTs an email explaining the purpose of this research and asking them to encourage the BTs they work with to participate in the survey. The researcher sent the BTs an email explaining the research, along with the Informed Consent to Participate that linked to the survey on November 29, 2019. The TSES were administered over two weeks with a completion date of all surveys returned by December 13, 2019.

Originally the sample size included a possible 35-40 Co-Ts participating in the MCT Program. Not all Co-Ts are BTs; however, close to 60% of these Co-Ts were identified as BTs. Due to some teacher attrition and changes to BTs participation based on principal discretion at the individual schools, the updated list provided to the researcher included 20 BTs who were eligible to participate. Of those 20 BTs, the researcher had already identified four BTs in two MCT settings that are part of the small-scale improvement study in the spring. The researcher discussed with Dr. Seth Brown methods for separating the survey results to isolate the four BTs collective responses to the survey both pre (December 2019) and post (May 2020) to determine if the rate of improvement varied in the small-scale study BTs compared to all BTs

in the MCT program. The researcher made a copy of the TSES Google Survey and sent the copy to the 4 BTs in the 2 MCT settings, which were Ayden Grifton High School and Elmhurst Elementary).

The TSES was sent to 20 BTs with 13 responding. The researcher expected a lower response rate due to the survey's administration being so near to the holiday break. Of the 13 BT participants, 85% identified themselves as K-5 teachers, and 15% identified as 6-12 teachers. Of these participants, 77% were concentrating on reading instruction with an MCT, while 23% were concentrating on math instruction with an MCT. Of the 13 participants that responded to the survey, five were first-year BTs, seven were second-year BTs, and one BT was a BT-3. The average Self-Efficacy (SE) score for BT-1s was 158, BT-2s was 176, and the BT-3 SE score was 189. So, the BTs rated their self-efficacy higher on average in relation to their years of experience.

The TSES 24-item survey included eight items aligned to three different domains of teacher self-efficacy, which included: Efficacy in Student Engagement, Efficacy in Instructional Strategies, and Efficacy in Classroom Management (see Appendix B). The scale was assigned numerical values 1-9 that correlate with nothing (1), some influence (5), and a great deal (9). Each of the three category ranges could yield scores ranging from 8 to 72 with overall efficacy scores ranging from a minimum score of 24 to 216.

Pre-survey data of the 13 reliable scores yielded a 137-minimum score to a 203-maximum score with a mean score of 166 and a standard deviation of 19.08 (see Table 4). The overall average TSES score on the BT pre-survey administered in December 2019 was a score of 169.8 out of 216 possible. Each category range had a maximum score of 72 and the self-efficacy category averages were as follows: Efficacy in Student Engagement-56.1; Efficacy in

Table 4

Descriptive Statistics: Mean Scores on BT TSES Survey

SES Survey	No. Scores	Minimum	Maximum	Mean	Standard Deviation
Pre (Dec.)	13	137	203	166	19.08
Post *Unable to complete due to Coronavirus					

Instructional Strategies-56.7; Efficacy in Classroom Management-57. The weakest category of self-efficacy reported on the TSES pre-survey was student engagement (see Figure 4). The control group of four BTs pre-survey response average self-efficacy score in the student engagement category was a 56.8 (see Figure 4).

The results of the category averages concluded that BTs who were working with an MCT rated themselves with an average score of 7.01 in student engagement, 7.08 in instructional strategies, and their average score they rated themselves in classroom management was 7.12. The category of SE that was rated the highest was in classroom management.

The researcher assembled the first meeting with the Expert Panel, a pseudonym created to protect their identity, during the Teacher Workday on January 3, 2020. The Expert Panel included the following participants: MCT at Elmhurst, MCT at Ayden-Grifton High School, Lead Mentor, Principal at Ayden-Grifton High School. The researcher presented all findings from PDSA Cycle 1 and gathered input and feedback from the Expert Panel and set up a meeting with the 2 MCTs to create an improvement strategy in the area of increasing BT self-efficacy in Student Engagement.

During the first monthly meeting with the MCTs to create the strategy for the small-scale study in February 2020, the researcher and MCTs examined the data more closely to determine how to narrow the focus of the strategy related to the BTs responses on each question related to student engagement. The scores in two of the three categories were within a point of each other. The Long Form Version of the TSES had some overlapping questions. Overall, the analysis of the initial survey data revealed the lowest category of self-efficacy in student engagement with an average response on the 9-point scale of a 7.01 average. This was a small margin in the data

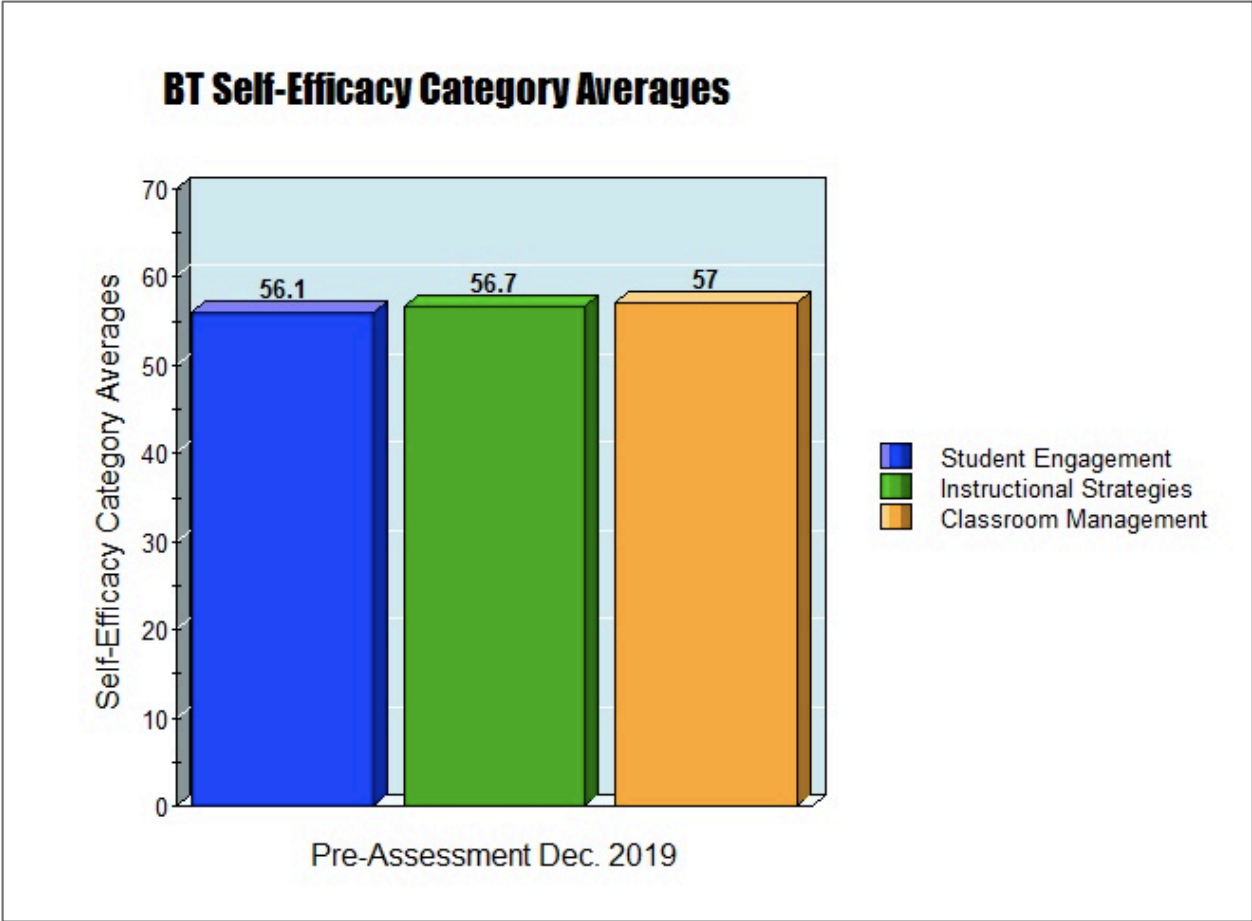


Figure 4. Beginning teachers average self-efficacy score by category from December 2019.

from the category of self-efficacy in Instructional strategies with an average response of 7.08 points.

The team analyzed the responses to each of the eight questions under both of these self-efficacy categories and found that the question with the lowest average score fell under the category of instructional strategies. That question the BTs rated themselves the lowest in was, “how much can you do to adjust your lessons to the proper level for individual students?” Interestingly, when the researcher isolated and compared the small-scale study groups response (experimental group) those BTs rated themselves the lowest on a very similar question under the category of instructional strategies. The experimental groups weakest area of self-efficacy identified in this pre-assessment was in the question, “how well can you provide appropriate challenges for very capable students.” Since both questions were so similar in the ability to differentiate and adjust lessons for individual students, the team decided to focus the work on providing support in the area of differentiation with the BTs in the small-scale study.

As a team, we discussed how high the BTs in the MCT program rated their own self-efficacy in all areas and both MCTs felt like they should focus their work through the lens of self-reflection. The MCTs that would be implementing the improvement strategy decided to focus on raising their BTs self-efficacy in differentiating instruction (instructional strategy) by coaching their BTs using a reflective framework to help raise their own self-awareness. The team began discussing what this improvement strategy would look like and came up with a strategy to help the BTs use their current lesson plan framework of Learning-Focused Lesson Planning and train the BTs how to create and develop the Acceleration & Previewing plan. The MCTs felt that coaching their BTs through the process of planning how to preview content and accelerate learning for those different levels of learners would help build their self-efficacy in this area. The

team also discussed the importance of continuing to focus on coaching through the lens of reflection so that the BTs learned to self-assess and become more reflective. The next step was to meet again and plan the actual action steps and create the timeline for implementation of this small-scale improvement strategy.

In conclusion, the findings from this cycle were that BT self-efficacy revealed high scores, with the highest area of self-efficacy reported in classroom management with a category average of 57 points (see Figure 4). Teachers' self-efficacy in classroom management is aligned with teachers' professional competence and a key predictor of effective classroom management strategies (Kunter & Baumert, 2007; Zee & Koomen, 2016). In a study in the United States (Wolters & Daugherty, 2007; Woolfolk et al., 1990) beginning teachers that had up to five years' experience reported lower levels of self-efficacy in classroom management than more experienced teachers with ten or more years' experience. Research suggests that self-efficacy for classroom management may be vulnerable early in the teaching profession and improve as teachers accumulate mastery experiences (Woolfolk et al., 1990; Zee & Koomen, 2016). Therefore, the findings in Cycle 1 contradicted the research that beginning teachers feel less confident in their classroom management skills.

PDSA Cycle 2

The original objective during the second cycle of the PDSA was to create an improvement strategy in the weakest area of self-efficacy, which was identified in PDSA Cycle 1 as student engagement. The researcher and the 2 MCTs in PDSA Cycle 2 were to meet once/month beginning in January 2020 to plan and implement the student engagement improvement strategy. The small-scale proof of concept was originally proposed over a 5-month period; however, the timeline for beginning the research had to be altered due to awaiting

approvals in fall 2019. Meeting minutes, observations, discussions, and reflections were to be recorded by the researcher for each monthly meeting with the MCTs. As the researcher was about to begin PDSA Cycle 2 improvement strategy with the small-scale study, the nation was dealing with a global pandemic that was approaching the United States and altered the lives of everyone.

Coronavirus Pandemic

On Friday, March 13, 2020 schools in North Carolina were bracing for the approach of a global pandemic as a result of the outbreak of the Coronavirus, or COVID-19. Schools across the nation were ordered to be closed to prevent the spread of this deadly virus and North Carolina schools were closed for all students and faculty beginning March 16th. During those first weeks following the school closure school administrators and teachers shifted their focus to ensuring students had access to meals and access to appropriate learning materials. Beginning on March 30, teachers began to offer online supplemental instruction. When online access was impossible, comparable paper learning packets were created by teachers and schools for students.

During this Pandemic, schools were tasked with providing whatever technology devices they could spare to make them available to families that needed a device. Exceptional Children's staff, school psychologists, school counselors, and Academically and Intellectually Gifted staff all worked to provide content and additional support to students with disabilities. This period from March 30th-May 22nd became Pitt County Schools COVID-19 Remote learning time. Each week, students with online access met with teachers online using various platforms such as Canvas, Google Classroom, and Seesaw. Teachers used Zoom and teleconferencing technology to meet and exchange information virtually with students and parents. Schools became hotspots for wireless connectivity and functioned as a distribution center for meals, devices, and

instructional work packets. IEP meetings, staff meetings, and family communication all became virtual, and the learning curve for teachers, students, and parents with technology and digital learning was as steep as it will ever be.

While schools and districts were doing their best to meet the needs of students and their families, school leaders were also trying to understand how this global pandemic was affecting their social and emotional needs. For everyone in our country, this was a time of sudden loss and all of our normal routines and schedules were completely halted. Life and school were completely changed. From March 16, 2020 through the end of the school year, schools navigated uncharted territory as they attempted to deliver instruction to all students in the most equitable way possible. Educational inequities were exposed as educational leaders faced challenges such as ensuring students had access to curriculum materials and resources. School leaders in our district were also working to provide meals to students that faced food insecurity. As this pandemic disrupted the lives of every person in the world, it also disrupted the progress of this study with the sudden halt of face-to-face instruction and schools closely completely.

Pandemic Causes a Shift in the Study

In PDSA Cycle 1, BT self-efficacy revealed high scores, especially in the area of classroom management. These beginning teacher high self-efficacy scores indicated that their perception was they felt capable to perform classroom management related task; however, research support classroom management is an important concern for beginning teachers (Dicke et al., 2015; Lazarides et al., 2020). This study finding along with the disruption of face-to-face schooling due to the timing of the COVID-19 Pandemic, caused stakeholders to shift the activities and abandon the small-scale proof of concept that was originally proposed as the PDSA Cycle 2 improvement strategy. Based on these data, the stakeholders discussed exploring and

comparing BT self-efficacy ratings in classroom management by having their MCTs rate those BTs efficacy in classroom management. Since the BTs scores were so high in classroom management, the researcher proposed exploring if the MCTs ratings would be similar in comparison. By comparing and analyzing these findings as part of PDSA Cycle 2, the MCTs would then have the opportunity to reflect and rediscover their impact on BT self-efficacy. This shift caused the researcher to revise the timeline for PDSA Cycles 2 and 3 (see Figure 5).

PDSA Cycle 2 (Redesigned)

Research Q. 2 was changed to: How do beginning teachers who participate in the MCT Program rate their teacher self-efficacy compared to how their MCTs rate their teaching efficacy?

With the shift in this study caused by the disruption of schools as a result of the global pandemic, the purpose of PDSA Cycle 2 was to examine the BTs highest area of self-efficacy in classroom management by administering the same eight classroom management self-efficacy questions on the TSES to the MCTs that work with these BTs to examine and compare any findings. During the Coronavirus Pandemic, the researcher was able to administer the TSES classroom management survey questions to the MCTs virtually via Google Forms. The stakeholders, expert panel, and researcher wanted to see how the MCTs rated their prospective BTs efficacy in classroom management and utilize those findings to craft questions during PDSA Cycle 3 interviews to uncover any patterns or trends.

The researcher used the eight self-efficacy questions related to classroom management from the TSES administered in PDSA Cycle 1. The original 24-item questionnaire featured classroom management-related SE questions (numbers 3, 5, 8, 13, 15, 16, 19, and 21). These questions were used to create a modified questionnaire, changing the wording from the original

Shift in the Study

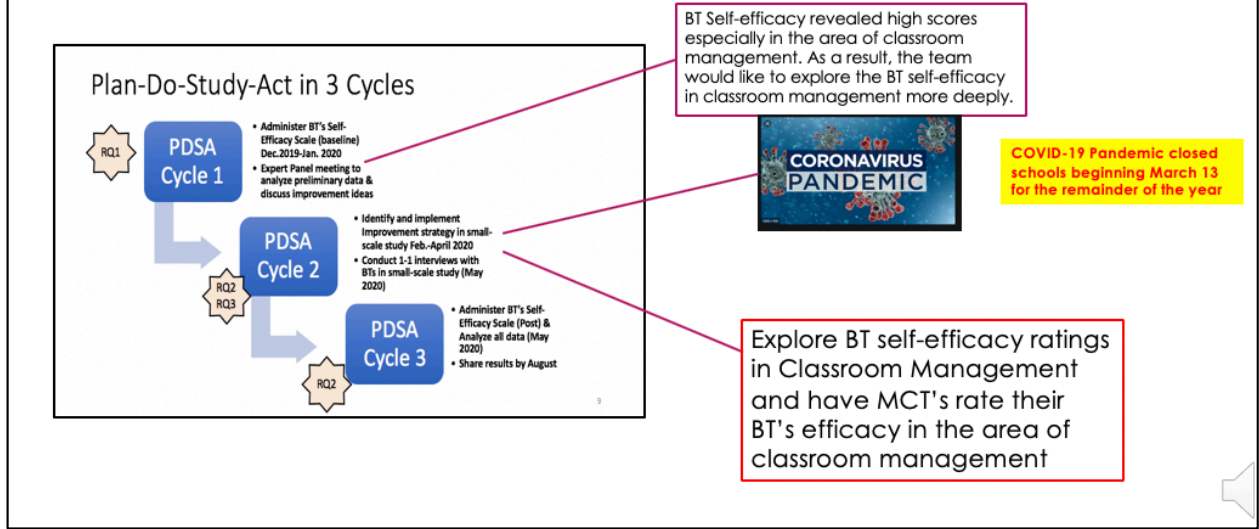


Figure 5. Shift in the study.

questions to the BTs to reflect self-efficacy ratings to teacher efficacy ratings. For example, question 3 on the TSES to BTs read: “How much can you do to control disruptive behavior in the classroom?” and this question was reworded for the MCT survey to, “How much can your Co-Teacher [BT] do to control disruptive behavior in the classroom?” MCTs were directed to complete 1 survey with these eight classroom management questions for each BT that they Co-Teach with.

The surveys were sent to the MCT group by the researcher on June 5, 2020 and responses were collected over 2 weeks via Google Form. The survey questionnaire yielded 20 total responses from nine MCTs rating their two to three BTs who they co-teach with. Of these 20 responses, the researcher was able to identify and compare 10 BTs who participated in the TSES survey in December and whose MCT rated their efficacy in classroom management (see Figure 6).

PDSA Cycle 2 Findings

Findings from the 8-question survey comparison revealed that BTs average Classroom Management SE score was 57.4 compared to the MCTs average Classroom Management efficacy score of 50.2. As predicted the BTs rated themselves higher overall in classroom management than the MCTs rated them. In analyzing each of the eight questions administered on the survey, responses yielded a range of a 1-7-point discrepancy in how the BTs rated themselves compared to the MCTs ratings.

The question that had the highest correlation with only a 1-point discrepancy in how the BTs and MCTs ratings compared (BTs average score 6.7 compared to MCTs rating of 6.6) was question 15, which asked, “How much can you or your BT do to calm a student who is disruptive

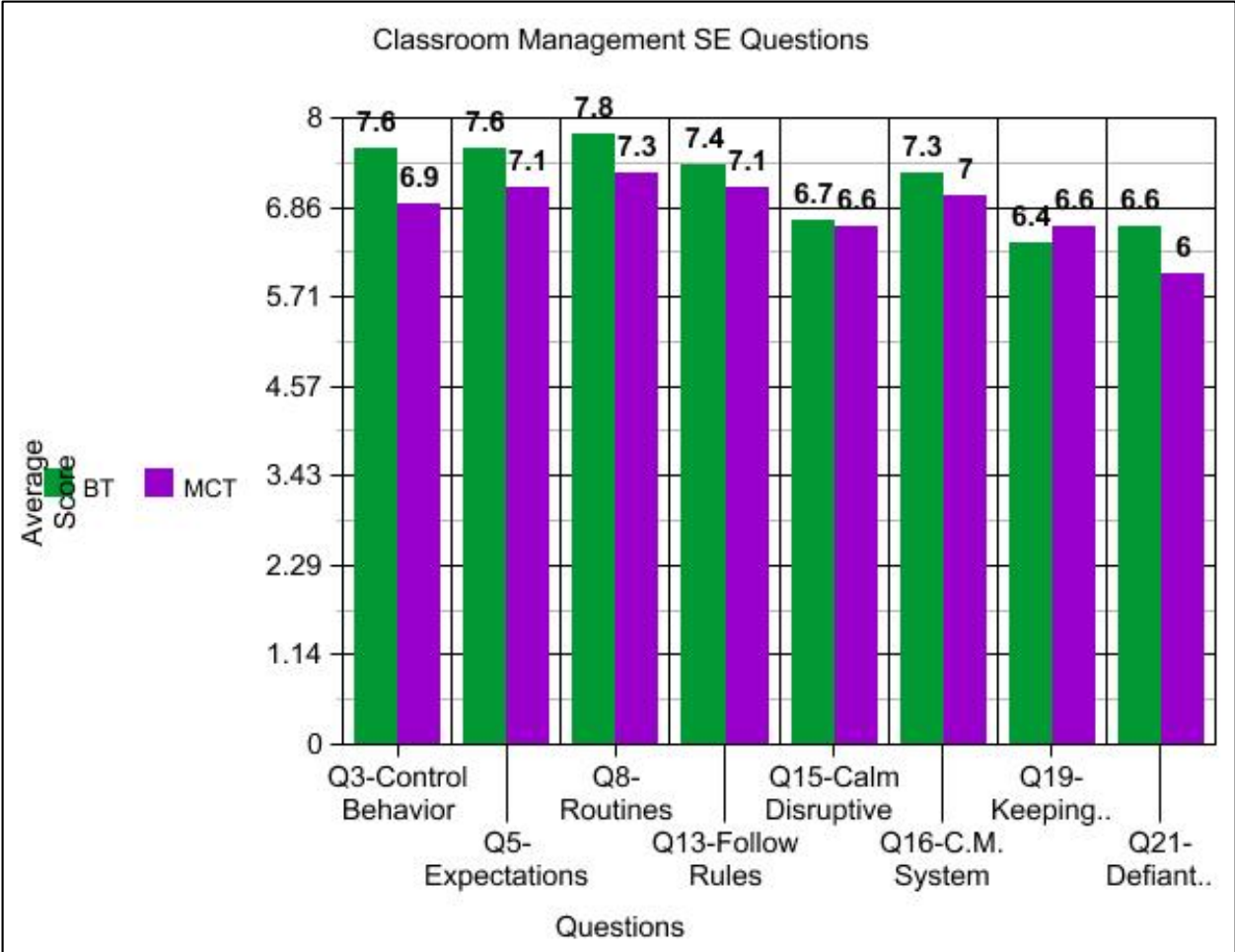


Figure 6. BTs and MCTs Classroom Management SE comparisons per question.

or noisy?” When each of the 10 BT ratings were compared to their MCT rating for question 15, 3 of the BT-MCT comparisons were the same rating, four more comparisons only showed a 1-2-point discrepancy with three BTs in these cases rating themselves lower than the MCT rated them. Out of the 10 BT/MCT comparisons for Q.15, 3 ratings showed a 3-4-point discrepancy in ratings. BT3 rated his/herself a 9 compared to the MCT who rated BT3 a 6. BT4 rated his/herself an 8 compared to the MCT's rating of 4, and BT10 rated his/herself a 4 compared to the MCT higher rating of 7 for that BT. BT3 and BT4 shared the same MCT who rated both BTs significantly lower than the BTs rated themselves. Overall, question 15 had the closest ratings from BTs compared to the MCTs; however, when analyzing each BT/MCT individual comparison there were discrepancies in their ratings with some MCTs rating their BTs higher and vice versa. This particular question illustrates how some BTs have more confidence in their abilities compared to how others that work with them may perceive as well as the opposite, and that some BTs had less confidence in their ability to calm a disruptive student than their MCT believed in them.

One finding in the data revealed a question in which the BTs rated their self-efficacy lower than their respective MCTs rated their ability which was question 19: “How well can you/or your Co-Teacher keep a few problem students from ruining an entire lesson?” The 10 BTs sum rating was 64 compared to the MCTs sum rating of 66 illustrating a 2-point discrepancy with 9 out of the 10 BT/MCTs ratings ranging from 0-2-point discrepancies. The only outlier in question 19 was BT4 who rated his/herself a 7 compared to the MCT rating of a 4. This question supports that the MCTs had more confidence in their BTs ability to keep a few students from ruining a lesson, which somewhat correlates to the question 15 pertaining to BTs ability to calm a disruptive student. This could also conclude that BTs are less aware of their ability to

proactively mitigate certain behaviors from ruining a lesson. The supportive and intensive co-planning that MCTs provide for BTs includes reflective coaching and questions sought to develop thorough lessons that address possible detractors such as student behavior and increase student engagement.

The two questions that showed the highest discrepancy in how the BTs ratings compared to their MCTs ratings were question #3, and question # 21. Question 3: “How much can you/your Co-Teacher do to control disruptive behavior in the classroom?” revealed a 7-point overall discrepancy with the BTs sum rating of 76 or average 7.6 compared to the MCTs sum rating of 69 or 6.9 average score. However, when comparing each of the 10 BT/MCT ratings eight of the 10 ratings were closely or perfectly aligned; meaning the BT and the MCT rated themselves the exact same or within 1-point difference. The 2 outliers’ ratings that skewed this data were BT3 and BT4 again with BT3 rating themselves nine compared to the MCT rating of five and BT4 rating themselves an eight compared to the MCT rating them a four in this question. BT3 and BT4 share this same MCT so this data shows that the BTs working with this MCT perceive their classroom management abilities much higher than the MCT they work with does. Question 21 asked, “How well can you/your Co-Teacher respond to defiant students?” This question yielded a 6-point discrepancy with BTs average rating of 6.6 compared to the MCTs lower average rating of 6.0. Again, the majority of BT/MCT comparisons were within 0-2 points difference; with the exception of BT4 (rated self seven compared to MCT rating four) and BT8 (rated self a five compared to MCT rating an eight). Both of these outliers skewed the data slightly for this question.

When comparing the BTs overall classroom management average score of 57.4 to the MCTs average rating of 50.2 (see Figure 6) the BTs rated their self-efficacy in classroom

management higher than their respective MCTs rated them. When looking at the 10 BT/MCT overall ratings side-by-side, half of these BTs rated themselves higher than their MCT rated them and the other half of these BTs rated themselves lower than their MCT rated them. Of the five BTs who rated themselves higher than their MCT were BT2 (6-point difference), BT3 (19-point difference), BT4 (26-point difference), BT5 (7-point difference), and BT 7 (8-point difference). The two BTs with the most significant discrepancies in scores were BT3 and BT4 which were rated by the same MCT-B (see Figure 7). Of these five BTs who rated themselves higher than their MCTs rated them, three identified themselves as first year working with an MCT, and two were in their second year working with an MCT and 4 out of 5 of these BTs were concentrated in K-5 ELA. In conclusion, some BTs have an inflated view of themselves where they see themselves having more confidence in their abilities compared to how their MCT viewed their capabilities. This could also conclude that some MCTs may or may not have perceived higher expectations for the BTs who they work with, so these scores are subjective to the views and could directly reflect the efficacy of the MCT.

The five BTs who rated their self-efficacy in classroom management lower than their respective MCTs rated them were BT1 (4-point difference), BT6 (3-point difference), BT8 (12-point difference), BT9 (12-point difference), and BT10 (7-point difference) (see Figure 7). These five BTs included three teachers that identified as first year working with MCT and two as second year working with an MCT. Three out of five of these teachers were concentrated working with their MCT in Math with four at the K-5 level and one of these teachers working in 6-12 math. The two BTs with the most significant discrepancies in ratings were BT8 (1st year K-5 ELA teacher) and BT9 (second year K-5 Math teacher). BT9 and BT10 both shared the same MCT-E and identified as being in their second year working with this MCT in the area of K-5

Math (see Figure 7). Both of these BTs rated themselves between seven and 12 points lower than their MCT rated their classroom management abilities. This illustrates how some MCTs perceive their BTs abilities to be higher than the BTs feel they are capable of and that MCTs that have worked longer with their BT rated their BT higher. These two BTs who were focused in K-5 math in their second year could be working very closely together with this one MCT and therefore their efficacy scores were closely aligned; however, research would support that collective efficacy would yield higher or more inflated self-efficacy scores. In conclusion, some MCTs that have worked closely for more than one year with their BT may have more confidence in their BTs ability to handle classroom management than their BTs self-confidence. Again, the MCTs scores could be subjective and vary depending upon the BT/MCT relationship, subject matter and classroom factors, as well as the MCTs overall self-confidence or self-efficacy.

Overall, PDSA 2 data findings suggest that BTs who work closely with an MCT report high self-efficacy scores, especially in the area of classroom management. Most MCTs and BTs ratings on each of the eight-classroom management self-efficacy questions showed similar ratings with some MCTs rating their BTs higher and vice versa depending on the question. Out of the 10 BT/MCT comparisons that were analyzed, 50% showed the MCT rated their BTs efficacy higher than the BT rated themselves, and 50% showed the BTs rated their self-efficacy higher than their MCTs rated them (see Figure 7). Factors that may have contributed to inflated BT self-efficacy include the MCTs level of support and feelings of confidence having a veteran and mentor teacher in your classroom every day. MCTs self-efficacy and their level of expectations for the BTs they work with could also contribute to discrepancies in how the MCTs rated their BTs. The findings also illustrated that some BTs have unrealistic views of their

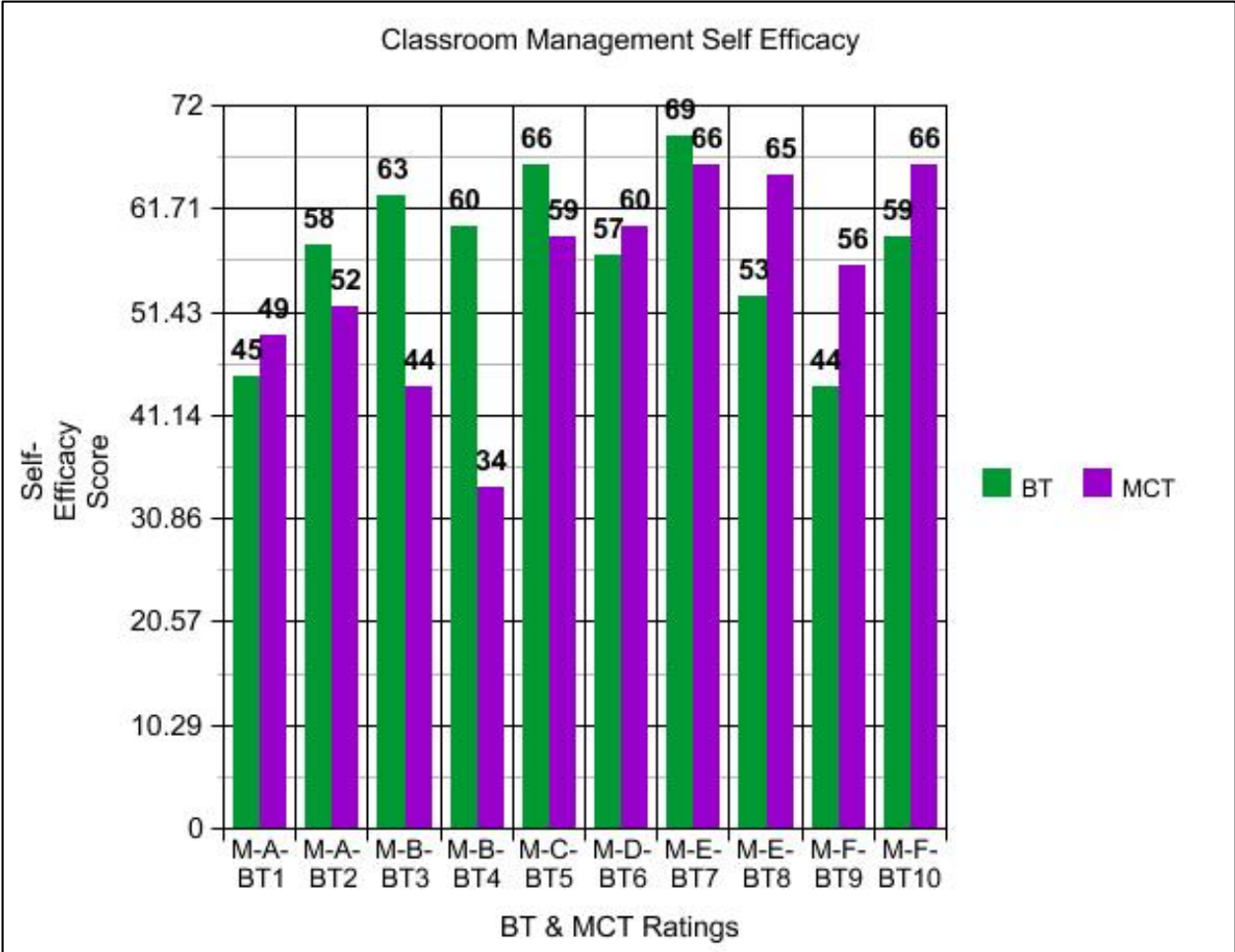


Figure 7. BTs classroom management SE ratings compared to their MCTs ratings.

capabilities compared to their true abilities. The support structure that the MCT program provides to these BTs helped increase their self-efficacy.

PDSA Cycle 3 Findings

The original purpose of PDSA Cycle 3 was to administer the TSES to all BTs who participated in the MCT program during the 2019-2020 school year to analyze and compare BT self-efficacy before and after participating in the MCT program. The self-efficacy results from the BTs who participated in the self-efficacy improvement strategy were isolated to determine if there was a significant difference in the BTs self-efficacy that participated in the small-scale study compared to all of the BTs who participated in the MCT program. Due to the shift in study caused by the global pandemic closing schools, the PDSA Cycle 3 timeline had to be extended to the fall 2020. After the researcher consulted with the dissertation chair and key stakeholders involved in this study, the researcher moved the 1-1 interviews with BTs to the fall of 2020. With the opening of a new school year, and the findings from the MCT/BT classroom management efficacy comparison, the team felt the interviews could provide valuable qualitative data regarding the impact the MCT program had on their experiences as a beginning teacher. Based on the findings from PDSA Cycle 2, the researcher felt that the study would be enhanced by providing additional qualitative data by including interviews with 2 MCTs that participated in the study to include their reflections and experiences in the program.

PDSA Cycle 3 Interview Analysis

Due to the shift in the study caused by the Global Pandemic, the researcher redesigned PDSA Cycle 2 to explore BT self-efficacy in classroom management. The original PDSA Cycle 2 proposed Interviews were shifted to PDSA Cycle 3. The researcher included the original BTs who were to participate in the study along with the two MCTs that were part of the original

small-scale study cycle 2. The purpose of the one-on-one interview questions were to explore the BTs experiences with the MCT program as well as how these experiences impacted their retention (see Appendix C). The purpose of the MCT one-to-one interviews was to provide reflection and experiences about their participation in the MCT program and explore their impact on BT self-efficacy.

The BT interviews were conducted one-on-one with each of the four BTs. The researcher recorded and transcribed the data from the interviews. Findings from the BT interviews included an overarching theme of support offered by the MCT. This pattern was indicated in almost every interviewee's response.

Question 1: Tell me why you chose to participate in the MCT program as a BT?

Participant 1: "I was a lateral entry teacher and I knew I needed the support."

Participant 2: "Definitely because of the support...I was going to be in a testing grade and I knew I really wanted to learn from my MCT."

Participant 3: "I was new to teaching and high school and I really wanted someone to learn from and support me."

Participant 4: "I was struggling my first year as a teacher and I was so excited to work with the MCT...I needed so much help with lesson planning and teaching, she gave me so much support."

The participant responses to the interview questions were coded and the following relationships were discovered. Participant's shared that the MCT provided support in a variety of ways such as helping build confidence, supported them with how to respond to parents, interventions, differentiating instruction, helping them become a teacher leader, modeling how to

advocate for students, lesson planning, teaching strategies, academic language, and participant 1 shared that the MCT even helped her understand her licensure coursework.

Of the four interviews conducted for the study, the second level of coding in *NVivo* focused explicitly on the ways in which the MCT program has impacted their professional growth and development (see Table 5). The researchers used inductive coding and first round codes included responses such as planning, relationships, dealing with parents, co-teaching. The researcher then grouped the codes from the interview transcripts into the following four nodes: instructional strategies, lesson planning, total school environment, and classroom management (see Table 5). The researcher added their own interpretive lens to derive the four nodes, with classroom management and instructional strategies labeled as two of these nodes as they also support categories of self-efficacy explored in the study. Total school environment included all responses that did not fit with the other nodes such as relationships with parents, students, or colleagues, handling paperwork, scheduling, and professional endeavors. Instructional strategies were used to describe responses such as co-teaching, planning, Whole Brain Teaching strategies, differentiating instruction and academic language. Lesson planning included any responses that mentioned planning including co-planning, guided reading or math planning, long-range planning, and Learning Focused Lesson Planning™. The node classroom management refers to any interviewee responses that included handling classroom behaviors, rewards and consequences, classroom management system, rules, and Whole Brain Teaching™ classroom management and engagement strategies including Super Improver System, class attention getter, scoreboard, and mirror words.

Interviewees talked about how MCTs were able to provide support in navigating the total school environment, which included relationships with colleagues, managerial duties, paperwork

and processes and additional responsibilities. Interviewees shared the number of valuable resources that MCTs shared as well as helped them to find. Table 5 contains a summary of the second level coding data. Analysis indicated that 19% of the coded statements related to the instructional strategies and focused on teaching and that 18% of the coded statements related to specific lesson planning and design. The remaining coded statements were about providing support in the total school environment (14%) and 16% related to MCTs supporting growth in classroom management (see Table 5).

The researcher modified question 3 after the shift in the study to examine BTs experience with classroom management during this process. Question 3 asked: “In what ways do you feel the MCT supported classroom management?” Participants 2 and 3 both shared that the MCT supported them so much in this area. Participant 2 stated, “At first I thought my MCT was tough but now I’m just like her. She trained me to be firm, consistent, and have a high work ethic.” Participant 4 stated, “The MCT gave me new ideas and strategies to help me with some disruptive students...I learned so much from observing her interact with the students.”

This was a pattern that emerged in all four BT responses as they shared that their MCT modeled how to handle situations and how they observed their MCT build those relationships with students that really helped them model similar approaches.

Participant 1 stated, “The MCT helped me implement consistent routines especially working with older students...I was more prepared with classroom management because I was a Teacher Assistant first, but I would have struggled with the transition to my teaching grade.”

The researcher asked question 7 during the interview “Where do you see yourself in the next 3 to 5 years?” and “How has the MCT program impacted the likelihood of remaining in the classroom? Interview question 7 aligns with Research Study Q. 3 How does the MCT program

Table 5

MCT Program Impact on Professional Growth

Interviewee	Instructional Strategies	Lesson Planning	Total School Environment	Classroom Management
P1	4	3	4	2
P2	5	4	3	6
P3	4	5	2	3
P4	6	6	5	5
Total	19%	18%	14%	16%

Note. Data represent the number of codes related to each node. The MCT impact on professional growth included instructional strategies, lesson planning and design processes, navigating the total school environment, and classroom management.

contribute to BT retention? All four participants indicated they plan to continue teaching in the next 3-5 years. Participant 1 shared that she would like to pursue a Master's Degree in Education in the next five years while she is teaching. Participant 2 shared that now she is a Key BT (teacher leadership role) and that in addition to continuing to teach she also wants to be involved in mentoring teachers and maybe one day a Lead Mentor. Participant 3 shared that she would stay in the classroom and eventually that she wanted to teach in higher education, possibly at a community college or university one day. Participant 4 also shared she wanted to remain teaching but was scared that a possible relocation may be in store for her and she shared that the MCT was still someone that she will remain in contact with in her future.

All of the participants indicated that the MCT program impacted their likelihood of staying in the classroom. Participant 1 responded, "I wouldn't have made it through my first year and especially not through this pandemic without the support of my MCT...she helps me stay balanced, and I know she's always there to support and guide me; I feel like I can't fail." Participant 3 shared, "if I didn't have my MCT last year I would have probably quit by Christmas...she knew exactly what I needed even when I didn't know. I doubt I would still be teaching if not for her." The pattern of support provided by the MCT continued to emerge in the participants responses about the likelihood of continuing to teach, which supports how MCTs contribute to BT retention.

Participants were asked a follow-up question "do you think BTs without an MCT would be more likely to quit teaching?" Participants responded by sharing that they have friends that have quit teaching in the first years and even BTs who they are talking about quitting after this year that don't have the support of an MCT. Participant 1 shared, "a lot of BTs are not prepared for the amount of work, time involved with teaching and planning, and how much of yourself

you give in this profession...I think the expectations on teachers are so high and of course they are underpaid, so without support, that's why they leave.”

The researcher chose to interview the two MCTs that participated in the study to include their reflections and experiences in the program to enhance the study. Findings from PDSA Cycle 2 suggest that BTs who work closely with an MCT report high self-efficacy scores, especially in the area of classroom management. MCT ratings of their BTs efficacy in classroom management closely aligned to their BTs Self-Efficacy rating in classroom management; however, findings also illustrated that some BTs have inflated views of their capabilities compared to their true abilities. The support structure that the MCT program provides to these BTs helped increase their self-efficacy. The purpose of the interviews with two MCTs was to capture their reflections on the experience in the program as well as explore the connection between BT classroom management Self-efficacy compared to their MCT ratings.

The two MCTs were both interviewed separately after the BT interviews. The purpose of the MCT interviews were to capture their reflection of the impact of this experience on them and to gather qualitative data in regards to the impact of this program on BT self-efficacy especially in the area of classroom management. The MCTs were asked the following three reflective questions: (1) How has your experience as an MCT impacted you the most? (2) In what ways do you feel you have influenced the self-efficacy of the beginning teachers you have worked with? (3) What factors might have contributed to BTs who work with an MCT having a high sense of self-efficacy in the area of classroom management? (see Appendix F)

The MCT responses to how their experience impacted them the most both offered that being an MCT has forever changed their lives in a positive way. Both MCTs shared that working with BTs forced them to continually adjust the different lenses in which they viewed teaching

and collaborating. One MCT responded that working with new teachers opened her eyes to many of the boundaries of inexperience she had forgotten were there. Another MCT shared how this experience forced her to shift her focus to support the growth of other teachers instead of just the growth of her students.

MCTs shared ways they felt that have influenced the self-efficacy of the BTs they worked with by using Cognitive CoachingSM conversations and focusing on continually building reflective practices in their BTs. MCTs expressed that they worked so closely with these BTs and the relationship, trust, and ongoing support provided the foundation for their BTs to flourish and become more self-confident in their abilities.

When MCTs were asked about factors that may have contributed to BTs high sense of self-efficacy in classroom management, both MCTs felt that the direct support from the experienced MCT was a constant factor. One MCT shared that her own self-efficacy and confidence in teaching are high and therefore as she worked with her BTs, this confidence transfers to them as they can see through her own eyes. The other MCT shared that so much of the MCT/BT experience is grounded in observation and reflection and that the collaborative teaching environment nurtures the BTs growth.

Study Questions

This section provides the answers to the initial three study questions focusing on one question at a time:

1. To what extent does the self-efficacy of beginning teachers change as a result of the MCT Program?

The self-efficacy of beginning teachers participating in the MCT program during the 2019-2020 school year increased. The mean score from the pre-survey administered in December 2019 was

70.85, indicating highly inflated self-efficacy scores. Due to the timing of this pre-assessment in December, data could be less reliable as these BTs had already spent at least five months working with an MCT which could contribute to the inflated scores. Since the researcher was unable to administer the post assessment survey to BTs at the end of the year due to the global pandemic, qualitative interview data were used to support the claim that BT self-efficacy increased as a result of the MCT Program. BTs rated themselves highest in self-efficacy in classroom management, an area that contradicts the research that classroom management is an essential concern for beginning teachers (Dicke et al., 2015).

2. How do beginning teachers who participate in the MCT Program rate their classroom management self-efficacy compared to how their MCTs rate their teaching efficacy?

BTs who work closely with an MCT report high self-efficacy scores, especially in the area of classroom management. Most MCTs and BTs ratings on each of the eight-classroom management self-efficacy questions showed similar ratings with some MCTs rating their BTs higher and vice versa depending on the question. Out of the 10 BT/MCT comparisons that were analyzed, 50% showed the MCT rated their BTs efficacy higher than the BT rated themselves, and 50% showed the BTs rated their self-efficacy higher than their MCTs rated them. Factors that may have contributed to inflated BT self-efficacy include the MCTs level of support and feelings of confidence in having a veteran and mentor teacher in your classroom every day. MCTs self-efficacy and their level of expectations for the BTs they work with could also contribute to discrepancies in how the MCTs rated their BTs. The findings also illustrated that some BTs have inflated views of their capabilities compared to their true abilities. The support structure that the MCT program provides to these BTs helped increase their self-efficacy.

3. How does the MCT program contribute to BT retention?

According to the interview data collected from BTs who participated in the MCT program, all respondents reported that they plan to continue in the teaching profession for the next three to five years. Two of the interviewees responded that the likelihood of continuing to teach was greatly impacted by their participation working with an MCT. Research question 3 is also supported from MCT interview question 2: “In what ways do you feel you have influenced the self-efficacy of the beginning teachers you have worked with?” MCTs shared examples of the support they provided to the BTs through reflective coaching practices, observations, modeling, and transference of their own confidence onto the BTs they worked with. Increasing support for beginning teachers has the potential to keep effective teachers in the classroom and improve the culture of teaching within schools (Stewart et al., 2021).

Summary

This study explored how the MCT Program impacted BT self-efficacy and retention by utilizing the Plan-Do-Study-Act (PDSA) Cycles to improve beginning teacher self-efficacy and retention. The researcher’s original proposal included three PDSA Cycles beginning with administering self-efficacy scale surveys to BTs as a pre-assessment to determine the lowest area of self-efficacy for BTs, followed by the implementation of a small-scale improvement strategy and BT interviews. The study was proposed to end with a post-assessment administration of teacher self-efficacy scale surveys in PDSA Cycle 3 to compare any change in self-efficacy as a result of the small-scale study.

In PDSA Cycle 1 the researcher administered the teacher self-efficacy scales surveys to BTs participating in the MCT program to obtain baseline teacher self-efficacy scores as a pre-test measure. The primary goal of PDSA Cycle 1 was to analyze the survey data to identify the overall weakest category of self-efficacy (student engagement, instructional strategies, classroom

management) reported collectively by the BTs. The analysis of the initial survey data revealed the lowest category of self-efficacy in student engagement with an average response on the 9-point scale of a 7.01 average. The findings from PDSA Cycle 1 found that BTs rated their self-efficacy high, with the highest area of self-efficacy reported in classroom management.

Teachers' self-efficacy in classroom management is aligned with teachers' professional competence and a key predictor of effective classroom management strategies (Kunter & Baumert, 2007; Zee & Koomen, 2016). Self-efficacy for classroom management may be vulnerable early in the teaching profession and improve as teachers accumulate mastery experiences (Woolfolk et al., 1990; Zee & Koomen, 2016). Therefore, the findings in Cycle 1 contradict the research that beginning teachers feel less self-efficacy in the area of classroom management.

The original objective during the second cycle of the PDSA was to create an improvement strategy in the weakest area of self-efficacy, which was identified in PDSA Cycle 1 as student engagement. As the researcher was about to begin PDSA Cycle 2 improvement strategy with the small-scale study, the nation was dealing with a global pandemic, which caused the closure of schools across the country. This global pandemic caused the researcher to shift the study in Cycle 2. The revised purpose of PDSA Cycle 2 was to examine the BTs highest area of self-efficacy in classroom management by administering the same eight classroom management self-efficacy questions on the TSES to the MCTs who work with these BTs to examine and compare any findings. PDSA 2 data findings suggest that BTs who work closely with an MCT report high self-efficacy scores, especially in the area of classroom management. Most MCTs and BTs ratings on each of the eight-classroom management self-efficacy questions showed

similar ratings with some MCTs rating their BTs higher and vice versa depending on the question (see Figure 7).

PDSA Cycle 3 included qualitative data from interviews with four BTs who work with MCTs as well as interview data from 2 MCTs. The purpose of these interviews was to explore the BTs experiences with the MCT program and how these experiences impacted their retention and explore MCTs impact on BT self-efficacy. Findings from the BT interviews included an overarching theme of support offered by the MCT. All of the participants indicated that the MCT program impacted their likelihood of staying in the classroom. The pattern of support provided by the MCT continued to emerge in the participants responses about the likelihood of continuing to teach which supports how MCTs contribute to BT retention.

The MCTs reflection of how this experience impacted them the most included that being an MCT has forever changed their lives in a positive way. Both MCTs shared that working with BTs forced them to continually adjust the different lenses in which they viewed teaching and collaborating. MCTs expressed that they worked closely with these BTs and the relationship, trust, and ongoing support provided the foundation for their BTs to flourish and become more self-confident in their abilities. This self-confidence translates into an increased sense of self-efficacy which supports the claim that BTs who worked with an MCT have a higher sense of self-efficacy. When MCTs were asked about factors that may have contributed to BTs' high sense of self-efficacy in classroom management, both MCTs felt that the direct support from the experienced MCT was a constant factor.

Chapter 4 displayed the results of the study, which included the quantitative and qualitative data that emerged throughout the action research cycles as well as an analysis of data.

Chapter 5 will summarize this study and elaborate on the results and their connection to the literature, address implications for the findings, and provide recommendations moving forward.

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

New teachers need additional support and professional development experiences to become more effective teachers. The research on new teacher induction and attrition examines program supports such as mentoring and professional development (Feiman-Nemser, 2012; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004; Sundli, 2007). A growing number of beginning teachers are leaving teaching within their first three years, with half leaving the profession in the first five years (Darling-Hammond & Sykes, 2003; Ingersoll, 2012). In an attempt to slow this level of attrition, school districts are erecting ambitious induction programs. The problem of practice addressed in this study was low teacher self-efficacy and higher teacher turnover for beginning teachers. The purpose of this study was to determine how one school district's MCT Program impacted BT self-efficacy and retention.

Summary of the Findings

This study sought to explore how the MCT Program impacted BT self-efficacy and retention and then utilized three Plan-Do-Study-Act (PDSA) Cycles to improve beginning teacher self-efficacy and retention. The three study questions were as follows with Chapter 4 providing answers to each question:

1. To what extent does the self-efficacy of beginning teachers change as a result of the MCT Program?
2. How do beginning teachers who participate in the MCT Program rate their classroom management self-efficacy compared to how their MCTs rate their teaching efficacy?
3. How does the MCT program contribute to BT retention?

The findings from PDSA Cycle 1 found that BTs rated their self-efficacy high, with the highest area of self-efficacy reported in classroom management. Teachers' self-efficacy in classroom management is aligned with teachers' professional competence and a key predictor of effective classroom management strategies (Kunter & Baumert, 2007; Zee & Koomen, 2016). Zee & Koomen (2016) suggests that self-efficacy for classroom management may be vulnerable early in the teaching profession and improve as teachers accumulate mastery experiences. Therefore, the findings in Cycle 1 contradict the research that beginning teachers feel less self-efficacy in the area of classroom management. It is important to note that research on beginning teacher's self-efficacy in classroom management may not align to this study as BTs in this study were rating their self-efficacy based on working with a veteran co-teacher.

The revised purpose of PDSA Cycle 2 was to examine the BTs highest area of self-efficacy in classroom management by administering the same eight classroom management self-efficacy questions on the TSES to the MCTs that work with these BTs to examine and compare any findings (see Appendix D). PDSA Cycle 2 data findings suggest that BTs who work closely with an MCT report high self-efficacy scores, especially in classroom management. Most MCTs and BTs ratings on each of the eight-classroom management self-efficacy questions showed similar ratings with some MCTs rating their BTs higher and vice versa depending on the question. Out of the 10 BT/MCT comparisons that were analyzed, 50% showed the MCT rated their BTs efficacy higher than the BT rated themselves, and 50% showed the BTs rated their self-efficacy higher than their MCTs rated them. Factors that may have contributed to inflated BT self-efficacy include the MCTs level of support and feelings of confidence in having a veteran and mentor teacher in your classroom every day. MCTs self-efficacy and their level of expectations for the BTs they work with could also contribute to discrepancies in how the MCTs

rated their BTs. The findings also illustrated that some BTs have inflated views of their capabilities compared to MCT ratings of their capabilities. The support structure that the MCT program provides to these BTs helped increase their self-efficacy.

PDSA Cycle 3 included qualitative data from interviews with four BTs who worked with MCTs and interview data from two MCTs. Findings from the BT interviews included an overarching theme of support offered by the MCT. All of the participants indicated that the MCT program impacted their likelihood of staying in the classroom. The pattern of support provided by the MCT continued to emerge in the participants responses about the likelihood of continuing to teach which supports how MCTs contribute to BT retention.

Limitations

One limitation of this study was the researcher's employment with PCS during data collection. The researcher was the principal of one of the elementary schools in which the MCT Program was being implemented with two beginning teachers in two third grade classrooms. The researcher participated in the District's MCT Training and Professional Development Sessions and wrote a proposal to the district to participate in the 3-year MCT Model at the researching school. The COVID-19 Pandemic that closed schools in March 2020 caused a disruption to the study in which the study shifted design in PDSA Cycle 2. These factors contributed to the limitations due to the researcher's wealth of knowledge about the MCT Program, the teachers included in the research, and the school in which research was being conducted, that could create bias prior to data collection.

Conclusions

The research questions that guided the study revealed that the MCT program had a positive impact on BTs self-efficacy and retention rates. Multiple data sources revealed

contributing factors such as the support provided by the MCT as an overarching theme, the collaborative relationships and co-teaching experiences provided by the MCT, and the power of reflection in building teachers self-efficacy and growth. Based on these findings, the scholarly practitioner presents the following five conclusions:

Conclusion 1: BTs who were supported by an MCT had a high sense of self-efficacy. MCTs had an impact on their BTs professional growth the most by providing support with instructional strategies, lesson planning and design processes, navigating the total school environment, and classroom management. The support structure that the MCT program provided to these BTs was revealed in BTs inflated self-efficacy scores. In a study by Swan, Wolf and Cano (2011) that tracked the changes in teacher self-efficacy from student teaching through the end of the third year, the pattern that resulted showed that self-efficacy was highest during student teaching. According to a study by Hoy and Spero (2005), beginning teachers completing their first year of teaching who had a high sense of teacher efficacy found greater satisfaction in teaching, had a more positive reaction to teaching, and experienced less stress. Zee & Koomen (2016) suggests that observations of others performing successfully through modeling can strengthen beliefs that one can perform similar tasks. The co-teaching foundation of the MCT program paired with the opportunity for these BTs to continually observe model teachers performing tasks continues to support that teacher self-efficacy increases through observation and collaboration with mentor teachers. This conclusion aligns with the conceptual framework of this study as Bandura (1997) suggests that successes raise self-efficacy, while failures, mainly if they occur early in the learning process, are likely to lower self-efficacy. Thus, the first years of teaching could be critical to the long-term development of teacher efficacy (Hoy & Spero, 2005).

Conclusion 2: MCTs had a positive impact on their BTs self-efficacy in classroom

management through approaches such as co-teaching, modeling, observing, and reflecting. The findings from PDSA Cycle 1 found that BTs rated their self-efficacy high, with the highest area of self-efficacy reported in classroom management. Teachers' self-efficacy in classroom management is aligned with teachers' professional competence and a key predictor of effective classroom management strategies (Kunter & Baumert, 2007; Zee & Koomen, 2016). Zee and Koomen (2016) suggests that self-efficacy for classroom management may be vulnerable early in the teaching profession and improve as teachers accumulate mastery experiences. Therefore, the findings in Cycle 1 contradict the research that beginning teachers feel less self-efficacy in the area of classroom management. A pattern that emerged in the four BT interviews was how the MCT modeled how to handle situations and how they observed their MCT build those relationships with students that really helped them model similar approaches. This conclusion that BTs self-efficacy was higher in classroom management supports the theory of self-efficacy in that self-efficacy can be strengthened by building opportunities for positive modeling of successful experiences (Tschannen-Moran & Hoy, 2007), all of which these MCTs provided in the classroom setting.

Conclusion 3: Some BTs have inflated views of their capabilities compared to how their MCTs rated their efficacy in classroom management. Factors that may have contributed to inflated BT self-efficacy include the MCTs level of support and feelings of confidence having a veteran and mentor teacher in your classroom every day. MCTs self-efficacy and their level of expectations for the BTs they work with could also contribute to discrepancies in how the MCTs rated their BTs. Tschannen-Moran et al. (1998) suggest that self-efficacy is only a perception of ability and that this perception can often be an "overestimate or underestimate" of actual ability. Bandura (1997) argued that perception of capability is only as good as one's execution and that

poor execution can lead to negative outcomes which can in turn negatively affect an individual's self-efficacy. Bandura (1997) suggested that it is better when teachers slightly overestimate their actual teaching skills, as their motivation to expend effort and to persist in the face of setbacks will help them to make the most of the skills they do possess (Tschannen-Moran & Hoy, 2007). Aligning to the research, these results support that the BTs overestimation of their self-efficacy might build resiliency, and possibly affect the teachers' ability to set attainable goals, experiment with new instructional techniques, and contribute to their motivation (Tschannen-Moran et al., 1998).

Conclusion 4: BTs who work with an MCT are likely to continue teaching and study participants indicated pursuing advanced degrees and teacher leadership roles in their future. This study was limited to the responses of four BTs who worked with an MCT; however, additional longitudinal studies would be beneficial in following all the BTs in the program over the next 5-10 years to determine the likelihood that they continue teaching and their career advancement or teacher leadership pathways. All of the participants indicated that the MCT program impacted their likelihood of staying in the classroom. Some of their responses included statements such as, "I wouldn't have made it through my first year and especially not through this pandemic without the support of my MCT...she helps me stay balanced and I know she's always there to support and guide me, I feel like I can't fail" and "if I didn't have my MCT last year I would have probably quit by Christmas...she knew exactly what I needed even when I didn't know and I doubt I would still be teaching if not for her." The pattern of support provided by the MCT continued to emerge in the participants responses about the likelihood of continuing to teach which supports how MCTs contribute to BT retention.

Studies indicate a correlation between teacher self-efficacy and retention (Chestnut & Burley, 2015; Skaalvik & Skaalvik, 2016). Chesnut and Burley (2015) found that motivational factors tied to self-efficacy beliefs among teachers can lead to negative self-efficacy beliefs and create potential stressors, which was found to be a reason that teachers leave the profession (Skaalvik & Skaalvik, 2016). Several studies found that a significant number of teachers that leave the profession within the first five years had weaker self-efficacy beliefs (Klassen & Chiu, 2011; Skaalvik & Skaalvik, 2016). Tschannen-Moran et al. (1998) found that beginning teachers with a high sense of self-efficacy were more likely to stay in the field, “experience greater satisfaction in teaching and experience less stress.” BTs who worked with an MCT had a high level of self-efficacy and this correlation with teacher retention corroborated with the research on teacher self-efficacy and retention.

Conclusion 5: The professional development provided to both the MCTs and the BTs during the program had a significant impact on the BTs self-efficacy. Throughout the study, during interviews with BTs and the MCTs, participants shared specific professional development experiences and professional growth that resulted from coaching conversations between the MCT and BT. MCTs mentioned Cognitive Coaching, Crucial Conversations, and Reflective conversations as a foundation for their work with BTs. The BTs shared the professional development they were provided and the additional time they were given to work with their MCT before school started as one of the most critical factors in their feelings of success.

Yoo (2016) found that professional development has a positive correlation with teacher self-efficacy. As teachers gain new knowledge, especially in the early years, self-efficacy tends to increase. One of the notable findings in the study by Yoo (2016) was the frame of reference change through professional development experiences. For example, some participants felt that

gaining more knowledge about content and instructional strategies left them overrating their self-efficacy due to overconfidence or the opposite; teachers underrated their self-efficacy after professional development as it left them with the feeling of uncertainty (Yoo, 2016). The finding from this study that professional development opportunities supported an increase in the BTs self-efficacy was consistent with Bandura's (1997) view that teacher efficacy is increased with additional training that is designed to aid teaching experience.

In the R3 Framework Evaluation Brief (January, 2021) the role of the Career Pathway Specialist (CPS) on MCTs growth was explored. CPS are experienced coaches who participate in advanced training in adult mentoring, leadership, and data-driven practices. Based on the December 2020 survey responses of MCTs about the types of supports provided to them to support their role included: 1:1 coaching, modeling, feedback, and observation (R3 Framework Evaluation Brief, 2021). When MCTs were asked to identify the supports most important to their own success in their advanced teaching role, 80% of MCTs ranked 1:1 coaching session the highest. This is an important finding that suggest that the professional supports and structured coaching sessions provided to the MCTs were just as valuable to the self-efficacy of the MCTs as the MCTs support was to the BTs who they worked with. Moving forward, I believe the structure of the MCT program including the high-quality supports, professional development, and requirements should be explored in-depth and recommendations given to support teacher induction programs at the school and district level as well as supporting university-based teacher induction programs.

Recommendations

This study sought to examine how the MCT program impacted two areas for beginning teachers: self-efficacy and retention. This information contributed to the body of knowledge on

BT self-efficacy and retention and concluded that BTs who were paired with an MCT indicated higher self-efficacy and confidence in teaching and were more likely to continue teaching. My research was limited to BTs who were part of the MCT program and cannot be used to make a generalization of all BTs across the district. Comparing the self-efficacy of BTs who were working with an MCT with BTs who did not have an MCT would provide additional data for future research. Further researchers may also want to examine and compare student outcomes in classrooms using MCT vs. non-MCT programs to determine if students performed better in MCT classrooms. Past studies indicate that student achievement correlates with teacher self-efficacy, so this study could be extended to include student achievement and growth in relation to BT self-efficacy and participation in the MCT program.

Recommendations for further research in the area of teacher retention include extending this study to follow these BTs who participated in the MCT programs over the next five to ten years to see if the teachers have continued teaching and, if so, the effects on their level of achievement or teacher leadership capacity. It would be interesting to examine any correlations with these BTs and advanced teaching roles such as the MCT role in their own career path.

The MCT model is grounded in co-teaching and the original small-scale study proposed could have provided significant contributions to the gap in literature on co-teaching as a BT support and induction strategy. Additional research in this area could prove beneficial in contributing to teacher induction literature. Co-teaching in pre-service teacher preparation models is continuing to be explored, even locally at East Carolina University. Using this foundational research to begin expanding to co-teaching during teacher pre-service through co-teaching experiences as a beginning teacher would be an excellent area for future studies.

The shift in the study caused by the Pandemic and the unanticipated results in PDSA Cycle 1 led me to explore the BTs' high sense of self-efficacy in classroom management, which contradicts the research that classroom management is a struggle for BTs. These results suggest that more schools/districts and teacher preparatory programs explore the relationship between BT support and classroom management, as this study suggests the direct support and mentorship provided to BTs by their MCT contributed to increased classroom management self-efficacy.

Moving forward the funding from the grant that sustained the MCT program is ending at the end of this school year. As our district is meeting regularly to discuss and recommend ways to support these positions next school year, school leaders such as myself are considering ways to continue the MCT position. Based on the findings from this study and my own recommendations to our district, I plan to utilize my class size reduction waiver to use one of my teaching positions for an MCT as well as complete a request for district funding for \$13,000 to sustain the supplement and benefits to fund one MCT position. The influence and expertise of an experienced and effective teacher on beginning teachers cannot be measured in data alone and the result of this program has been a collective sense of leadership self-efficacy that would be worth exploring more in-depth in the future. These MCTs were able to extend their influence to other teachers and students in their buildings beyond just the BTs they worked with. Based on the collective results of this study, I will be making recommendations to continue these roles to support BTs and build their capacity, therefore increasing teacher retention.

Implications for School Leaders

The purpose of this study was to examine how a unique three-year MCT program being implemented in Pitt County Schools impacted beginning teachers. In a meeting with Dr. Seth Brown, Program co-developer, he shared that the vision for this MCT position was to build

teacher capacity. In an interview dated January 29, 2021, Dr. Brown stated, “The way we focus on student achievement is not by directly attacking student achievement. It’s instead, by focusing on the teachers that are then going to be working on student achievement for the rest of their careers.” Dr. Brown believes that by utilizing the MCT to impact these BTs who once you eventually wean that BT to be successful on their own, you now have a teacher that for the rest of their career is a phenomenal teacher. Although this study was done in such a small setting, I observed this outcome in my own school. One of the BTs in this study has now weaned off or exited from working with the MCT during the 20-21 school year. After working with an MCT for two years, this BT stepped away on her own because she was ready, which allowed the MCT the opportunity to begin working with another BT in her place. This BT that spent two years in the MCT program is not only performing exceptionally well, she has developed a multitude of leadership qualities. She has accelerated into an advanced leadership BT role in our school and district, serving as a Key BT. A Key BT is a beginning teacher who demonstrates leadership and helps provide support to BT1s and BT2s in their building and receives additional leadership training. This BT was also serving as the Grade Level Chair and School Improvement Team representative this year as a third-year teacher.

Dr. Brown pointed out some recent research from “Pitt County Schools, R3 Framework Annual Evaluation Report” (October, 2020), that included data analysis conducted by Measurement Incorporated that included Co-teachers or BTs student achievement growth. According to this report, BTs who worked with an MCT were compared to similarly matched with BTs who did not participate in the MCT program. Their EVAAS Index scores one year before teaming up with an MCT and one year after co-teaching with an MCT were compared. The results showed that the BTs mean index score gain from 2018 to 2019 approached statistical

significance with a gain of .08 compared to the BTs who did not work with an MCT who made smaller gains but stayed in the negative score range. BTs who worked with an MCT improved their mean index score from -0.87 to positive 0.02 after 1 year, putting them in the positive range on the *meets expected growth* effectiveness level in EVVAS (Measurement Incorporated, 2020). Student achievement outcomes were a variable that was considered during the study proposal, and although it was not part of this study, the data provided suggest that student achievement and growth are factors that should positively correlate with MCT support.

Moving forward, this study contributes to the MCT program evaluation data that have been collected over the past three years as well as to the research in BT support. The research on beginning teachers (BTs) cites induction programs, mentoring, and professional development as crucial components of beginning teacher support (Curran & Goldrick, 2002; Gujarati, 2012; NCES, 2013; Strauss, 2017). Collaboration and providing a collegial atmosphere with positive working conditions were key themes highlighted in the current literature. The literature revealed the crucial role that school administration plays in beginning teacher retention along with creating positive working conditions and a healthy school climate. A gap in the literature on Model Residency Programs such as the MCT program and specific structures such as co-teaching, co-planning, reflecting, professional collaboration, and well-designed professional development embody this research. As school leaders, we will always face a teacher shortage. Retaining high-quality teachers will remain a priority for our schools to be successful. We have teacher preparation programs and district induction programs in place across the nation with the goal of preparing, supporting and retaining our teaching force. Decades of research have suggested that these efforts are simply not enough to retain our beginning teachers which is why districts such as Pitt County Schools, and many others have begun erecting ambitious models

such as this MCT model with the goal of building teacher capacity, which leads to increased self-efficacy, retention, and ultimately contributes to investing in a culture of teacher leadership.

For school leaders, the implications of this study suggest some important pillars upon which one could re-create a similar model of beginning teacher support. These include re-examining your allotted positions and funding sources to create a teacher support position such as an MCT. School leaders must take intentional steps in creating or providing professional development opportunities for this position and provide strategic training to the BTs they are supporting. The timing of this training, if at all possible, should be prioritized to a time right before the beginning of the school year to allow this MCT to have time to plan and work together with BTs before students start the school year. Bandura (1997) suggests that observing others performing successfully is critical in building self-efficacy, especially for novice and beginning teachers. Leaders should create structures and schedules to allow BTs to co-plan, co-teach, and observe effective and successful teachers. We are all aware of the Chinese proverb, “give a man a fish, and you feed him for a day; teach a man to fish, and you feed him for a lifetime.” This applies to how we should think about supporting beginning and novice teachers. Mentoring and professional development are crucial in supporting beginning teachers, but these efforts often fall short of sustaining our beginning teacher workforce. If we want to really build the capacity of our beginning teachers and increase the collective efficacy of our teaching force, then we need to invest in models such as Multi-Classroom Teachers.

Study Impact on the Researcher

Three years ago, when I began this journey, I remember feeling the excitement of at least knowing what I wanted to study for a problem of practice. My school district had just been awarded a 21-million-dollar grant that included this innovative MCT model, and one of my very

best teachers had just been named as our MCT at my school. At the time, I thought this opportunity could not come at a more perfect time. For years, I had seen beginning teachers start their career, and some stayed the course even through the challenging obstacles; whereas, others decided to leave. I observed a multitude of variables that I felt contributed to these BTs being successful or fleeing after a few years, and I was just so excited to work closely with my MCT to really gain insight into how we can best support and prepare our beginning teachers.

Throughout this study, I have had the opportunity to collaborate, reflect, and refine practices. I observed an MCT figure out how best to utilize her role to enable beginning teachers to thrive. Her struggles, experiences, and unique perspective throughout this study provided me with a parallel lens through which I was able to view her growth comparatively with my own growth. It was during these reflective conversations over the last three years that I really began to understand the depth and complexity surrounding the challenges that our teachers face, both beginning teachers and master teachers. I've learned that one person cannot support others until they are provided with all of the tools and resources, but most importantly, they have to feel supported themselves. I learned that even the most highly-qualified teacher with the perfect skillset for the role of an MCT, still needs confidence and support as they undertake the challenge of a new position, and teaching teachers is very different than just teaching children. The first year of the MCT program was definitely a lot of trial and error, and we did so much reflection as we learned what worked and what did not.

Much like the journey for a beginning teacher, the journey for the veteran teacher making sense of her role as an MCT was filled with similar challenges and struggles. As I was observing BTs and MCTs adapt, transform, and grow through this study, I found that I was on a similar journey. I feel that the journey itself was more important than the destination, and it was by

reflecting on how we all navigated our own journeys that contributed to our overall growth. Interestingly, beginning teachers struggle to make sense of their own beliefs about teaching and learning as they negotiate and navigate different viewpoints and discourses of information. The journey was quite similar for the MCTs in this study as they were embarking on a new position that they had to figure out and learn along the way, making sense of the challenges they were facing while also supporting BTs through their challenges. As a scholarly practitioner on a similar journey, I found that one of the most critical aspects of human growth is reflection. Reflective thinking has to be cultivated and practiced because it is the way that we interpret and make sense of our experiences and build our own self-efficacy.

I think this past year has been the most rewarding, despite the pandemic causing an enormous disruption in our lives. I have been able to witness a beginning teacher that we hired from an intern, with no experience or confidence in teaching completely transform into a third-year competent, skillful, informed, and reflective teacher that now has the skillset to help support and mentor first- and second-year teachers. Observing her successful transformation after working with an MCT for two years just confirmed and solidified the research for me. I now feel prepared to use my research, resources, and these outcomes to advocate for and create solutions to address beginning teacher support.

The study drew upon the social cognitive theory of self-efficacy. According to Bandura (1997), self-efficacy is at the very core of human existence as people seek ways to exercise control to bring about desired results in their lives. Bandura (1977) held that personal self-efficacy beliefs seem to be the most important cause of human behavior. Through this study, I have learned that human behavior is the most challenging factor affecting teaching and learning, and increasing teacher's confidence in their abilities (self-efficacy) will result in favorable

outcomes for teachers and students. As a school leader, I will continue to do everything in my power to support the self-efficacy and growth of all teachers so that I can provide students with the best learning experience. I am so thankful for the support and mentorship provided to me as a beginning teacher through my career as a Principal, and I hope to continue my career by providing this same support to the teachers, students, and community that I serve.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER



EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Βρόδψ Μεδιγολ Σχιενγες Βυλδινγ • Μοαλ Στοπ 682
600 Μοψε Βουλε αρδ • Γ ρεν αιλλε, NX 27834
Ο φφχ 252-744-2914 • Φαξ 252-744-2284 •
rede.ecu.edu/umcirb/

□

Notification of Exempt Certification

From: Social/Behavioral IRB
To: [Colleen Burt](#)
CC: [Marjorie Ringle](#)
Date: 10/11/2019
Re: [UMCIRB 19-002045](#)
Beginning Teacher Self-Efficacy

I am pleased to inform you that your research submission has been certified as exempt on 10/11/2019. This study is eligible for Exempt Certification under category #2B.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: TEACHERS' SENSE OF SELF-EFFICACY SCALE (TSES)

Teachers' Sense of Efficacy Scale¹ (long form)

Teacher Beliefs	How much can you do?								
Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing		Very Little		Some Influence		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 C: STRUCTURED INTERVIEW PROTOCOL

Structured Interview Protocol Template

Title of study: Using the MCT Program to Address Teacher Self-Efficacy and Retention

Date & Time of Interview: _____

Location: _____

Interviewer: _____

Interviewee: _____

Position /Title of Interviewee: _____

Briefly describe the project to the interviewee.

Demographic information of interviewee:

Experience Level:

Beginning Teacher: BT 1, BT 2, BT 3 (circle one) other: _____

MCT: Years of Teaching Experience: _____

Teaching Assignment (grade level, subject): _____

School (s): _____

Is this the candidates 1st or 2nd year in the MCT Program Model? _____

Questions to be asked listed fully and in order:

1. Tell me why you chose to participate in the MCT program as either an MCT or a CoT?
2. In what ways do you feel the MCT program has contributed to your professional growth?
3. What do you feel is the most important component for the MCT model to be successful? Explain
4. What has been the most challenging aspect of implementing the MCT model and why?
5. Is there anything you wish you could go back and change about the process you have been through using the MCT model?
6. Where do you see yourself in the next 3 years? 5 years? (follow up if necessary to determine the likelihood of remaining in the classroom)
7. Self-Efficacy is your belief in your ability to guide students to success, it's your confidence in your abilities. How has your participation in the MCT program impacted your own self-efficacy?

APPENDIX D: BT SELF-EFFICACY INFORMED CONSENT

BT Self-Efficacy Informed Consent

Dear Participant,

I am a Doctoral student at East Carolina University in Department of Educational Leadership. I am asking you to take part in my research study entitled, "IMPACT OF THE MULTI-CLASSROOM TEACHER MODEL TO ADDRESS BEGINNING TEACHER SELF-EFFICACY AND RETENTION".

The purpose of this research is to gain insight into beginning teacher self-efficacy and how this impacts teacher retention. By doing this research, I hope to learn how to develop and improve beginning teacher self-efficacy through the use of the Multi-Classroom Teacher Program by conducting this research. Your participation is completely voluntary.

You are being invited to take part in this research because you have been identified as a beginning teacher participating in the MCT program during the 2019-2020 school year. The amount of time it will take you to complete this survey is approximately 15-20 minutes.

If you agree to take part in this survey, you will be asked to rate your opinion about a series of questions related to student engagement, instruction, and classroom management ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum. Questions include: "How much can you do to help your students value learning?" "How well can you respond to defiant students?"

This research is overseen by the University and Medical Center Institutional Review Board (UMCIRB) at ECU. Therefore, some of the UMCIRB members or the UMCIRB staff may need to review your research data. Your responses will be kept completely confidential and the information you provide will not be linked to you. Therefore, your responses cannot be traced back to you by anyone, including me.

Identifiers might be removed from the identifiable private information and, after such removal, the information could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you or your Legally Authorized Representative (LAR). Your information collected as part of the research, even if identifiers are removed, will not be used or distributed for future studies.

If you have questions about your rights when taking part in this research, call the University and Medical Center Institutional review Board (UMCIRB) at 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, call the Director of Human Research Protections, at 252-744-2914.

You do not have to take part in this research, and you can stop at any time. If you decide you are willing to take part in this study, check the AGREE box below and the research questions will appear.

Thank you for taking the time to participate in my research.

Sincerely,

Colleen Burt

Principal Investigator

* Required

APPENDIX E: CO-TEACHER EFFICACY SCALE IN CLASSROOM MANAGEMENT

1. Email address *

2.

Check all that apply.

AGREE

Co-
Teacher
Information

Please indicate the subject area you are working with your MCT. *

Co-
Teacher
Efficacy
Scale

ities running smoothly?

4. How much can your Co-Teacher do to get children to follow classroom rules?

11. 5. How much can your Co-Teacher do to calm a student who is disruptive or noisy?

Mark only one oval.

	1	2	3	4	5	6	7	8	9	
Nothing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A Great Deal

12. 6. How well can your Co-Teacher establish a classroom management system with each group of students?

Mark only one oval.

	1	2	3	4	5	6	7	8	9	
Nothing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A Great Deal

13. 7. How well can your Co-Teacher keep a few problem students from ruining an entire lesson?

Mark only one oval.

	1	2	3	4	5	6	7	8	9	
Nothing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A Great Deal

14. 8. How well can your Co-Teacher respond to defiant students?

Mark only one oval.

	1	2	3	4	5	6	7	8	9	
Nothing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A Great Deal

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APPENDIX F: MCT INTERVIEW PROTOCOL

MCT INTERVIEW PROTOCOL TEMPLATE

Title of Study: Impact of The MCT Model in Addressing Beginning Teacher Self-Efficacy and Retention

Date & Time of Interview: _____

Interviewer: _____

Interviewee: _____

Briefly review the study to the interviewee and describe the purpose of this follow-up interview with the MCTs.

|

Questions to be asked:

1. How has your experience as an MCT impacted you the most?

2. In what ways do you feel you have influenced the self-efficacy of the beginning teachers you have worked with?

3. What factors might have contributed to BTs who work with an MCT having a high sense of self-efficacy in the area of classroom management?

