EFFICACY MEETS INQUIRY: IMPACT OF LESSON STUDY AND REFLECTIVE INQUIRY ON THE DEVELOPMENT OF NOVICE TEACHER SELF-EFFICACY

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by

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ABSTRACT

Novice teachers often struggle to meet the demands of an expansive workload in their first years in the classroom. As reality sets in, district, school, parent, and communal needs often diminish the excitement of their first classroom, thus leading to low rates of teacher efficacy and early-career burnout. This is an educational dilemma because teacher vacancies are rising in schools such as Mockingbird High, a southeastern school with high poverty rates and varying racial demographics. This study aimed to determine if Lewis and Hurd's (2011) lesson study model, an instructional intervention, influences novice teacher efficacy during the transitional period from initial certification to early years in the classroom.

Using a concurrent triangulation mixed method design, I collected and synthesized data from participants' responses and Teacher Sense of Efficacy Scaled Survey ratings. By contextualizing the analyzed data, qualitative and quantitative data integration revealed perceptual changes in efficacy and a moderate significance on participants' overall teacher efficacy.

The study revealed a need for targeted support of novice teachers during their early years in the field. The findings indicate a need for collaborative professional learning focused on content-specific instruction. Content-specific professional development, reflective processing, and intentional time to improve professionalism with peers were noted as primary indicators of efficacy growth from lesson study intervention. My research contributes to the transitional period of novice teachers and the malleability of their teacher efficacy during their early years in the classroom.

DEDICATION

I dedicate this research to the memory of my Father

Timothy Mack Bryant (1954-2023)

“Mr. Fix-It”

For you paved the path for my fix-it approach to life.

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Thank you to my family for your loving support in seeing me through this process. My husband, Garrett, and my mother, Ginger, I am forever grateful for your love over my educational journey. To my daughters, Harper and Quinn, I am finally done with my homework. Now, it is time to celebrate!

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Lastly, I want to acknowledge my past, present and future colleagues and pillars of change. We know there is hardship in our field, yet we continue to seek the best for our students. Thank you for continuing on this journey. The work is not easy, but it must be done.

TABLE OF CONTENTS

LIST OF TABLES

Table Page

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION AND OVERVIEW

"…that is the centerpiece of my educational philosophy–me believing in them and letting them know that I believe in them…that's a lot in the word belief…I think believing in them is just the number one way to get them to believe in themselves. A lot of them have never heard those words from a teacher before, and that's so important."

–Andy, Novice Teacher

Impact. Six letters that can hold the weight of the world. Many teachers cite impact as their *why* for choosing teaching as a profession. Teachers change lives. Teachers inspire greatness. Teachers can make a difference. But, what happens when teachers do not feel supported? What happens when the teacher does not learn the power of reflection? What happens when teachers are not fully prepared to take on a classroom independently? A failed plight and the ripple effect of lacking impact ensues.

Teacher efficacy is one of the most significant determinants of student achievement in the classroom; however, it is often difficult to measure because of the psychological proportions of a self-efficacy assessment (Tschannen-Moran & Hoy, 2001). In the early work of Bandura (1977), the self-efficacy theory determined that when faced with obstacles and aversive experiences, personal efficacy would select the coping behaviors to overcome. People's beliefs in themselves and their motivations are based on their comfort level rather than what's actually true (Bandura, 1997). The growth of personal agency and intentionally overcoming adversity lends itself to factors that operate together to manage situations (Bandura, 1997). In the educational realm, teacher efficacy is the ability of a teacher to perceive they have control of learning outcomes and behavior in their classroom (Skaalvik & Skaalvik, 2007; McCoach & Colbert, 2010).

Introduction to Problem of Practice

The development of self-efficacy can make or break a novice teacher. With administrative, curricular, student, and parent-driven demands, the first year is an overwhelming experience with many challenges–there is no middle ground between success and failure.

Over 40 years ago, the Rand Cooperation assisted in the conceptualization of teacher efficacy when two items were added to an extensive teacher questionnaire (Armor et al., 1976). The term has morphed over four decades, but the framework remains consistent. In an interview with researcher Anita Woolfolk Hoy, she states, "Teachers who set high goals, who persist, who try another strategy when one approach is found wanting—in other words, teachers who have a high sense of efficacy and act on it—are more likely to have students who learn" (Shaughness, 2004).

Tschannen-Moren and Hoy (2005) suggest that student teaching and the first two years are the most critical periods for the development of teacher efficacy. Efficacy rates correlated to the level of support received within the first years in the classroom (Hoy & Spero, 2005). If help is not available in the first year, there is a possibility that the teacher's efficacy rate will decline (Hoy & Spero, 2005). Novice teachers often enter the profession budding with excitement and confidence in the classroom. However, their enthusiasm decreases once they begin working with students and dealing with the daily demands of navigating planning, parents, and administration (Keese et al., 2022). Once the teacher fully engages in the profession's daily routines, their in-house support, or lack thereof, is a primary factor in their assiduousness as educators (Keese et al., 2022).

Efficacy impacts teachers' overall experience in the classroom, including professional growth. Professional development opportunities that impact long-term instructional quality include sessions regarding supportive classroom climate, classroom management, and cognitive activation (Künsting et al., 2016). Hildebrandt and Eom (2011) noted inexperienced teachers have a higher demand for professional learning because of how they perceive their teaching ability. Moreover, they are more motivated than experienced teachers to participate in professional learning opportunities. McMillian et al. (2016) note four personal variables contributing to professional learning engagement–teachers' self-efficacy, conceptions of learning, prior learning experience, and teaching experience. Ongoing professional development structures and leadership systems within the school opens multiple avenues for growth; however, teachers with low rates likely are disconnected from their own needs as professionals (Scribner, 1999). Professional support opportunities are scarce in communities such as Mockingbird, South Carolina. These more significant contextual problems, in turn, influence teachers' self-efficacy in the classroom, impacting the larger school community.

As the national teacher crisis looms, the statistical loss of educators is frightening. According to The U.S. Bureau of Labor and Statistics, there has been a net loss of 600,000 educators leaving the field since January 2020 (States News Service, 2022). Furthermore, a recent survey by the National Education Association noted that 55 percent of teachers said they were planning to leave the field (States News Service, 2022). Many teachers report their reasons for leaving include inconsistencies in the teaching platform due to COVID-19, rising demands for mental health for students and teachers, mandated curricula, and loss of control in their classrooms (States News Service, 2022). COVID-19 shutdowns greatly affected schools for two

years; however, teachers took the brunt of the work when students returned face-to-face in the classroom. Educational leaders note learning loss and mental health matters as significant concerns after the pandemic shutdown. These concerns and the effects of the Great Teacher Resignation will continue to infiltrate the classroom for years.

A rise in teacher vacancies throughout South Carolina has led to higher rates of first-year and, alternatively, certified teachers entering the classroom. According to the 2022-2023 South Carolina Teacher Supply and Demand Annual Report from the Center for Educator Recruitment, Retention, and Advancement (CERRA), approximately 1,473.55 total vacant positions are reported for the 2022-2023 school year (CERRA, 2022b).

Alternative certification routes are rising to fill the void. With significant retirement rates and the Teacher and Employee Retention Incentive (TERI) program ending, more teachers are leaving the profession than in years past. Alternative certificate programs such as Program of Alternative Certification for Educators (PACE), Teachers of Tomorrow (ToT), Teach for America (TFA), Alternative Pathways to Educator Certification (APEC), etc., were implemented to fill the additional teaching vacancies (SCDE, 2023). Teachers who completed a traditional four-year preparation program were likelier to stay in the field, whereas nontraditional routes have lower teacher retention (Fuller, 2014). A summary of data reported by CERRA in the 2022-2023 Supply and Demand Report is below (See Table 1.1).

Table 1.1

CERRA Supply and Demand, Summary Data, 2022-2023

Supply & Demand Data (in FTEs)	2022-23	2021-22	2020-21	2019-20	2018-19
Positions (authorized FTEs, excluding vacancies)	55,605	56,166	54,961	52,525	51,995
Departures	8,321	6,927	5,996	6,650	7,339
Early-Career Departures (<5 years teaching experience)	3,015	2,390	2,551	2,367	2,596
Transfer to another SC district	2,187	1,569	1,346	1,670	1,998
Retirements	1,444	1,278	1,015	1,190	1,937
New Hires	8,005	7,014	6,308	6,709	7,600
SC graduates	1,336	1,569	1,490	1,526	1,833
Alternative certification	825	747	665	637	647
Transfer from another SC district	2,397	2,032	1,746	2,058	2,319
Transfer from another SC district	2,397	2,032	1,746	2,058	2,319
Vacancies	1,474	1,063	699	556	621

(CERRA, 2022b)

The rising number of novice teachers correlated to lower classroom efficacy rates, impacting the school culture of high-poverty-stricken areas such as Mockingbird, South Carolina. Since the COVID-19 epidemic in 2020, Mockingbird High School (MHS) has noted a significant decrease in continuing contracted teachers. The rise in induction status implies a need for a supportive environment for induction teachers. Induction teachers are defined as educators progressing through their first or second year as full-time classroom teachers. The National Education Association (NEA) refers to teacher induction as a minimum two-year phase where the educator should perform the necessary skills to receive full licensure (NEA, 2017). However, in special circumstances, a district may prolong the induction phase up to five years at its

discretion. According to the requirements established by the South Carolina State Board of Education, a teacher is eligible for a continuing contract once they have completed the formal evaluation process and met the criteria set by the local board (South Carolina ADEPT Stat, 2012). South Carolina Education Board requires a three-year evaluation before the teacher is issued a continuing contract. Due to the high rate of induction teachers at MHS, lack of classroom management, missed learning opportunities, and low expectations are continual issues amongst faculty. Inconsistency in these areas has led to more significant contextual matters with the veteran faculty in the building. During this time, mentor teachers are stretched too thin and unable to navigate working with their students and supplying daily assistance to their mentees. In addition, COVID-19 shutdowns culminated in more stressors in navigating inconsistent instructional platforms and the unforeseen needs of students returning face-to-face. Survey data noted that teachers are stressed and often unable to add one more task to their responsibilities. The role of a mentor is no different. This year, MHS mentors expressed that they were not as supportive as previous years due to time and job demands. The lost mentoring time has impacted the efficacy of novice teachers.

Informal survey data indicated that novice teachers (less than three years of teaching experience) rank the lowest overall in self-efficacy. It is often difficult to narrow down what influences teachers to consider themselves effective in the classroom and how the whole collective body impacts the teacher. Informal interviews and walk-through observations revealed that first-year teachers had difficulty handling problematic situations with students and employing consistent classroom management strategies. A variable such as their experience affects efficacy ratings (Ma & Cavanagh, 2018). Furthermore, Gallavan (2010) notes that

valuing cultural diversity during teacher preparatory work and field experiences yields higher efficacy rates in early-career teachers. Early career teachers produce the lowest self-efficacy and report that collaboration is the most influential type of professional learning (Durksen et al., 2017).

Addressing teacher burnout and attrition is essential for the future of South Carolina public education. In the following sections, I will discuss research on the effects of a lesson study cycle on teacher efficacy. I intend for lesson study cycles to support teachers with tools for reflection and identifying instructional improvement. Lesson study provides the support to build teacher capacity with a correlation to increased teacher retention. This research study aims to find how lesson study can 1) improve teacher self-efficacy, 2) affect the school's professional learning culture through collaboration, and 3) improve teaching strategies responsive to the needs of the specific learners at Mockingbird High School.

Research Rationale

This study aims to determine the impact of lesson study on novice teachers' self-efficacy, specifically in a setting where the intersectionality of race and poverty impacts the student population. My research is informed by Bandura's Social Cognitive Theory with triadic reciprocality and investigates the impact of reflective processing on an efficacious teacher. This research has implications for teacher retention, burnout, and the need for a site-based professional development model for novice teachers. A model such as lesson study can provide novice teachers with a personalized progression for instructional improvement. In the conclusion of the research rationale, I will describe how low teacher efficacy affects marginalized students in South Carolina and how the current ADEPT program doesn't provide teachers with adequate

support for site-specific needs. An instructional improvement approach can assist novice teachers in a cycle in which collaboratively planned lessons are the focus of inquiry on effective teaching. This research intends to strengthen equitable learning outcomes during the transitional period from teacher preparatory programs or alternative certification routes and the first year in the classroom.

Efficacy

Early works of Bandura (1977) express that self-efficacy directly determines an individual's success. Today, psychologists acknowledge that self-efficacy is an essential developmental construct in the history of psychology (Urdan, 2006). Rooted in the psychological construct of Bandura's social learning theory, self-efficacy is a person's central beliefs and capabilities that control their functioning and life events (Bandura, 1991). A person's efficacy is established from the four significant information sources: performance accomplishments, vicarious experience, verbal persuasion, and psychological states (Bandura, 1977). Ultimately, efficacy is the individual's self-regulation and ability to maneuver obstacles.

According to clinical psychologist Bandura (1991), "People's beliefs in their efficacy influence the choices they make, their aspirations, how much effort they mobilize in a given endeavor, how long they preserve in the face of difficulties and setbacks, whether their thought patterns are self-hindering or self-aiding, the amount of stress they experience in coping with taxing environmental demands, and their vulnerability to depression" (p. 257). Self-efficacy relates to the self-regulation of the human subject and the belief system and cognitive processes the individual obtains during different stages in life (Bandura, 1991). Perceived notions of successes or failures, in turn, regulate their idea and state of efficacy. Individuals who perpetrate

self-doubt are easily discouraged from failure, whereas those who are confident in their capabilities persist until they succeed (Bandura, 1991).

Teacher Efficacy

In the theorized, highly studied contextualized learning theory, teacher self-efficacy is rooted in Bandura's social cognitive theory and Rotter's (1966) attribution-based theory of locus of control (Zee & Koomen, 2016). The psychology frameworks emphasize human agency–the ability of individuals to control actions that affect their lives (Bandura, 1977). Rotter (1966) theorized that an individual's perceptions of internal and external outcomes impacted the overall reinforcers and responsiveness to their environment–the locus of control (Ho & Hau, 2004).

The first measure of teacher self-efficacy took place in the 1970s when the Rand Cooperation added two questions to a survey to assess teachers' beliefs about their abilities to positively affect a child (Armor et al., 1976). The assessment has changed over the years, but presently, Tschannen-Moran and Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES) is most commonly used to measure the dimensional constructs of instructional practice, classroom management, and student engagement (Zee & Kooman, 2016).

Self-efficacy is situational. Individualized past experiences and new constructs from observing the performance of others can modify a person's efficacy (Bandura, 1997). Early research by Rand studies found that teachers' self-efficacy directly determines student motivation and achievement (Armor et al., 1976; Soodak & Podell, 1996). Hoy and Spero (2005) note that personal efficacy influences teaching efficacy. Personal efficacy is the teacher's ability to be confident, whereas general teaching efficacy is the power to reach difficult children (Hoy & Spero, 2005). Their ability to perceive control over learning outcomes and behavior in their

classroom directly relates to their sense of teacher efficacy (Skaalvik & Skaalvik, 2007; McCoach & Colbert, 2010).

Characteristics of High and Low Efficacious Teachers

According to Ross and Bruce (2007), highly efficacious teachers tend to attribute the following factors: (a) take risks by trying new teaching strategies, (b) utilize classroom management strategies that stimulate student autonomy, (c) attend to the needs of lower ability students, (d) modify student's perceptions of their academic abilities, and (e) teacher persistence. Teachers with high efficacy rates view themselves as competent instructors who can reach the most challenging students. High efficacious teachers hold students to a higher standard and spend more time with struggling learners to meet their needs (Good & Brophy, 2003). Their persistence and grit to be the change agents for their students is the ultimate determinant in their ability to overcome all obstacles they may face in the classroom.

Low-efficacious teachers yield drastically different expectations for students of lower ability or socioeconomic status (Ashton et al., 1983; Warren, 2002). Low-efficacy teachers tend to give more attention to higher-achieving students and less to lower-ability students (Ashton & Webb, 1986). Moreover, Warren (2002) found that SES directly impacts teacher expectations and beliefs of students. Lowered expectations and efficacy rates were relative in teachers working in high urban, impoverished areas; however, researchers reported that teachers of color do not guarantee higher efficacy development and higher expectations for students of color (Darden, 1991; Warren, 2002). Darden (1991) cites that color is not a determinant of cultural sensitivity.

Student Achievement

Self-efficacy is rooted in the individual's belief that they can manage and follow through (Bandura, 1997). When examining efficacy concerning education, collective efficacy is one of the most significant determinants of student achievement at a 1.57 effect size (Skaalvik & Skaalvik, 2007; Hattie, 2012). Kunsting et al. (2016) found that teachers' self-efficacy is a long-term predictor of overall instructional quality through the variables of "supportive classroom climate, effective classroom management, and cognitive activation" (p. 1). Low levels of collective teacher efficacy are rooted in teachers' responses to professional development—teachers with high self-efficacy sought out knowledge through new professional development opportunities. In contrast, low-level efficacious teachers are detached from their own needs as professionals (Scribner, 1999). Grade level, content knowledge, and teaching experience are predictors of self-efficacy (Yoo, 2016). Irvin et al. (2010) found that rural schools have higher student-teacher ratios and lower achievement rates. These systemic issues lend to the school's overall effects on the larger community. With students not receiving an adequate high school educational experience, they are not likely to be contributors to the community in generations to come.

Post-COVID Implications

With the rise of COVID-19 in 2020, teacher preparation programs varied on mentorship and feedback for student teachers. Novice teachers entered the field with little to no experience in their field studies. Teacher preparation programs differ significantly in field experiences, capstones, and coursework; however, they are vital to teachers' effectiveness within their first year (Raymond-West & Range, 2020). Furthermore, irregularities in the teaching platform led to

more inconsistency in teaching structures. VanLone et al. (2022) determined that teachers' self-efficacy can benefit from programs that increase support in classroom management, student engagement, and instructional strategies, particularly those teachers with interrupted student teaching experiences due to COVID-19. By contributing to a lack of experience and teacher education programs, novice teachers are likelier to report lower levels than experienced teachers (Alasmari & Althaqafi, 2021).

Teacher Efficacy's Impact on Marginalized Students in South Carolina Social and Historical Context of South Carolina Public Schools

Although South Carolina is rich in history, the public education sector is rooted in the implications of racial discrimination toward students of color. These types of racial discrimination, often coined "aversive racism" or "implicit bias," are challenging to identify or rectify because they are often subtle (Sue et al., 2007). After Reconstruction, South Carolina public schools remained segregated under Jim Crow laws (Allen, 2019). Between the 1920s and early 1950s, continuous federal and state court rulings were tactics to uphold segregation in public education (Allen, 2019). In the *Briggs v. Elliott* (1951) case, South Carolina Federal Judge J. Waties Waring claimed in his dissent that "segregation is *per se* inequality." His statement was one of the first court rulings that challenged school segregation. 1954 the *Brown v. Board* ruling required South Carolina schools to desegregate based on color. However, South Carolina litigation, federal judges, and governors stalled the full integration of public schools until 1963, when two of the largest public colleges (Clemson College and University of South Carolina) and the first public school were desegregated (Cox, 1996; Lowe, 2020).

South Carolina's public school funding could not circumvent the implementations of racially rooted federal and state court rulings. After the 1954 court ruling, South Carolina rural districts continued to fight for equal education opportunities by challenging the state's funding system (Allen, 2019). South Carolina created various equalization programs to assist in funding public schools.

Race and Poverty

Race and its role in American education continue to spur debates on cultural inclusivity in American schools. Middle-class community programs and parent advocacy groups address the cultural divide, yet, as noted by Ogbu (1992), we need to go beyond middle-class programs and advocacy and affiliate with diverse communities. In years past, public education has adapted few curricula and programs to address cultural diversity in schools. As Milner (2020) outlined, the Opportunity Gap Framework details five principles to assist educators when discussing race-related educational gaps: reject colorblindness, understand cultural conflicts, recognize the myth of meritocracy, and disrupt low expectations and deficit mindsets and counter context-neutral mindsets. Understanding opportunity hoarding, a body of research that perpetuates inequalities across social groups and in education, is beneficial when studying organizations that may have racially diverse populations (Diamond & Lewis, 2022; Tilly, 1999). Ogbu (1992) notes changes in the core curriculum, multicultural education, cultural forces, and differences in schooling as variables that impact inclusivity.

Racial disparities in the American educational system impact students' equitable access (Taylor et al., 2018). The *Abbeville v. South Carolina* (2014) litigation on school funding shed light on the inequitable disparities of the eight school districts represented. Furthermore, the

claim sheds light on the obligation of those in power (superintendents and school leaders) to view themselves as advocates and change agents for their communities (Tran et al., 2021). The role of the superintendent is evolving and now includes advocating for students through the lens of social justice, especially the disenfranchised (Tran et al., 2021).

The intersectionality of poverty with race and class is bound to multiple social injustices among economically marginalized students (Gorski, 2018). Current models relate poverty to race, class, or gender; however, according to Gorski (2018), "The reality is that all these identities and their respective forms of discrimination are intertwined into one big tangled web of injustice" (p. 47). For decades, educational research has continued to review the effects of generational poverty and how it can directly affect student outcomes. Students with low socioeconomic status enter school less prepared and maintain low rankings throughout their K-12 career (Rutkowski et al., 2018).

Historical implications of education policy and systemic racism continue to affect public education. The lingering effects of decades-old systemic racism play a part in the daily struggles of South Carolina educators. Despite the historical implementation of marginalized populations, South Carolina's public education does not exist in a vacuum. The impact of race and poverty leads to a broader discussion on the significance of social contexts in South Carolina's public education system.

Impact on Teacher Efficacy

Various factors, including race and poverty, can influence a teacher's sense of efficacy. As expressed earlier, these two factors and their implications on South Carolina's public education do not exist in a vacuum. Lower expectations, biases, and higher teacher turnover rates

lead to lower rates of teacher efficacy within these types of schools. A study by Gagnon and Mattingly (2014) indicated that districts with high poverty rates have higher ratios of new teachers. This cycle creates an educational disadvantage and lower achievement rates for these students. According to Hosford and O'Sullivan (2015), in-service teachers in schools of poverty or rural towns may exhibit lower expectations and beliefs about students' capability, influencing student outcomes. Similarly, studies discovered that racial attitudes and biases might hinder the student achievement of teachers with lower efficacy rates; teacher expectations of historically marginalized students are lower than those teaching their White counterparts (Garza & Garza, 2010; Pang, 2002; Soodak & Podell, 1994). Moreover, teacher involvement directly impacts African-American students' academic engagement (Tucker et al., 2005).

Deficit and structural ideologies fall on a continuum of ideological perspectives affecting new classroom teachers (Gorski, 2018). Studies find that educators tend to lean towards deficit ideology concerning those living in poverty (Mulvihill & Swaminathan, 2006; Prins & Schafft, 2009). Structural ideologists believe poverty results from social injustices and inequalities (Gorski, 2018). Structuralists believe educators should acknowledge the conditions of people experiencing poverty and their abilities to participate in their children's education due to financial constraints, transportation, and work schedules.

There is a growing mismatch between teachers entering the classroom and the students they teach. Teachers are predominantly White, female, and monolingual, whereas students are more likely multilingual and multi-ethnic (Zumwalk & Craig, 2005). Traditionally, teacher preparation programs are not grounded in the intersectionality of urban studies, Black education history, or cultural studies; instead, programs include a course on diversity or multicultural

education (Gay, 2002). As noted by Gay (2002), culturally responsive teaching is “using the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively” (p. 106). To disrupt marginalization, teachers must understand their students' cultural and ethnic ways before they can engage them in learning (Gay, 2002). Love, care, and respect must be at the center of learning to ensure that curriculum and instruction can exist (Johnston et al., 2017).

Professional development topics may include teaching strategies that impact a diverse student population and site-specific needs. Expanding their beliefs to reflect on their perceptions may lead to a more inclusive learning environment (Gallavan, 2007). Novice teacher growth can align by accepting, acquiring, and applying knowledge for equity for all learners (Gallavan, 2007). Lesson study provides a systematic method of improvement by recognizing the cultural composition of the students and defining a solution to instruction that is responsive to students' needs—a direct impact on the teacher’s cognitive capacity to overcome adverse experiences in the classroom (Collet, 2019). By aligning lesson study to novice teachers’ professional development repertoire, there is more opportunity to foster a sense of efficacy to create equitable outcomes for the students they serve.

Research Question

This study addresses the following research question:

1. What role does lesson study have on novice teachers’ self-efficacy development?

Definitions of Relevant Terms

ADEPT—South Carolina’s system for assisting, developing, and evaluating professional teaching (SCDE, 2023).

Alternative Certification—a fast-track certification program for potential educators with a bachelor's degree or higher.

CERRA—South Carolina's Center for Educator Recruitment, Retention, and Advancement, established in 1985 to assist in teacher recruitment efforts.

Certification—the process of receiving licensure from the South Carolina Board of Education.

Induction program—a mandatory two-year cohort program that includes structured activities and formal meetings for teachers on an induction contract.

Induction teacher— refers to teacher induction as a minimum two-year phase where the educator should perform the necessary skills to receive full licensure (NEA, 2017).

Instructional Coaching—mentor teacher that works with teachers to improve the quality of their lessons and the quality of the student's education.

Intervention—the act of improving a situation

Lesson Study—Japanese model of professional development for teachers to collaborate to plan, execute and reflect on how to improve instructional practice (Collet, 2019)

Locus of Control—the degree to which people believe they can control the outcomes of their lives.

Mentoring—influence, guidance, and direction given to colleagues

Poverty— is when personal income cannot provide fiscally for a person's basic needs.

Professional Development—continuing education for teachers that entered the workforce.

Reflective Inquiry on Practice—a thinking process in which individuals closely examine their own experiences to better understand events and actions through a supportive interpersonal or group situation (Schön, 1983).

Self-efficacy— an individual's belief in their capacity to reach specific goals (Bandura, 1997).

Social Cognitive Theory—people can learn from self-reflection and self-influence (Bandura, 1997)

Social Learning Theory—people can learn new information and behaviors by watching others (Bandura, 1991).

Teacher Attrition—the rate at which new teachers leave the profession.

Teacher Burnout—work-related stressors that cause educators to leave the profession.

Teacher Capacity—intrinsic capabilities for teachers to lead curriculum and instruction delivery.

Teacher Retention—keeping teachers in the workplace and reducing turnover.

Teacher Self-Efficacy—a teacher's belief they can handle tasks, obligations, and challenges related to their professional work.

Traditionally Certified Teachers—are graduates from a university's certification program with a degree in education.

Research Site

This research study occured at Mockingbird High School (MHS) in a suburban portion of Mockingbird County, South Carolina. Situated near the coast of South Carolina, MHS opened in 1984 after the merger of Sparrow High School, a predominantly White high school, and Cardinal

High School, a prominently African American high school, in Mockingbird County School District (MCSD).

MHS serves roughly 934 students in grades 9-12. The student demographics are as follows: 43% Black, 40% White, 15% Hispanic, and 2% other (PowerSchool, 2022). MHS has not been deemed a federally mandated Title 1 School; however, a high population (69%) of students live as a Pupil in Poverty (PowerSchool, 2022). MHS employs 73 certified teachers; 20.5% are induction teachers with less than three years of experience. MHS's extracurricular activities include various athletics, NJROTC, national and local clubs, and a fine arts department. MHS houses the MCSD Career Center, and students can enroll in one of the nine career and technical education (CTE) certification programs. MHS offers four Advanced Placement courses on campus with additional Advanced Placement courses online; students can enroll in dual enrollment courses through Mockingbird Technical College in Mockingbird, South Carolina.

The positionality of MHS in the landscape of Mockingbird County is relevant to this study. Mockingbird High is considered a community school, with the community playing a significant role in the success of the whole child (Santiago et al., 2012). Partnerships amongst local businesses, city officials, and the school offer various resources to assist students in Mockingbird. Community building and relational engagement are prerequisites and recommended for classroom practices to build self-esteem, foster self-discipline, and realize potential (Santiago et al., 2012). Of Mockingbird, 22% of people live below the poverty line, and the median household income is $37,323 (U.S. Census Bureau, 2022). However, it is essential to note that the town only includes the seven square miles that center in one area of Mockingbird County. A group of smaller communities feeds into MHS from the outskirts of town. All four

attendance zones of MCSD are vastly unique. MHS enrolls the largest student population in the district. The proximity to the district office and the flagship high school is important. The development of instructional programming is essential for district-wide improvement.

MHS is the prime location for a study on novice teachers' self-efficacy. Over the past three years, teacher attrition has been an ongoing issue with MCSD. Due to economic factors and location, MCSD often hires novice teachers, but they consider leaving for an opportunity close to home or with higher pay. This issue has remained with the onset of COVID-19. The ongoing systemic problem of training new teachers is an ongoing task for school administration and mentors in the building. This research relates to my daily role and responsibility as an assistant principal at MHS. MHS does not employ an on-site instructional coach to work alongside new teachers; however, I work closely with these teachers to ensure their success in the classroom. Through daily interactions, I can see their discourse on pedagogical approaches and implementing instructional strategies for student learning. In the past, the department lead and mentors were tasked with training new teachers.

Lesson study, the methodology intervention for this research study, aligns with the student population's needs. Due to MHS's positionality as an impoverished and racially diverse school, collaborative professional development can focus on how to equip novice teachers with the tools for equitable outcomes in their classrooms; in turn, this opportunity bridges the gap between their pre-service studies and the implementation of equitable learning opportunities in the classroom—from theory to practice.

Proposed Significance and Conclusion

The data collected in this research study explores teacher efficacy to determine if lesson study can positively impact teacher efficacy. Research concerning support for teacher burnout and attrition is essential for the future of South Carolina public education. Collaborative professional development can help build teacher capacity and relieve teacher retention.

Implication for Practice

In the field of education, teachers are the heart of the system. Preservice training requires teachers to submit detailed lesson plans, closely monitored classroom experiences, and lengthy mentorships with cooperative teachers; however, their first year in the classroom is far from the high accountability model experienced in preservice training. District and site-based administration provide support by assigning a mentor teacher. However, in some cases, mentors do not possess the competencies to cultivate reflection as a form of self-evaluation in adult learners (Aspfors & Fransson, 2015). Lesson study cycles, rooted in reflective inquiry, are a proactive way to change the narrative during the formative years in the classroom.

By studying self-efficacy, school leaders can assist in developing a teacher's capacity during the most malleable times in a teacher's career. This impact is long-lasting in education, especially with the shortage of teachers entering the classroom. By reflecting on and personalizing novice teachers' needs, growth can exist. Teachers are more likely to remain in the field if they can balance the school requirements, classroom management, and framework for effective instruction in the first year. By understanding the effects of teacher efficacy, there is potential for meaningful change in the following areas:

- Build teacher capacity by learning steps to becoming a reflective practitioner and adopting a growth mindset
- One-on-one instructional coaching with student-centered outcomes
- Teacher self-actualization to improve self-awareness and overall impact in the classroom
- Positive influence on student achievement by creating classrooms with high levels of expectations and motivation

Implications for Research

Research implications include but are not limited to teacher retention and the programs or methods of retaining teachers in South Carolina schools. The long-term effects of teacher efficacy lack research in longitudinal studies (Hoy, 2020; Künsting et al., 2015). The cross-section between years of service and teacher effectiveness makes longitudinal studies challenging (Klassen et al., 2011; Zee & Koomen, 2016). The impact of teacher efficacy on student achievement saturates the education field, but many of the case studies are a year's worth of research (Chong & Kong, 2012; Hotzberger et al., 2013).

Research around teacher efficacy is vast. Various attributes obtained from increased efficacy are just as important; however, researchers must distinguish the overall impact of the collective group or the individual to determine if collective efficacy or individual is worth exploring. Collective efficacy refers to the sense of efficacy as a whole functioning body that can result in high effectiveness rates and research concerning motivation and social persuasion (Durksen et al., 2017; Maddux & Gosselin, 2012). In addition to efficacy, this research affects

coaching outcomes and teacher retention. Additional recommendations for future research include but are not limited to:

- Cycles of improvement to impact student achievement of first-year teachers
- Measuring teacher efficacy of traditional certification route teachers and alternative route certification teachers
- Self-actualization effect regarding equity in school communities that are largely affected by race, rurality, and poverty
- A longitudinal study of teacher efficacy (year 0-15)
- Exploratory research on the effectiveness of preservice certification routes
- Program evaluation for equity of non-traditional teacher certification programs (e.g., PACE, ToT, TFA, and APEC) as it relates to impacting teacher efficacy
- Program evaluation of traditional education certification routes as it relates to impacting teacher efficacy

Implications for Education Policy

Article 40, Chapter 26 of Title 59 of the 1976 South Carolina Code of Laws notes that each local school district must provide comprehensive guidance and assistance throughout the induction year (South Carolina ADEPT Stat, 2004). The plan must comply with the State Board of Education's guidelines for induction teachers and be approved before implementation (South Carolina Induction and Mentoring Program Guidelines, 2017). ADEPT programs, best, in theory, are problematic in small districts such as Mockingbird County. There is little differentiation between traditional route certified teachers and alternatively certified ones. Moreover, ADEPT

coordinators and assigned mentors may lack expertise in best practices for each specialized content area in the secondary realm. The ADEPT program only requires induction teachers to receive a minimum of one complete classroom observation per semester (South Carolina Induction and Mentoring Program Guidelines, 2017). One-on-one coaching is typical of ADEPT mentoring support. This study may shed light on collaborative partnerships and shared **e**xperiences amongst induction teachers. Additional recommendations for educational policy refinement include but are not limited to:

- Required professional development on coaching training for administrators, coaches, and mentors that directly work with induction teachers
- State-recommended ADEPT program/mentoring with a focus on building teacher efficacy and equitable learning environments for traditionally marginalized students
- State-recommended professional development focused on reflective inquiry for school coaches and administrators
- Allocate funds for additional professional development to target the teacher's deficits at the end of the induction year (e.g., classroom management, instructional strategies, building positive relationships, etc.
- Advocate reducing teacher workloads during the induction period to focus on the transitional period between pre-service and first year in the classroom

CHAPTER TWO

METHODS

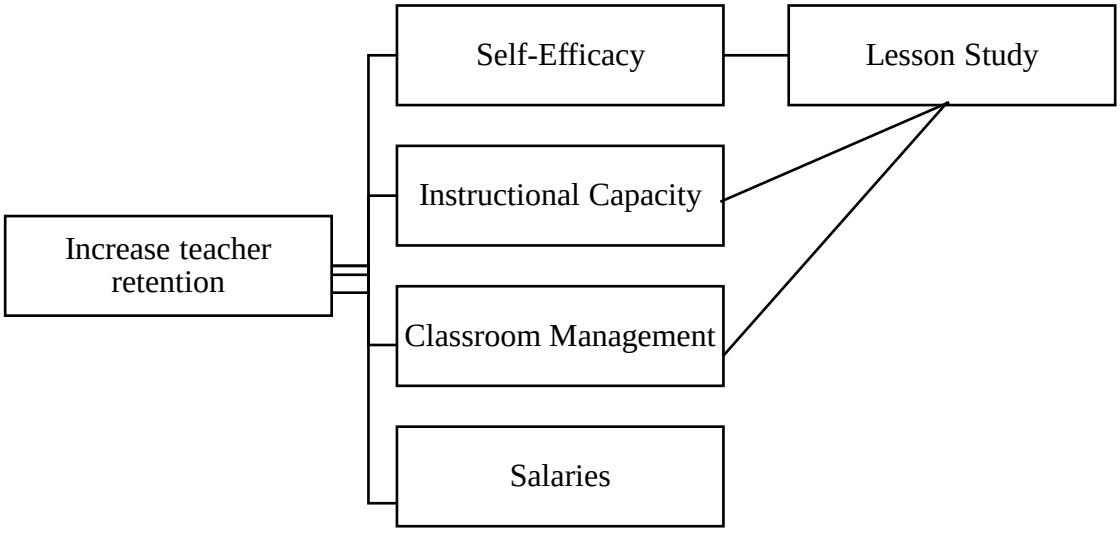
"The study made me realize that I could do more, and I could push them more just by going and watching my other colleagues teach and see the things that they do, and try to implement that in my classroom."

Brooke, Novice Teacher

Improvement science calls for a needs assessment to determine the action steps necessary to move forward in the improvement cycle. A driver diagram is a backward design tool to meet the overall aim or goal. The driver diagram illustrates that to increase teacher retention, we must analyze self-efficacy, instructional capacity, classroom management, and salaries (see Figure 2.1). To disrupt the churn of early career teacher departures, implementing lesson study and, in turn, its impact on self-efficacy can change the narrative. Collaborative support as a means of instructional improvement and effective collaboration can be challenging, but lesson study can bridge the gap between independence and interdependence (DuFour & Marzano, 2011).

Figure 2.1

Driver Diagram



This research is rooted in continuous improvement and informed by improvement science. Improvement science is a theoretical, systematic, problem-solving approach to improvement (Christie et al., 2017). Rapid improvement cycles determine the effectiveness of the change action and the need for modification. The ultimate goal of improving science is to "increase positive outcomes and decrease negative outcomes" (Hinnant-Crawford, 2020, p. 26). By collecting data and analyzing the effects of the intervention or adjustment, the researcher can determine if the action created a positive or negative outcome on the Problem of Practice (PoP).

Actionable PoPs are complex and take researchers time to analyze the root cause. According to the Carnegie Foundation's definition, a high-leverage problem includes the following: it consumes substantial resources, has the potential for variable outcomes, and, if addressed, would result in better efficiency and effectiveness (Byrk et al., 2015). Improvement science practitioners address the PoP by using various techniques to analyze the root cause of the

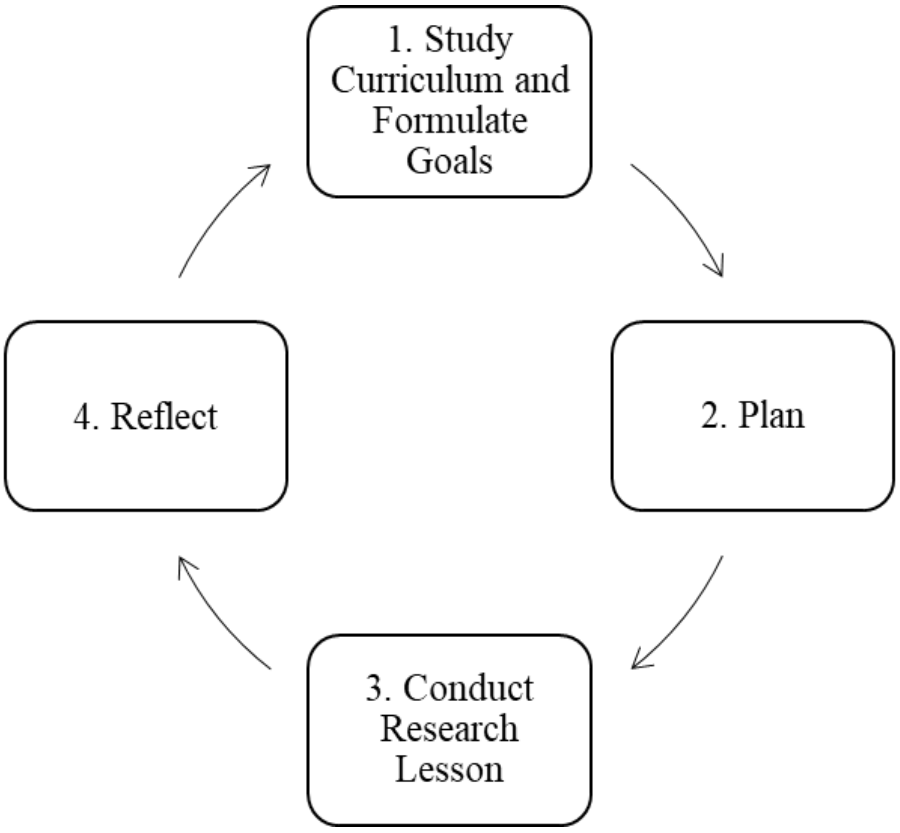
problem; these tools include but are not limited to fishbone diagrams, driver diagrams, and semantic mapping (Perry et al., 2020). Crafting and narrowing the PoP helps the practitioner determine where they have the most influence to address strategies for improvement (Perry et al., 2020).

During the root cause analysis, I noted that teacher efficacy is most malleable within the first three years of teaching. The pressure of the induction year includes learning the school's culture, balancing professional and personal lives, learning methods of teaching and learning, and the possibility of implementing new curricula (Fitchett et al., 2018). Professional development in a teacher's early career can lead to higher teacher attrition rates and impact their decision to stay in the profession longer (Helms-Lorenz et al., 2018). The transitional year between preservice and the first year of teaching is the most vulnerable developmental period for teacher self-efficacy (Fitchett et al., 2018).

As a practitioner, I can offer a well-developed plan to improve MHS' organizational system by addressing the needs of first-year teachers through organized collaborative professional development. Rooted in improvement science, I altered novice teachers' professional development by conducting lesson study cycles. Teachers planned, observed, evaluated, and refined lessons to gather evidence of best practices (see Figure 2.2). Lesson study cycles aim to provide educators with the tools of a reflective practitioner by encouraging teaching methods for a diverse student population to ensure equitable outcomes. Ultimately, this professional development focused on teachers; however, it addressed student achievement by increasing teacher efficacy and cultural awareness (Hattie, 2012).

Figure 2.2

Lewis & Hurd's (2011) Lesson Study Cycle



Lesson Study Model

Lesson study originated from a Japanese inquiry model of professional development *jugyou kenkyu*, translated to lesson study in English (Stigler & Hiebert, 1999; Yoshida, 1999). American researchers Stigler and Hiebert's (1999) study described in *The Teaching Gap* provided valuable insights into how American schools adapted iterative improvement cycles. A lesson study cycle includes a group of teachers that work closely together to design, implement, test, and improve several "research lessons" (Stigler & Hiebert, 1999). An expert teacher delivers research lessons, while the group debriefs after the delivery of the lesson.

Teacher professional development topics vary widely in methodology and delivery formats (Kennedy, 2016). Desimone (2009) conceptualized that professional development must embody a relationship between teachers' knowledge and beliefs, classroom practice, and student outcomes. The model distinguishes five features for effective professional development to occur: (1) content-focused, (2) active learning, (3) teacher coherence, (4) duration, and (5) collective participation (Schipper et al., 2018). Lewis and Perry (2017) applied this framework to the lesson study model to exemplify the effectiveness of lesson study as high-quality professional learning (Schipper et al., 2018). Lesson study cycles include the following: (1) a clear research purpose, (2) an in-depth investigation of lesson material, (3) collaborative planning of the research lesson, (4) expert teaching by one member of the lesson study group while others observe, (5) a post-lesson discussion, and (6) dissemination of the results of the lesson study cycle (Lewis et al., 2009). In the United States, lesson study cycles include a reteaching component, a less common practice in Japan (Fuji, 2014).

Traditionally, Americans consider instruction as a two-sided coin, considering both the teacher and the learner; however, in Japanese, a single word describes the teaching and learning process: *obuchenie* (Collet, 2019). Lesson study can provide a model for instructional improvement that can impact instruction and the efficacy of participating teachers involved in the cycle. Impactful observations of peer classrooms can provide insights into improving pupil involvement, instructional strategies, and classroom management processes (Schipper et al., 2018).

The lasting impact of lesson study is not solely instructional improvement but a means to promote collaborative study through inquiry-based professional learning. Cultivating a safe and

comfortable learning environment is as important for adult learners (teachers) as for students. Lesson study provides a conceptual model to assist new teachers in discovering teaching strategies through habits of observation, inquiry, and analysis of practice (Lewis & Hurd, 2011).

This research utilized Lewis and Hurd's (2011) lesson study model as described in the sub-sections below.

Phases 1 & 2: Study Curriculum, Formulate Goals, and Plan the Lesson

In the initial phase of lesson study, participants met to review standards and curriculum to consider long-term learning goals for their upcoming unit of study (see Appendix A). The goals focused on skills-based learning rather than content-specific knowledge. Participants shared observations about their classes and noted real-life skills that needed refinement—communication, peer collaboration, reading comprehension, ability to form and defend an opinion, and written and formal efficacy. After participants compared their students' needs, they decided, as a group, to use a skills-based lesson that merged a historical thinking skill with a real-life skill to prepare as their research lesson. The lesson implemented an instructional strategy, Socratic Seminar, which required real-life application of the craft of forming and defending your opinion (Lewis & Hurd, 2011). The group created a detailed lesson plan for one member (expert) to execute while the others observed (see Appendix B) (Lewis & Hurd, 2011). Before the lesson, the data collection guide helped identify the role of the observers (see Appendix C). The group worked together through two cycles of lesson study planning, teaching, observing, and discussing over a ten-day period (Lewis & Hurd, 2011).

Phase 3: Conduct the Research Lesson

The expert teacher executed the lessons during the research phase while the other group members observed. During the observation, the team took detailed notes on the teacher and students' participation in the lesson progression (see Appendix D). Specifically, Lewis and Hurd (2011) note that participants must document students' thinking progress and barriers to student learning.

Phase 4: Reflect

In the first observation debriefing, the group shared their observation data using the First Post-Lesson Discussion of Initial Lesson Protocol (see Appendix E). The team noted the lesson segments, teacher and student interactions, and student engagement during the discussion. After reflecting on the group's findings, the group modifies the lesson so a second expert teacher can execute the lesson. A second expert teacher executed the modified lesson while the group noted critical findings on their observation protocol.

In the final phase of the lesson study cycle, the group reconvened to discuss their observation findings (see Appendix F). The discussion was through the lens of a researcher–discussing their research, investigating, and reflecting (Lewis & Hurd, 2011). The post-lesson discussion focused on how students responded to the lesson and its impact on teaching and learning. After the last debriefing session, the group concluded with the final modification and noted the findings for future instruction.

Concurrent Triangulation of Mixed Methods Research

This research utilized a concurrent triangulation of mixed methods approach. Concurrent triangulation of a mixed methods approach is a type of research that indicates a triangulation of

quantitative and qualitative data collection with a separate data analysis or interpretation of reporting (Teddlie & Tashakkori, 2010). Mixed method research provides an advantage to the validity of the study by combining quantitative and qualitative (Teddlie & Tashakkori, 2010). Social phenomena are complex in diverse settings, such as a school with novice teachers, and various methods are needed to understand best the participants' complexities in their particular environment (Greene & Caracelli, 1997). This research involved a small group of four induction teachers employed at MHS.

The implementation approach to the data collection is imperative in mixed methods studies (Teddlie & Tashakkori, 2010). In this study, I, the researcher, cycled back and forth between quantitative and qualitative data collection using a series of tools and protocols. Data collected included the following: scaled survey data, semi-structured participant interviews, focus group interviews, participant journaling, and field notes. Each data source investigated how lesson study, as professional development, affected teacher efficacy. The triangulation of data and the convergence of multiple sources benefited the research by constructing validity through various perspectives (Yazan, 2015). I utilized data from the pre-and post- teacher efficacy surveys in specific questions of the semi-structured interview to acquire teacher perceptions regarding the three domains of teacher efficacy. Subfields of the study include professional development's impact on student achievement, instructional and assessment practices, and teacher retention.

Participants

Participants included four novice teachers employed as full-time teachers at MHS. All participants had less than two years of teaching experience, and each participated in a traditional

pre-service master's program to obtain their teaching certification. Participants ranged in demographics (See Table 2.1 for pseudonyms and demographics for each participant). Internships varied with each participant. Three participated in a traditional clinical internship experience with a cooperating teacher and structured observations; however, Andy had an alternative experience with no cooperating teacher. He participated in a paid internship with support from district personnel. It is important to note that Andy was also a South Carolina Teaching Fellow, a grant-funded program and enrichment for teacher recruitment and retention in South Carolina. During this study, each participant was a Social Studies teacher at MHS. Due to the nature of skills-based instruction, participants of lesson study do not have to teach the same course to participate in the cycle. For this study, teachers planned instruction using Historical Thinking Skills defined in South Carolina's 2019 Social Studies College- and Career-Ready Standards.

Table 2.1

Demographics of Participants

Participant Pseudonym	Gender	Age	Race	Years of Experience	Undergrad Degree	Master's Degree	Traditional Clinical Internship	S.C. Teaching Fellow
Simon	Male	29	White/ Caucasian	0	Marketing	Masters of Art: Teaching	Yes	No
Ross	Male	39	White/ Caucasian	0	History	Masters of Art: Teaching	Yes	No
Andy	Male	23	White/ Caucasian	0	History	Masters of Art: Teaching	No	Yes
Brooke	Female	24	White/ Caucasian	1	History	Masters of Art: Teaching	Yes	No

Methods to Ensure a Culturally Responsive Data Collection

During the research and data collection, I recognized and considered the participants' culturally defined values and beliefs. As noted by Newcomer et al. (2015), "Evaluation must be designed and carried out in a way that is culturally responsive to these values and beliefs, many of which may be context-specific" (p. 283). I considered the inclusion of cultures and their responsibility to understand the cultural context in evaluation theory and practice (Hood, 2014). During the phases of the lesson study, I facilitated the conversations through a reflective inquiry lens, asking guiding questions as needed. To better understand the participants and their unique personalities, I built positive coaching relationships before the inception of lesson study.

Ethical Considerations

During data collection, I considered the ethical consideration of the participants and their ability to remain anonymous to protect those involved in this study. Their identities remain confidential by using pseudonyms to report the data. As the researcher, I requested permission to collect data from district administration, on-site administration, and the participants.

Data Instruments

This study investigated four data sources to analyze induction teachers' efficacy: Tschannen-Moran and Hoy's Teachers' Sense of Efficacy Scaled Survey (2001), semi-structured participant interviews, a facilitated focus group interview, participant journaling, and researcher’s field notes (See Table 2.2). I collected data between April and May of 2023.

Table 2.2

Data Collection Tools

Data Source	Type of Information	Purpose of the Data Collected	Frequency of Data Collection	Data Reporting
Scaled Survey Data	Likert Scaled, Tschannen-Moran & Hoy (2001): Teacher Efficacy Long Form Survey	Determine teacher's perception of their self-efficacy ratings in the domains of student engagement, instructional strategies, and classroom management	Before lesson study cycles & after the lesson study cycle	Quantitative
Semi-Structure Interviews	Interview Protocol	Determine participant's points of view and the meaning of their experience with lesson study	After the lesson study cycle	Qualitative
Structured Focus Group	Focus Group Protocol	Determine the groups perception and meaning of their experience in the lesson study cycle	After the lesson study cycle	Qualitative
Participant Journaling	Journaling and reflective questioning protocol	Determine the experiences, reflections, and the impact of collaboration on each participant	During the lesson study cycle	Qualitative
Field Notes	Observer field notes protocol	Researcher field notes of important dates, details, or nods of body language when implementing lesson study with whole group	During the lesson study cycle	Qualitative

Scaled Survey

The survey by Tschannen-Moran and Hoy (2001) included 24 Likert-scaled questions to determine the participant's self-efficacy rating in the three domains of student engagement, instructional strategies, and classroom management (see Appendix G). The Likert-type scale survey is similar to Gibson and Dembo's (1984) efficacy survey and the expanded scale survey by Bandura (1997). However, Tschannen-Moran and Hoy's (2001) revised survey includes assessment categories, adjusting the lesson to individual student needs, dealing with learning difficulties, reporting student misconceptions, and motivating student engagement and interest. Tschannen-Moran and Hoy (2001) recommend utilizing the long form with novice teachers, such as induction teachers. The Teachers' Sense of Self-Efficacy Survey measures total self-efficacy and the three classroom domains: classroom management, engagement, and instructional strategies. Questions concerning such domains were combined to measure the overall self-efficacy as well as each domain. I administered two teacher self-efficacy surveys to each participant—once before lesson study implementation and once after lesson study implementation. I disaggregated the data and used a quantitative approach to data reporting through a comparative t-Test.

Semi-Structured Interviews

I conducted semi-structured interviews with each participant after lesson study implementation (see Appendix H). Brinkman and Kvale (2015) note that the discussion is where the interviewee shares vital information with the interviewer. Specifically, in qualitative research, the interview helps the researchers understand the subject's point of view and the meaning of their experience (Brinkman & Kvale, 2015). One-on-one interviews were recorded

on Zoom, lasting between 10-20 minutes. I utilized the same interview protocol during each discussion. I developed the interview questions around the sub-questions of the research and phrased them so the interviewee could understand (Creswell & Poth, 2018). Three interview questions used specific data from the participant's pre and post-survey self-efficacy surveys to address one subsection of teacher efficacy—student engagement, instructional strategies, and classroom management. I included these questions to understand better why the participant's score changed or remained the same after participating in a lesson study cycle. The teacher's responses were recorded and transcribed for qualitative data analysis and comparative analysis for concurrent mixed methods. I asked probing questions to clarify answers and keep the participant engaged in the interview.

Structured Focus Group

After the intervention, I administered a focus group with all participants (see Appendix I). Focus groups benefit the data collection process because the interactions among interviewees will deliver the best information with the support of their peers (Creswell & Poth, 2018). Individuals who hesitated in the interview were more apt to provide information in a group setting (Creswell & Poth, 2018). The focus group discussion included all participants and captured their experience during the lesson study and its effects on teacher efficacy. I, the researcher, moderated the panel to keep the conversation concentrated. When the focus group became too heavily focused on one or two individuals, I prompted other participants by asking about their experiences. The focus group discussion was approximately 30 minutes. I recorded and transcribed to discern any trends in participants' responses. Compiled responses from the focus group gleaned data trends and answers related to teacher efficacy.

Participant Journaling & Meta-Notes

Each participant kept a participant journal during the intervention to record their experiences during lesson study cycles. The journaling protocol concentrated on their experiences, reflections, and the impact of collaboration among their peers (See Appendix J). Before the onset of the collaboration meetings, I reviewed the journaling protocol and provided resources for each participant. I noted the importance of reflecting on the lesson study cycles and how their journaling is part of the research collection process. Journaling was valuable in triangulating the data from teacher self-efficacy surveys and semi-structured interviews.

Observer Field Notes

Field notes were qualitative observations of the participants' behaviors and activities (Creswell & Poth, 2018). During each aspect of the lesson study cycle, I collected field notes as an observer of the group (See Appendix K). The field notes were open-ended, with no guiding questions. The field notes provided insights into the group dynamics, the purpose of the meeting, and other essential factors that teachers may not have reported in the interviews, journals, or the focus group.

Reflexivity

In qualitative research, I, the researcher, considered reflexivity (e.g., work experience, cultural experiences, history) when interpreting the information gathered from data collection (Creswell & Poth, 2018). Reflexivity is a continuous reflective practice of researchers (Parahoo, 2006). My classroom teaching experience includes working with students in grades 6-12. I see the daily struggles of new teachers; however, I am available at the teacher's discretion for one-on-one coaching. In research, the researcher must pay close attention to their role in the research

process to understand how their social background, location, and assumptions may affect the research (Hesse-Biber, 2007). However, the research process may change by listening to the participants and active participation (Palaganas et al., 2017). According to Palaganas et al. (2017), "Reflexivity is indeed a journey of learning and unlearning" (p. 436). In this research, I was cognizant of my role as a complete participant in the research study and development. By fully immersing myself in the process, I was wary of biases and interjections that may sway the participants' views.

Positionality

I reflected on my positionality as a means of possible bias in research and data reporting. Positionality, the social and political context that creates our identity regarding race, gender, and class, can influence our understanding of the world as a researcher (Holmes, 2020). Born and raised in the South, I am no stranger to the disparities in class systems and the impact of poverty on the area where I reside. I am a first-generation college student, surpassing my family's expectations by pursuing a terminal degree in education. I am a public school educator with experience as a classroom teacher, instructional coach, and assistant principal. Changing roles has given me experience in schools with various socioeconomic demographics, including two Title 1 schools. My varying experiences with different groups of teachers provide insight into the struggles of novice teachers in my district. Their support, mostly centralized at the district office, is inconsistent. Their struggle reflects my first two years in the classroom with little to no support from my mentor and school administration. The lack of support led to my desire to succeed in the classroom and develop teacher efficacy—relationships and research outside the prescribed support led to my success in the field. I want to change the narrative for novice teachers,

especially those within my circle of influence. My research is driven by a commitment to recognize and act on the need to provide collaborative professional development for budding teachers. Their need for peer-to-peer interactions, reflection, and inquiry offers a safe learning environment for instructional improvement. A trusting partnership and collaborative workshopping addressed this problem.

Data Collection

During the data collection phase, I analyzed data from teacher surveys, journaling, semi-structured interviews, and a focus group conducted at various points during the implementation of the lesson study process. I employed a mix of deductive and inductive coding cycles to conclude the data (Creswell & Poth, 2018). The data analysis and research provided insights into the effectiveness of lesson study and its impact on teacher efficacy. Data collection occurred between April and May 2023.

Coding

The first coding cycle employed a deductive coding system for the participant journals, semi-structured interviews, structured focus group, and field notes. According to Miles et al. (2014), deductive coding is when a researcher creates a list of conceptual frameworks commonly discussed based on the research questions, hypotheses, or critical variables. After the interviews were transcribed and cleaned, I determined up to 25 keywords or terms among first-year teachers (e.g., classroom management, routines, instruction, support, time management, relationships, etc.). I noted this list but grew and expanded it as other codes arose organically through the research process. I organized my findings using Atlas.ti, a computer-assisted qualitative data analysis software (CAQDAS).

The second coding cycle employed an inductive coding system for semi-structured interviews and a structured focus group. Miles et al. (2014) state that inductive coding is the *other* consistently present code system during data collection. I reviewed the data during the second coding round and traced any codes not identified during the first round. This coding set was essential to my findings because it did not force-fit the data into a singular pre-existing code determined by the researcher (Miles et al., 2014). Lastly, I highlighted notable quotations from each participant.

Analysis

After I coded the semi-structured interviews and focus group data, I iteratively analyzed the coded data to identify emergent themes. Moving beyond the coding allowed me to explore common themes among my interviewees and their responses to disaggregate into common themes (Creswell & Poth, 2018). In conjunction with finding the strands of thematic commonalities, I highlighted the most meaningful quotes that may impact the study. This process allowed for an easy transition from interpretation to synthesizing the data for a concurrent triangulation mixed methods research study.

Using data from the teacher surveys, I conducted a paired samples t-Test to determine if teacher efficacy growth is significant after implementing a collaborative lesson study. I paired the scores with participants' responses from the interview to provide a rich portraiture of each participant.

For triangulation purposes, I developed an integrated results matrix to compare the closed-ended survey results with open-ended points of convergence and divergence (Creamer, 2020). The matrix applied responses specifically relating to participants' responses about their

changes in efficacy ratings in teacher efficacy—student engagement, instructional strategies, and classroom management.

Reliability of Survey

I administered the Tschannen-Moran & Woolfolk Hoy's (2001) Teachers' Sense of Efficacy Scale, Long form pre- and post-lesson study implementation. The reliability measure is acceptable for the efficacy of student engagement ($\alpha = 0.87$); the efficacy of instruction ($\alpha = 0.91$); the efficacy of classroom management ($\alpha = 0.90$); and overall teacher efficacy ($\alpha = 0.94$). Table 3.1 contains the reliability of the data collected using the Teachers' Sense of Efficacy Scale, Long Form (Tschannen-Moran & Woolfolk Hoy, 2001).

Table 3.1

Reliability of Teachers' Sense of Efficacy, Long Form

	Mean	SD	alpha
Teacher Efficacy	7.1	.94	.94
Engagement	7.3	1.1	.87
Instruction	7.3	1.1	.91
Classroom Management	6.7	1.1	.90

Trustworthiness

As a mixed methods research study, trustworthiness must be followed throughout the qualitative data collection process to deter any ambiguities in the findings. Considering ethical issues related to qualitative research, I assigned pseudonyms for the site and participants to avoid situations where the participants may be identifiable in the reporting (Creswell & Poth, 2018). A codebook in Atlas.ti provided consistency with codes and descriptors when tracing themes by

drawing from multiple sources to conclude a comprehensive view of the data collection process (Cope, 2014).

Limitations

Case studies yield high limitations due to the locality and previous experiences of the participants. Hodkinson & Hodkinson (2001) notes there are generalized limitations to case study research. Generalized restrictions about this particular case study include: (a) too much data to be analyzed, (b) the complexity of the situation is difficult to simplify, (c) challenging to represent in numerical statistics, (d) the researcher's objectivity to the study, and (e) case study research cannot answer a large number of relevant research questions. Case study research is limited due to the high impact of external factors influencing participants' feelings and beliefs.

As with the majority of studies, the design of the current study is subject to limitations. Specific limitations and methodological choices could limit the findings of this study: (a) small group and site sample, (b) bias in reporting, (c) time constraints for data collection, (d) leadership and outside influences in first-year teacher experience, (e) cultural bias, (f) differing perceptions of cultural awareness, and (g) potential change of the site's culture. Nonetheless, I must interpret the results cautiously and consider limitations. As a researcher, I must be aware of several limitations and biases that may arise in case study research. I reviewed data collection, synthesis of data, and findings using appropriate research methods to aid in the research process.

CHAPTER THREE

FINDINGS

"Prior to our lesson design sessions, I had never really thought about what skills I want my students to have in five years. I commonly think about where do I want them to be in five years. I want them to be…whatever they choose after high school, I don't want them to go down the wrong path. But, I never thought of what skills do I want them to have. And with the new standards that we have in South Carolina, they're very skills based. They're very skills oriented. So, that's an important thing to keep in the back of my head. Planning from the beginning like we did, made me think more about the skills that I'm teaching the students more than the content…just from the planning aspect, my instructional thinking is a little more intentional."

Andy, Novice Teacher

In this chapter, I discuss the findings of the concurrent triangulation mixed methods study of the impact of lesson study on novice teacher efficacy. The findings result from a three-part analysis—a qualitative analysis of semi-structured interviews, a structured focus group, participant journals, and field notes; a quantitative analysis of teacher efficacy scaled survey results; and the integration of the qualitative and quantitative findings.

My three-part analysis answers the research question—what role does lesson study have on novice teachers' self-efficacy development? First, I discussed the qualitative data findings and the perception of lesson study on novice teachers. From the data analysis, a significant finding emerged related to the significance of instructional improvement. Secondly, I analyzed the findings of the pre-and post-Teachers' Sense of Efficacy Survey results to determine if implementing lesson study cycles was significant on teachers' self-reported efficacy ratings. I examined their overall teacher efficacy and the domains of efficacy in student engagement, instructional strategies, and classroom management. I generated a paired samples t-Test to compare the significance values of pre- and post-intervention to understand the impact of the

lesson study implementation. Lastly, I developed a side-by-side comparison using an integrated results matrix to generate a concurrent mixed methods analysis to compare close-ended survey results with open-ended interview outcomes. To gather a more holistic approach to the intervention process and its effect on a participant's efficacy, I evaluated participants' responses concerning their change in perception of efficacy scores from pre- and post-survey data. Comparison of the data is imperative to confirm or disconfirm my research question examining if lesson study is practical support of efficacy improvement of novice teachers.

Qualitative Data Findings

After implementing the lesson study, qualitative data analysis revealed significant themes and subtheme findings (see Figure 3.1). Before the data analysis, I cleaned qualitative data by checking for transcription accuracy, completeness, and validity of the statements. The Zoom transcriptions had multiple segments with confusing lines and missing words or statements. I reviewed the recordings and filled in the gaps in the transcriptions. Next, I uploaded data collected from participants' journals, semi-structured interviews, and the focus group into Atlas.ti. I employed a deductive coding system to begin my data analysis with common terms among novice teachers (e.g., collaboration, teaching, learning from others, classroom management, strategies, professional development, engagement, etc.). Then, I conducted an inductive coding system for codes that organically emerged from the findings (academic excellence, teacher-student interaction, skill development, time management, professionalism, confidence, gratitude, empathy, etc.). The inductive coding set was imperative to the findings because it allowed me to trace codes that were not as prevalent for novice teachers. Reviewing

the coding data, I highlighted quotations or comments relevant to this study. Figure 3.2 includes a detailed treemap exported from Atlas.ti.

Figure 3.1

Major Theme and Sub-Themes

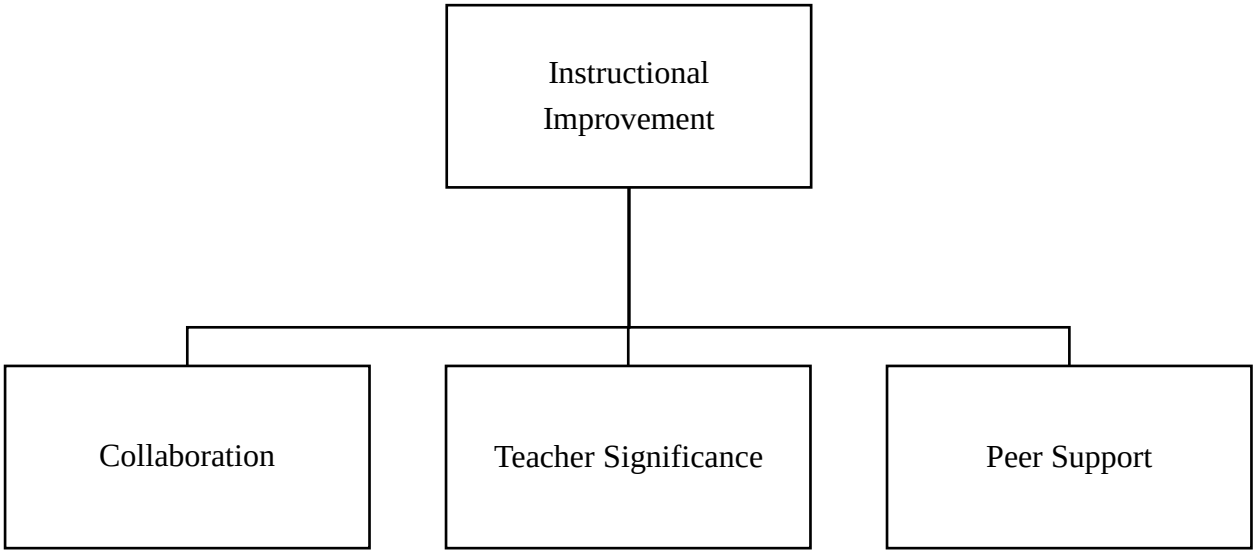


Figure 3.2

Treemap of Codes in Atlas.ti

The various forms of qualitative data—participants' journals, semi-structured interviews, and focus group—allowed me to understand the participant's views during each stage of the lesson study process. I juxtaposed the journal findings with the interview and focus group participants' responses. There were similar responses from each participant regarding the impact of the lesson study implementation on instruction improvement; however, the journal provided more insights into their thoughts and feelings about group dynamics when conflict arose. The participants were not as likely to exhibit overt disagreements in the group settings but noted the conflict in their journals. Findings regarding instructional improvement, collaboration, teacher

significance, and peer support were consistent in each form of data. Participants' journals corroborated with the individual responses in the interview and the group discussion in the focus group.

Instructional Improvement

Throughout my analysis of each type of qualitative data, instructional improvement emerged as the major theme of the study. In each step of the lesson study cycle, teachers planned, observed, and revised their instructional framework to determine, as a group, the best method to reach their students. This process allowed for deep reflection on instructional design and implementation from each participant. Each participant acknowledged the benefits of lesson study for novice and seasoned teachers because of the impact reflecting has on your instructional practice. Teachers are instructional designers; in a school like MHS, where the central office requires no purchased curricula, instructional design and implementation are critical to student success.

Three themes emerged under the umbrella of instructional improvement. First, teachers felt that structured collaborative professional development benefited their instructional practices. Using guiding questions for each part of the cycle gave structure during each meeting. Second, teachers felt that lesson study supported a shift in mindset concerning teacher significance in the classroom. Lastly, teachers felt supported by their peers during the lesson study process.

Collaboration

The first subtheme that emerged was that teachers felt that structured collaboration benefited their instructional practices. Before the study, the department had a good working relationship with opportunities for collaboration such as content-level Professional Learning

Communities (PLC) and department meetings; however, there is little opportunity to observe a peer's classroom without taking time from the teacher's planning period. Each teacher was able to serve as the expert teacher during the two lesson study cycles, allowing for each to consider themselves as the teacher when participating in the planning sessions. Subjects included four college preparatory courses—United States History, Human Geography, World History, and Economics. Teachers adapted the content for each group of students. Multiple participants noted that the lesson study provided a collaborative space that was structured and intentional in planning and implementing the lesson.

Simon reported that lesson study provided a structured environment to start productive conversations on instruction, even at the end of the school year:

> It felt like we got away from some of those conversations for a little bit here as the dog days of the Spring semester kind of got going. It was very refreshing and very healthy to have those conversations again.

Simon's sentiments align with a primary goal of lesson study—decreased isolation. Spreading a professional culture that opens the classroom doors for instructional growth rather than evaluative judgment allowed teachers to improve their practice with peer feedback.

Three of the four teachers noted that collaborating on skills rather than specific Social Studies content allowed the group to consider achievement in the classroom. Moving forward, Andy presented the idea of the department collaborating to discuss skills-based instruction in MHS' social studies classrooms:

> I hope that this lesson study will help us as teachers understand how to structure a lesson and what skills to incorporate in the classroom. This process of designing lessons

> together has given me an insight as to how I can improve in my lesson planning. This process has also shown me how connected we could be as a social studies department with historical thinking skills. I have had conversations with several department members about collectively planning a lesson or two to teach across the department to help our students refine their skills.

In 2019, South Carolina adopted a new Social Studies College- and Career-Ready Standards set that included historical thinking skills. Before 2019, South Carolina did not define historical thinking skills by state standards. As noted by Andy, defining the skills allows MHS Social Studies teachers to align social studies curricula vertically.

Simon noted that lesson study cycles, particularly the planning and debriefing sessions, create an easy step-by-step process for collaboration similar to a peer-reviewed lesson—an easy segue into collaboration for all novice teachers:

> We were essentially able to have our work peer-reviewed and then discuss necessary improvements. This could be extremely beneficial to encourage teachers to review each other's work and collaborate on how to become the most effective teacher version of yourself.

Varying lenses from peers led to a rich discussion in instructional design and lesson implementation. During three observations, observers sat in different parts of the classroom and could hear student discussions from all areas. The varying perspectives and teacher perspectives, both observer and expert teacher, led to a strengthened discussion during the debriefings.

Andy discussed how lesson study had impacted his working relationship with his colleague and their weekly planning sessions. Both teach United States History, a course that includes a state-mandated End of Course assessment:

> So before lesson study…every day we would have small discussion, but the way it looked wasn't as intentional as it was when we were going through the lesson study, you know, cycles and all that. It would just be, you know, basic, and what are you doing in class? I'm on standard four unit… Simon and I specifically, we've talked a lot more about what lessons we're doing. We're planning lessons that we're both using. In fact, he and I refined the lesson that I used for the lesson study, and he did it in his US history class. So that's what it looked like beforehand, but I could definitely tell there's a difference in how I plan lessons and think intentionally about all that since I've been a part of this process.

Intentional planning provided a structured collaborative environment, much like Andy's thoughts during his remarks. Discussing and questioning the lesson design offers a level of inquiry from peer to peer.

During the debriefing session, Ross shared that the observers' location is significant. Each participant said they benefited when the observers sat near one another while observing the expert teacher. The participants were able to discuss how the expert teacher interacted with the students, transitioned to various segments in the lesson, and was able to ask questions if they missed an important piece about the lesson. Sitting near one another allowed for more collaboration amongst the group and provided an area to observe and discuss student discourse in real-time. It is important to note that the observer's location is vital when listening for student

voices in the classroom; however, if the observer's positionality is limited, the group may miss student interactions at varying areas in the classroom.

Peer-to-peer collaboration was a crucial aspect of the success of the lesson study process. Lesson study uses a protocol that allows all participants to add to the process, whether in the planning, observation, debriefing, or expert teaching stage—working together for a common goal and the ability to start with skill rather than content allowed teachers to shift their mindset when designing instruction. Intentionality-designed lesson study required teachers to purposefully think about teaching as a partnership to improve it. As noted by Simon, "I believe this collaboration would build long-lasting learning teams within our department...Cliché or not, we are better together."

Teacher Significance

The second subtheme elicited from the qualitative data collection and analysis was the shifting mindset of the teacher's significance on student achievement. Teachers reported shifts in thinking after participating in lesson study. After observing their peers' classrooms, all participants noted a need to improve instructional design and student engagement.

During the first lesson study cycle, the team agreed to focus on the historical thinking skill *context* so students could understand the importance of primary and secondary sources. The team created a lesson plan centered on the cooperative strategy of the Socratic seminar to provide access to all learners. While working together in the planning stage, the team discussed the scaffolds that needed to be included in the lesson structure to ensure students could successfully excuse a Socratic seminar. The group agreed to include analysis questions and a graphic organizer for students to use when analyzing the seminar's primary source documents.

Students completed the questions and graphic organizer before observing the Socratic seminar. The team noted that the teacher's frontloading of the analysis questions and graphic organizer led to greater participation and engagement during the seminar. Thinking deeply about instructional strategies that could increase student engagement led to emergent attitudes on teachers' impact in the classroom. Moreover, there was a discussion about embedding more instructional strategies to increase student-centered learning in future lessons.

Brooke expressed that planning for engagement was a productive habit that she will continue to implement in the future:

> It gave me a lot of different options and ways that I could give the students the material and information, not just, you know, going through a Powerpoint and then having them do something with the Powerpoint, but focusing on group work, focusing on like how they how Andy and Simon did the Socratic seminar. So, seeing that there is way more that I could do to keep them engaged really made me realize that there was more than I could be doing.

The team supported Brooke's realization throughout the lesson study process. As novice teachers, there was a sense of uncertainty when discussing different strategies or trying something *new* in the classroom, especially with their peers observing them in their moments of vulnerability. The lesson study process challenged the expert teacher to take a risk but receive feedback for improvement. Ultimately, the process uncovers the veil of uncertainty as the team moves through each segment of the lesson study.

After observing Ross as the expert teacher, Simon notes that classroom structure and teacher's planning can ultimately be the determining factor of student success in the classroom:

> This lesson helped me to see the importance of roles and organizations. This was a great example of giving students choice in the classroom and also allowing for structure to keep them focused throughout the class period. I was very excited to see Ross have such success.

As noted in Simon's statement, classroom observation can provide opportunities for teachers to observe a strategy in action. After Brooke's classroom observation, the team met to refine the lesson plan to add more student accountability for each group member. The team agreed Ross was the next expert teacher. The group added role assignments for his lesson to keep students accountable during collaborative instruction. By watching the student's perspective in the initial observation, the team connected the planning and thinking needed in group collaboration for optimal student engagement.

Andy echoes his sentiments when discussing student engagement. Without an authentic clinical internship experience, he felt his pre-service experience was limited:

> I think the diversity of the experience really help helped me think about student engagement a little bit deeper…when I [came] to Mockingbird High School, when I was an intern, I had a very atypical internship experience. I wasn't in a cooperating teacher's classroom, I was the teacher. I was kind of, you know, build a plane and flight at the same time. So I never was able to really observe student engagement from another teacher's perspective or in their environment until this study. So it impacted it incredibly and it made me think deeper about certain things, maybe to be completely honest with you, said things I wouldn't do and, and that, I mean, that's a learning experience too. So, I mean, just a whole way that I think about it has shifted in different ways.

Andy provided a unique experience and perspective to this study because he was the only teacher who did not participate in a traditional student teaching experience; as a substitute, he received mentorship instead of a cooperating teacher. He explains how he views engagement differently after participating in the study.

Lesson study constructs cycles of rapid improvement that lend themselves to creating a natural mind shift; however, in these interviews, I found that each participant will continue to hone these skills moving forward. Participants agreed with Ross when he said, “I actually enjoy getting to watch everybody…because I got to learn from other teachers in my department.”

Peer Support

The third subtheme that emerged during my analysis was the lesson study's impact on peer-to-peer support. Traditionally, peer support is recognized when helping others in need, collaborating, or venting to each other. As novice teachers, peer support can be critical to their success during their initial year. All participants echoed the need for peer support during our discussions and how lesson study gave them a safe space to discuss instruction without criticism or judgment from veteran teachers.

During observation number three, a classroom management issue impacted the progression of the lesson. Some problematic student behaviors disrupted the flow of the lesson. The expert teacher, Brooke, continued the lesson given the circumstances but was visibly upset with the students. Participants did not intervene during the observation and noted the behaviors in their journals. Simon mentioned that he is eager to debrief to provide Brooke with encouraging feedback:

> I look forward to this debriefing because it will give us a chance to build up one of our fellow teachers when they are down. I know that Brooke is beating herself up over the lesson. Hopefully, this session will allow us to provide positive feedback and encourage her.

During the four observations, there were few classroom management issues likely due to the additional adults in the room. Students were very aware of the change in classroom structure and the other adults in the room. Although there were few classroom management issues during the process, the disruption allowed all participants to reflect on how they would have handled the classroom disruption and the steps to take if it occurred in their classrooms.

Andy matched Simon's sentiments in his journal concerning Brooke's observation, "She noticeably did not feel effective after this lesson despite her attempts to be, and I am looking forward to the debrief so that we can lift her spirit up a bit." Andy notes his compassion for Brooke's situation after the debriefing session:

> We have all struggled with students and student behavior at different points, and so there was a certain level of compassion for our fellow coworkers when they have a challenging class…It's a reminder to reach out when you have an issue in the classroom and, like, Hey, have you had this? Or do you know what this is like, or what did you do in this situation? It's just a reminder to not to isolate so much when we're struggling or when we're being successful.

Lesson study provided a culture of positive support for all teachers involved in the process. Given the circumstances of the observation, the teachers reflected on the behaviors and better understood the students they worked with. The lesson study perspective is unique because

each classroom's student population, culture, and context are similar. In many cases, such as this, the four participants were familiar with many of the students they observed. The process provided a sense of peer support while recognizing the feedback is contextualized in the context of the student population and the cultures embodied in it.

Brooke noted that her participation in lesson study has contributed to her confidence as a teacher because of the support she had from her peers:

> I think what it showed me was that we are able to work together, even though we are teaching different content, we still are able to work together and come up with a lesson. And for me, that makes me feel a little bit more confident in what I'm doing and what I'm teaching just knowing that, like, I have support from my department, from my peers. And we're able to, you know, go in and give each other criticism without it hurting feelings or anything like that. And just say, Hey, this could have went better. But you did really good at this. So I think that it I think it brought probably the four of us closer together. I definitely feel, I felt supported before. But feeling, you know, like. It's okay. If something goes bad, you can just ask the people that you work with, and they'll tell you how we could fix it and make it better.

The planning sessions provided a safe space for teachers to be honest about their teaching philosophy and instructional practices. However, this did not come without conflict about best serving students. One teacher reminisces about a conflict during their meetings:

> So obviously during our meetings there was, if we're being honest, a little bit of conflict, we're conflicted with each other at some point. But I think that that's healthy because at the end of the day, we're still there to support each other, and we're still going to help

each other. And it's okay to have a different opinion, and just to hear each other's opinions.

Andy considers disagreements and arguments part of a healthy research project because disagreements are bound to occur in education:

I think it was also real. I mean, there were times where you know, there was argument. There was this disagreement…It wasn't some fake, you know, study. And I think that's real life. And that's important, especially when it comes to an [education] study of this nature.

Educators feed off peer support to survive the daunting daily tasks that can cause early burnout or teacher attrition. Lesson study provides a peer support group with like-minded colleagues, which is essential to the growth of novice teachers. The experience gave meaning to the interpersonal understanding of others. Disagreeing with their peers was a natural reaction; however, professionally voicing concerns and disagreements allowed for a greater rapport within the group. Lesson study generated a haven for instructional conversations, improving instruction for all future students impacted by these teachers. The experience led to a more significant consideration of acknowledging everyone's opinions and seeking someone else's understanding. It also created lifelong bonds with peers, essential for future collaboration.

Summary of Qualitative Data Findings

My research study sought to determine if lesson study impacts novice teachers' self-efficacy. The qualitative data analysis noted domains of teacher efficacy, including student engagement, instructional strategies, and classroom management. The major theme—instructional improvement—lends itself to improving teacher efficacy. Teacher reflection was a

common theme when discussing collaboration, teacher significance, and peer interactions. All teachers noted that they are reflective practitioners, considering all aspects of their lessons to plan for improvement. Lesson study gives them more tools to become reflective practitioners and move toward instructional improvement. It is important to note that conversations centered on student engagement considered the student population. Given that all teachers are part of the same school community, the team contextualized and framed instruction to meet the needs of the students in their particular setting.

Above, I noted themes related to teacher efficacy; however, the Teachers' Sense of Self-Efficacy rating accurately measures teacher efficacy improvement. In the final summary of this chapter, the side-by-side analysis determined if lesson study impacts efficacy ratings.

Quantitative Data Findings

I analyzed quantitative data to determine if there is a significant difference between pre- and post-lesson study implementation. I collected pre- and post-implementation data on teacher self-efficacy regarding the three domains—efficacy in student engagement, instructional strategies, and classroom management.

Paired Samples t-Test Results

After quantitative data collection, I conducted a paired samples t-Test to examine the association between participants' teacher efficacy before lesson study implementation and post-intervention (see Table 3.2). To understand teacher efficacy in t-sample of teachers, I measured each teacher's pre-efficacy and post-efficacy. I sought to understand if my sample was affected by the intervention. Initially, it appears that my sample had a lower propensity toward overall

teacher efficacy ratings in the pre-lesson study implementation (M = 6.54, SD = .51) than in post-lesson study implementation (M = 7.08, SD = .56) with a mean difference of 0.54.

Table 3.2

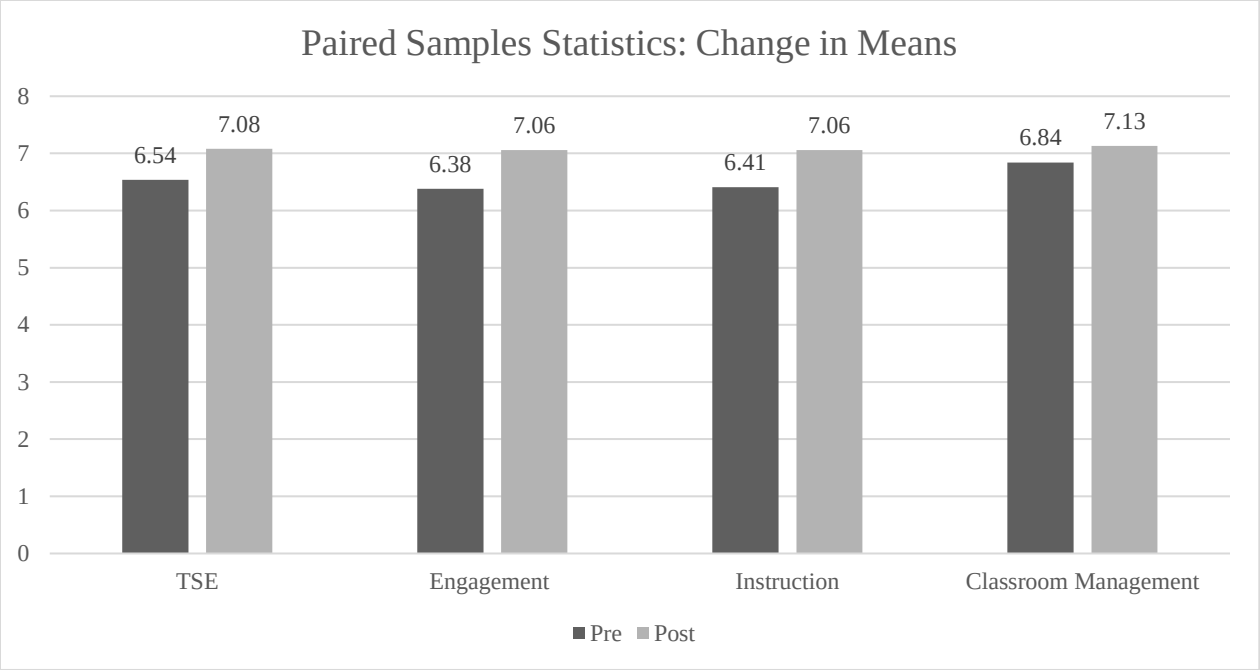
Descriptive Statistics of Pre- and Post-Survey

	N	Mean	Std. Deviation
TSE Pre	4	6.54	.51
TSE Post	4	7.08	.56
Engagement Pre	4	6.38	.65
Engagement Post	4	7.06	.38
Instruction Pre	4	6.41	.74
Instruction Post	4	7.06	.63
Classroom Management Pre	4	6.84	.74
Classroom Management Post	4	7.13	1.18

The paired-samples t-Test revealed the changes in mean for total self-efficacy and efficacy within each domain. The results yielded a higher mean value in all areas of efficacy (see Figure 3.3). Engagement yielded the highest in a mean difference of M = 0.68. Classroom management yielded the lowest change in mean difference M = 0.29.

Figure 3.3

Paired Samples Statistics: Change in Means



Further analysis (see Figure 3.4) of a paired-samples t-Test revealed the differences between the three domains of teacher efficacy were statistically significant in two domains, student engagement $t(3) = 3.54$, $p = .04$, and instructional strategies $t(3) = 4.74$, $p = .02$. The domain of classroom management yielded a p-value $> .05$, $t(3) = .4$, $p = .72$. Such findings are encouraging among educational leaders, yet there needs to be more investigation to determine if lesson study is significant for developing novice teacher efficacy.

Figure 3.4

Paired Samples t-Test Results Comparing Novice Teachers' Efficacy Pre- and Post-Lesson Study Implementation

	N	t	Mean Difference	Std. Deviation	Std. Error Mean	P-value
TES	4	2.28	.54	.42	.21	.08
Engagement	4	3.54	.69	.39	.19	.04
Instruction	4	4.74	.66	.28	.14	.02
Classroom Management	4	.40	.28	1.40	.70	.72

Summary of Quantitative Data

I found there was a marginally significant difference ($p < 0.10$) in ratings for overall teacher efficacy in the pre-lesson study implementation ($M = 6.54$, $SD = .51$) and post-lesson study implementation ($M = 7.08$, $SD = .56$); $t(3) = 2.57$, $p = .08$. These results suggest that lesson study could affect novice teachers' self-efficacy, especially in a larger sample with more statistical power; however, there was a statistical difference in the domains of engagement and instructional strategies. More research is needed to determine the effect and significance of all domains of teacher efficacy.

Data Integration

As part of concurrent triangulation mixed methods, I conducted a side-by-side analysis of qualitative and quantitative data to determine if lesson study impacted novice teacher efficacy. In mixed methods research design, qualitative and quantitative data are used to answer different research questions or corroborate the findings of a single research question (Creswell & Creswell, 2018). A mixed method analysis provided a complex approach to better contextualize

the data collected (Creswell & Creswell, 2018). In this case, I integrated the qualitative and quantitative data as a means for triangulation to see if both illustrated the impact of lesson study on novice teachers. During the semi-structured interview, three survey questions applied data from the participant's Teacher Sense of Efficacy Survey to question their perceptional changes in efficacy scoring. The questions explicitly related to one domain of teacher efficacy—student engagement, instructional strategies, and classroom management. During the discussion, I inquired about the change or had them explain why it remained the same. After questioning participants about their adjustment in efficacy ratings, I extracted exemplar quotes to represent their perceptions of the numerical change. To display the triangulation of the data, I created an integrated results matrix to compare close-ended survey results with open-ended interview outcomes, identifying the themes of convergence and divergence (see Table 3.3).

Table 3.3

Integrated Results Matrix

Engagement	$t(3) = 3.54$, $p = .04$	Teachers reported that by concentrating on student engagement as part of the lesson study observation protocol, they could consider planning for engagement in future lessons.	*A lot of that had to do with the other observations that we, that I, observed in the lesson study, seeing how other teachers in my hall, manage their classrooms made me feel a lot better about using other strategies…a lot more effective in the way that I do things. Some things, you know, we gave constructive feedback to the teachers that were being observed and that helped me grow too. Because*

			when I was giving the constructive feedback, I was teaching myself stuff that I hadn't even really thought of. So my confidence in that has gone up and as the survey says….So definitely I am more confident that now.
Instruction	$t(3) = 4.74$, $p = .02$	Teachers reported that lesson study planning sessions allowed them to consider student-centered learning and alternative strategies to promote cognitive student engagement.	*I think some of that has to do with what we have done in a lesson study. It reminds me that there are alternate ways to present material, and I think that's an area I personally struggle with being creative being, you know. I grew up in a world where take notes, take a quiz, take notes, take a quiz, and just my personality... In general I struggle with being creative. So I think for me, I felt like when I talk with other people, whether it's Andy, Brooke, our department chair, and they're doing…this simulation or this seminar. It kind of reminds me that I can do a little bit more with certain concepts and stuff that I do. I definitely think when I talk to other people, my creativity goes up.*
Classroom Management	$t(3) = 0.4$, $p = .72$	Teachers reported that predictive structures, routines, and procedures are imperative for student achievement and	*I think I learned that productive habits can look different depending on what classroom you're in. Depending on what lesson you're watching, depending on what teachers managing the classroom and the*

	success in the classroom.	*instilling of productive habits. I've learned it is different by teacher, especially first year teachers and second year teachers. And the amount of thinking that takes place at higher order. Thinking it depends on the productive habits that are put in place, and that's related to other things within the classroom other than just standards and objectives.*

Quantitative and qualitative data are integrated in a joint data display in the matrix above (See Table 3.3). The matrix displays the results of the paired-samples t-Test, qualitative results, and an exemplar quote for each domain of teacher efficacy. The matrix provides insight into the impact of the study on all participants' efficacy ratings and a sample of participants' interpersonal reactions when directly asked about how their participation in lesson study influenced their pre- and post-efficacy scores.

Summary

The purpose of this study was to determine if lesson study impacted the efficacy of novice teachers. The concurrent triangulation mixed methods design includes multiple, layered data sources to conclude teacher efficacy, an often difficult task because of the psychological determination of a teacher efficacy score. The qualitative phase elicits the psychological state of the participant at that moment in time and their feelings about each lesson study cycle. The focus group lends itself to the influence of group dynamics and acknowledgment of multiple viewpoints to shape their understanding of the intervention. The quantitative phase provides a more aggregate understanding of lesson study's impact on teacher efficacy because of its

inferences about the potential impact on a novice teacher population. The data integration of mixed methods (compared to the qualitative and quantitative data alone) enables a greater understanding of the intervention's full impact and overall influence on novice teacher efficacy. Collectively, by analyzing these types of data, I contextualized the perceptions of the participants and the impact of lesson study on their shifts in teacher efficacy. A concurrent mixed method approach allowed an integration that merged data to explain the significance and findings of lesson study implementation.

CHAPTER FOUR

DISCUSSIONS AND RECOMMENDATIONS

"…and that could really happen at like the department level like that, physically sitting down and saying, 'Here's where the students are. Here's what we've seen. Here's what they're lacking'…kind of diving into that. That could be a very productive department level meeting to start the year…But, if we did the whole department, then everybody's on the same page, and we can kind of work together on getting them there."

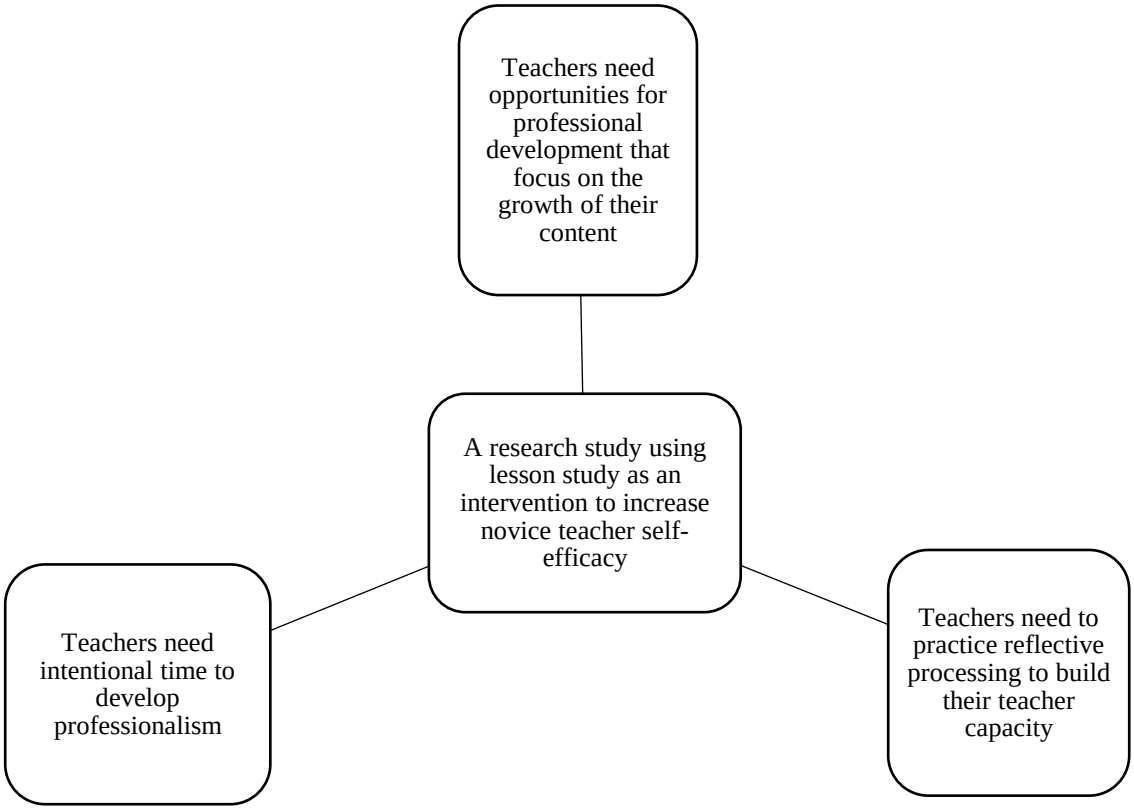
Simon, Novice Teacher

The final chapter summarizes the findings and presents future recommendations for increasing the efficacy of novice teachers through research, policy, and practice. Key findings include design time and challenges, content-specific professional development opportunities, intentional professional skills development, and more reflective processing training to build teacher capacity (see Figure 4.1). By implementing an improvement science framework, such as lesson study, I found key findings of an intervention on teacher efficacy; however, design time and challenges were apparent. When examining the data analysis, there were significant gains in planning for student engagement and instructional strategies. Instructional improvement was substantial, making a lasting impact on their overall efficacy. By implementing lesson study, teachers reflected on their teaching practices through instructional design—planning, implementing, observing, and refining instruction. I chose lesson study as the intervention because the cyclical process creates a natural rhythm of improvement that can increase teacher efficacy and foster growth in teacher capacity. First, participants understood how lesson study provides a chance to focus on the specific professional development of the teacher. With all aspects of lesson study considering the interactions and improvement of the teacher, participants used metacognition to analyze how they plan for engagement, interact with students, and deliver instruction in their content. Additionally, teachers developed skills that promote professionalism

in the workplace. Lastly, teachers practiced reflective processing that built capacity for identifying areas of improvement.

Figure 4.1

Summary of Key Findings



Discussion of the Findings

Design Time and Challenges

Three design challenges arose during the intervention: implementation time, lack of substitute coverage, and the impact of observer presence on student pressure. First, time was a

critical concern. Lesson study implementation was in late April after students and teachers returned from Spring break. Due to the nature of the school year, school obligations, coaching responsibilities, and testing requirements pulled teachers in various directions.

Participants noted that lesson study implementation would have been valuable at the beginning of the school year or change of the semester. During the focus group, Brooke mentioned, “Next year, start at the beginning of the year [and] pick out important skills and all of us trying to really focus on building those skills.” While this timing was less than ideal, the team used various periods in the day to meet the requirements of lesson study. Group collaboration occurred before and after school because the teachers do not have a common planning period. Before school and during lunch gave participants time to debrief and plan for the next lesson. However, the team was rushed and less effective than when meeting after-school. Participants agreed that after-school sessions were best to give the group ample time, but staying after hours with personal obligations was difficult.

Secondly, teacher coverage became a challenge during the observation phases of lesson study. Because of the substitute shortage in the area, the team strategically planned peer observations to provide coverage for the teachers observing the expert teachers. At one point in the study, the group combined two smaller classes to allow the teachers to conduct the observation.

Lastly, participants and I noted that observations might have yielded a misleading reflection of student interactions because of the daunting pressures surmounted by four additional adults in the classroom. Intimidation may have been a factor. Each teacher said their students acted differently, with three teachers and an administrator in the room. I noted in my

field notes that students were visibly wary of the extra observers. Expert teachers explained the purpose of the observers at the start of each lesson; however, through their body language, many students were hesitant when answering questions or discussing with their classmates. Peer observations were uncommon at MHS, so this work is foreign to students and teachers alike.

Key Findings

Provide Opportunities for Professional Development in the Content Area

Novice teachers need specialized professional development in their content area. With an increase in novice teachers with little to no teaching experience, there is more need for content-specific professional development. School leaders cannot assume traditionally certified teachers do not need the same support as alternatively, certified teachers. These teachers need assistance to develop instructional skills that increase student achievement and long-lasting teacher efficacy. In the focus group, Simon noted he struggles to design instruction personalized for his students. His experience in the study gave him the confidence to incorporate different strategies.

In 2019, when South Carolina adopted the College- and Career-Ready Standards for Social Studies, there was a pedagogical shift from content-driven standards to skills-based instruction. The change forced teachers to evaluate their pedagogical practices and embed historical thinking skills in their curricula. In high school Social Studies classes, historical thinking concepts require students to conceptualize history and establish the historical significance of past events—a more in-depth and rigorous cognitive thinking approach. This study highlighted the importance of skills-based instruction in Social Studies classrooms. As noted in my findings, the participants discussed how centering their planning around skills-based instruction allowed them to think critically about the skills their students need to be successful in

future Social Studies classes. The critical thinking about skills-based instruction led to a greater understanding of vertical alignment and the potential to help align instruction throughout the MHS Social Studies department.

While teachers stated that planning together was imperative, they noted that skills-based instruction was a concept they would like to continue within their department. The four novice teachers felt more supported in historical skills-based instruction by sharing instructional frameworks. Planning for universal historical thinking skills allowed teachers to discuss institutional practices about various curricula—a concept foreign to novice teachers. Each participant was allowed to take on the role of an expert teacher, allowing an opportunity for the group to plan the curriculum for Human Geography (freshmen), World History (sophomores), United States History (juniors), and Economics (seniors). In both planning cycles, the expert teachers' lesson framework remained the same; however, the primary and secondary sources changed to match the subject. By keeping the same instructional framework, including scaffolds for student engagement and access, the teacher would only have to modify the primary and secondary sources. The observation led to discussions on student engagement at each grade level and teachers' expectations of students depending on their age. This opportunity was a valuable learning experience for the novice teachers. The department noted that skills-based planning is sustainable for future collaboration.

Provide an Opportunity to Improve Professionalism

Novice teachers need opportunities to improve professionalism at the beginning of their teaching careers. The data concluded that teachers grew in their instructional practices through collaborative professional development, reflecting on teaching, and practicing self-accountability

and regulation skills with peers. As part of the Expanded ADEPT system, the South Carolina Teaching Standards (SCTS) 4.0 rubric includes a section on Professionalism. The rubric divides the performance standards into four domains—Growing and Developing Professionally, Reflecting on Teaching, Community Involvement, and School Responsibility—which evaluates teachers on a scale of one (Unsatisfactory) to four (Exemplary). The lesson study process addresses eight of the ten performance standards from the SCTE 4.0's domain of Professionalism.

South Carolina Department of Education designed the performance standards and evaluation process for teachers to grow throughout their careers, specifically within the first two years in the classroom. The ADEPT continuum, beginning with teacher preparation and continuing through the induction phase and summative evaluation, expects an ongoing growth system. However, from this study, I found that school-based leaders must intentionally create professional development opportunities that provide novice teachers the space to collaborate without judgment from veteran teachers. A safe space allows novice teachers to gain valuable and constructive feedback for their peers—a metacognitive practice that can build their capacity as teachers.

The findings extend teacher professionalism by finding strands of empathy building. Past research focuses on empathy building as an essential quality that helps teachers build strong relationships with their students; however, moving forward, leaders need to note the importance of empathy-making with peer-to-peer connections (Taylor, 2018). Building empathy, from a professional standpoint, can assist with understanding peers' perspectives and developing a deep compassion for one another. Empathy development leads to deeper social-emotion connection,

communication, and skills for conflict resolution, a view that is essential when moving forward in the education field.

Evolving Mindset and Capacity Building

Novice teachers need intentional space to practice reflective processing for an evolving mindset, a natural progression to build teacher capacity. Teachers noted that lesson study created a cycle of reflection on their instructional practices. At the debriefing sessions, the participants were open to discussing and refining for the next lesson. While initially planning the skills they wanted their students to possess after high school, the team had valuable conversations about their philosophies of education and the lasting impact they desired to have on their students. During this conversation, there was a philosophical conflict; however, the healthy discussion led to a deeper understanding of each other and the impact they wanted to make moving forward. The protocols provided by Lewis and Hurd (2011) drove discussion and helped communication barriers within the team. The debriefing sessions became more natural after the fourth observation. Teachers were more likely to share professional, constructive feedback. Moreover, teachers were more vocal in their observations of student engagement, and the scaffolds required for deeper cognitive thinking.

By creating a collaborative space at the school level, the teachers could better understand student engagement and expectations contextualized in their school context. When planning lessons, the team discussed the need to improve universal cognitive skills lacking in previous units. The group determined students lacked skills such as drawing conclusions and effective communication. The group agreed and noted that it was seemingly noticeable in all of their classes at MHS. As they cultivated their instructional framework, these cognitive skills played a

part in selecting their strategy for the lesson. As noted by Andy, “Prior to our lesson design sessions, I had never really thought about what skills I want my students to have in five years…made me think more about the skills that I'm teaching the students more than the content…just from the planning aspect, my instructional thinking is a little more intentional.” Merging real-life and historical thinking skills required teachers to consider a collaborative instruction strategy with subject-specific content. The reflection provided opportunities for refinement for the second expert teacher. This inquiry-led practice assisted in a mindset shift on how instructional strategies can contribute to student growth.

As novice teachers, the participants did not possess the same expertise as veterans to plan for classes with low skill levels or student engagement. Teacher reflection provides an avenue to grow in practice. There is a difference between learning a skill, such as teaching, and engaging in conversation about improving your teaching practice. Lesson study supplied scaffolds to intentionally reflect on instructional design and implementation with a group while considering if your chosen strategy is appropriate for the learning outcome. This cyclical, inquiry-centered process improved teachers’ reflecting processing and naturally created the growth of teacher capacity.

Recommendations

This experience and research yielded significant recommendations for implementing lesson study. First, school leaders must incorporate intentional time for novice teachers to collaborate about their experiences in the classroom. Lesson study is beneficial; however, that comes at a time cost. Teachers need ample time to plan, observe, and debrief. I noted that each session could last anywhere from 20-60 minutes. Teachers sacrificed their personal time after

working hours to make this process successful. According to the Southern Regional Education Board (2020), states and districts could consider providing professional development stipends dedicated to each teacher's needs. I recommend professional development renewal hours or a paid stipend for novice teachers to participate in collaborative professional development held during after-school hours.

Secondly, based on my observations, I recommend keeping the lesson study group between four and six participants. With too many opinions, participants may be dismissed from the conversation and not be provided the same opportunity for metacognition as those in a smaller group. Furthermore, allowing at least four participants in the group, there are enough teachers for each to take on the role of expert teacher and acquire valuable feedback to improve their craft.

Furthermore, lesson study implementation must be intentional, with clear procedures and expectations. As the researcher, I noted a few moments when participants did not understand the complexity of the lesson study cycles and how each participant would be an expert teacher. Moreover, there was no clear explanation from the observers. Vague expectations led to confusion and conflict when one observer participated in the lesson. Because of this, I recommend a clear visual explaining each lesson study component and participants' expectations in each stage of lesson study. Ideally, the group would have an onboarding session that discussed the lesson study process and participant expectations, allowing the participants ample time to review the components of the lesson study process. Additionally, participants should have the opportunity to ask clarifying questions about their participation in the intervention—with clearly defined roles and expectations. These recommendations could help eliminate the pressures to

partake in additional professional development and provide an optimal learning experience for participants.

Implications

Implication on Practice

This study shed light on the need for specialized professional development for novice teachers. Novice teachers thrive on the opportunity to become better educational practitioners; however, district and school leadership does not always provide them growth opportunities, specifically growth of teacher efficacy, beyond the expectations of the district-created ADEPT program. Since South Carolina districts can create and monitor their ADEPT programming, a prescribed curriculum is unavailable for all novice teachers. Due to the nationwide teacher shortage in recent years, MCSD increased the percentage of teachers with no prior certification. There is a need for intentional school-based professional development in conjunction with the district's ADEPT office. Furthermore, there is a need for a more personalized approach to professional development for prior-certified teachers and non-certified teachers entering the field.

Lesson study can allow novice teachers to explore a more reflective process about their role as a teacher in their content area. While observing these Social Studies teachers, they thrived on the opportunity to hone in on their craft as historians and Social Studies teachers. The opportunity to discuss strategies beneficial to their practice was essential to their growth as novice teachers. Lesson study is universal to all core subject areas—math, science, English, and Social Studies. Subjects do not isolate skills to one course or grade level. They build on each

other to help students succeed in the specific discipline. Lesson study can provide the framework for improvement in skills-based instruction for any content.

Moreover, with the protocols provided, the participants now have the fortitude to implement lesson study without the guidance of a facilitator. After participating in the study, participants noted they will likely continue this process next term with additional department members. Lesson study is sustainable without a facilitator as long as teacher leaders can maintain the observation logistics and continue conversations for instructional improvement.

Due to the district's personnel-funding formula, MHS does not employ a full-time instructional coach to monitor novice teachers' professional growth. Instructional improvements are at the teacher or department level. If the district truly wants to focus on teacher development and efficacy ratings, district leaders must focus on instructional leadership, including an instructional coach at each school. Instructional leadership starts with the principal; however, an instructional coach can keep abreast of the research affecting instructional strategies and student engagement. A coach has the opportunity to guide a teacher in their improvement journey without bias during evaluation. In addition, novice teachers must have challenging but honest conversations about instructional improvement with a coach to help guide the teacher to improvement. By adopting a district and school-level vision of professional development for novice teachers, leaders can support an increase in teacher efficacy and retention, a necessity for the future of South Carolina students.

Implication on Policy

South Carolina's state lawmakers should consider requiring professional development and allocating funds that support teacher efficacy to increase teacher retention and decrease

teacher burnout. State-level leaders should recommend that all school leaders, coaches, and mentors working directly with novice teachers need cognitive coaching and professional development. Cognitive coaching builds on teachers' strengths and allows teacher metacognition to develop their capacity further (Wooten-Burnett, 2016). Professional development is beneficial; however, effective coaching after professional development can significantly impact teacher efficacy. This approach to adult learning can influence the teacher's instructional practice and, in turn, impact student achievement. My instructional coaching background played a role in the success of the lesson study process. I facilitated the sessions and guided the conversation with reflective questions if the group was off task.

State lawmakers need to consider allocations specific to the development of new teachers. Funding particular professional development for novice teachers will allow more time to process new curricula, plan for student engagement, and reflect on their practices. For novice teachers, this concept does not come naturally. New teachers must practice these skills with mentoring support to help guide the conversations. Learning, even adult learning, is not effective in siloes. Teachers need support from fellow peers in a collaborative space. However, this requirement takes additional funds to compensate teachers for their time.

Furthermore, novice teachers should partake in required professional development on poverty, race, and diversity. Traditional university programs for teacher preparation customarily include coursework on diversity; however, South Carolina officials need to consider the growing amount of teachers entering the workforce with little to no teacher preparation. In schools like MHS, where race and poverty intersect, a teacher's understanding of the climate and culture of the study body is necessary. It is essential to understand that empathy, not sympathy, is central to

teacher success. First, teachers will need to build positive teacher and student relationships with an understanding of their students' backgrounds and cultures. The influence of school culture and community can help support a novice teacher during the first few months on the job. Because each community and school differ in culture and context, professional development may be applicable at the district or school levels for the most effective and up-to-date information.

Implication on Research and Development

Research opportunities are vast regarding the teacher efficacy of novice teachers. This study sheds light on the malleability of teacher efficacy during the first three years using one intervention. Future research needs to include a larger sample size and comparative results from teachers of various disciplines. Results from multiple disciplines may yield significant differences in the three domains of teacher efficacy. Additional studies would allow researchers to analyze lesson study in numerous fields to determine their effectiveness and impact on skills-based instruction in their content. A more in-depth view, larger sample size, or comparative results would provide insight into the effects of the intervention.

School leaders and education researchers must investigate the longevity of lesson study after initial implementation. There is a need to determine if lesson study is sustainable over time and if it can be effective without the facilitation of a school leader or coach. Participants noted they would continue lesson study within the department; however, I would need to collect additional research to determine the process's effectiveness without facilitation in subsequent rounds.

In addition, there is also a need for research on how the school's positionality affects teacher efficacy. MHS, a high school affected by race and poverty, influenced the teachers' self-

efficacy ratings in the pre-and post-teacher efficacy Survey. Likewise, in various locations across South Carolina, race, rurality, and poverty affect the teachers they serve. Further research will determine if these factors lead to lower efficacy ratings, teacher burnout, or retention. Researchers need to examine the positionality of a school and its community to determine if it influences teacher efficacy over the school year.

Concluding Thoughts and Reflection

This research optimized my philosophy of teacher preparation and the need to support new teachers in the field. There is still so much work to do. There is a need for instructional leadership that focuses on planning for improvement for both student and teacher growth. Educational leaders must support new teachers to ensure student achievement improves in poverty-stricken areas such as Mockingbird. This study only concentrated on lesson study as the intervention for efficacy development and growth; however, multiple programs, cohort models, or professional development series can provide similar outputs for novice teachers.

Reflecting on this process and research reminds me that inquiry, cognitive activation, and reflection are central to learning, regardless of age. Considering that lesson study lends itself to an inquiry model for improvement, active engagement in professional development is just as necessary as students' active engagement in the classroom. This concept cannot be foreign to new teachers. The constant demands of teaching and developing the fortitude to adapt to overwhelming situations can be daunting for new teachers, but they can succeed with the proper support. Because of this research and lesson study, four novice teachers gained tools for instructional improvement they can use throughout their careers. From my lens, the teachers had a mindset shift on planning, instructional delivery, and student engagement—a difficult task for

adult learners. Although there was a moderate statistical significance in overall teacher efficacy for the sample size, I believe there are positive results of the participant's instructional design and peer relationships due to this study. As the teacher shortage continues, school leaders must consider the growth of new teachers entering the field and the faculty they have on staff. Building teacher capacity has to be a priority; otherwise, we continue the cycle of teachers leaving the field because they did not receive adequate support when needed.

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APPENDICES

Appendix A

Phase 1: Choosing a Research Theme

Directions: Use the following protocol to determine a research theme to conduct a lesson study cycle. Think about the students you serve. Jot down your ideas about each item before reading the next item.

Your Ideals: Ideally, what qualities would you like these students to have five to ten years from now (or alternately, when they graduate from MHS?)

The Actual: List their qualities now.

The Gap: Compare the ideal and the actual. What are the gaps that you would most like to address as an educator?

The Research Theme (The Goal, Research Focus, or Main Aim of Lesson Study): By comparing the ideal and the actual student qualities, select a focus for your lesson study. State positively the ideal student qualities you choose to work on. For example, teachers in a Japanese school serving low-income, diverse community that had historically been subjected to discrimination chose the following goal:

> *For students to develop fundamental academic skills that will guarantee their achievement and a rich sensibility about human rights.*

Your Research Theme:_____

Protocol adapted from *Lesson Study Step by Step: How Teacher Learning Communities Improve Instruction*, by Lewis and Hurd, 2011, Heinemann.

Appendix B

Phase 2: Teaching-Learning Plan Template

Team Members:

Instructor:

Date:

Grade Level:

1. Title of Lesson:
2. Research theme* (Long-term goals), Broad subject matter goals. Lesson goals.
3. Lesson rationale: Why we chose to focus on this topic and goals. (For example what is difficult about learning/teaching this topic? What do we notice about students currently as learners?) Why we designed the lesson as show below.
4. How does students' understanding of this topic develop? For example, how does this lesson fit within a unit? How does it fit within students' experiences in prior and subsequent grades?
5. Relationship of the Lesson to State Standards
6. Lesson Design:

Student Learning Activities	Anticipated Student Responses and Teacher Response	Points to Notice (Evaluation)

7. Data collection points during the lesson observation.
    a. Our team will collect data on:
    b. Outside observers are asked to collect data on:
8. Conclusion: What have learned from this lesson study process?

Protocol adapted from *Lesson Study Step by Step: How Teacher Learning Communities Improve Instruction*, by Lewis and Hurd, 2011, Heinemann.

Appendix C

Phase 3: Data Collection Guide

The following questions will help you identify the data to be collected by observers during the lesson.

1. What data will help you understand your students' progress on your lesson goals, broad subject matter goals, and long-term goals (research theme)?
2. Would a prepared data collection form facilitate observation? (For example, a form that lists strategies you anticipate or a seating chart to record conversation pathways.)
3. What student work will be collected at the end of the lesson? (For example, an exit slip with a targeted question a student journal, or a piece of writing.)
4. How will material presented on the whiteboard or Aquos board be captured (for example, by observers, or by using and retaining chart paper)?
5. What are the individual assignments of the lesson study team? Will one person transcribe the lesson and keep a timeline of lesson events? Will observers be assigned to observe specific students or groups?

Protocol from *Lesson Study Step by Step: How Teacher Learning Communities Improve Instruction*, by Lewis and Hurd, 2011, p. 157, Heinemann.

Appendix D

Phase 3: Lesson Observation Log

Title of Lesson:

Goals of the Lesson:

Observation objectives or learning targets:

Time	Observation	Significance

Conclusions:

Further questions raised:

Protocol adapted from *Lesson Study Step by Step: How Teacher Learning Communities Improve Instruction*, by Lewis and Hurd, 2011, Heinemann.

Appendix E

Phase 4: First Post-Lesson Discussion of Initial Lesson

1. Discuss what you observed in the lesson. Describe student observations and teacher observations.
2. How did the students respond to the various segments in the lesson?
3. Did you note any questions during your observation?
4. What changes would you make to the lesson based on the lesson segments you observed and based on the ideas raised during the post lesson discussion? (Lesson study team revises the lesson)
5. What do you predict students will do the same or differently in the next lesson?

Protocol adapted from *Lesson Study Step by Step: How Teacher Learning Communities Improve Instruction*, by Lewis and Hurd, 2011, Heinemann.

Appendix F

Phase 4: Second Post-Lesson Discussion and Final Reflection

1. Discuss what you observed in the lesson. Describe student observations and teacher observations.
2. How did the first and second lesson differ? Did it change student outcomes?
3. How do you think the future practice of these teachers might be affected by their participation in this lesson study cycle?
4. Consider your list of characteristics of good professional learning. How does the lesson study fit with or conflict with your ideas about good professional learning?
5. During which part of the lesson study process did you feel the most beneficial for your professional learning?

Protocol adapted from *Lesson Study Step by Step: How Teacher Learning Communities Improve Instruction*, by Lewis and Hurd, 2011, Heinemann.

Appendix G

Teacher's Sense of Self-Efficacy Survey

INSTRUCTIONS: Several statements about organizations, people, and teaching are presented below. The purpose is to gather information regarding the actual attitudes of educators concerning these statements. There are no correct or incorrect answers. We are interested only in your frank opinions. Your responses will remain confidential. Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

Teachers' Sense of Efficacy Scale[1] (long form)

Teacher Beliefs 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.	How much can you do? 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 form 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 H

Semi-Structured Interview Questions

Time:

Date:

Place:

Interviewer:

Interviewee:

Position of the interviewee:

Description of the project/script: "Thank you for meeting to discuss your first year(s) as a classroom teacher. This interview is for educational research purposes, and your name will not be used when reporting the data. I will be recording this session and transcribing our answers for my analysis. The research will utilize a congruent triangulation of mixed method of data collection to determine the teacher efficacy of novice teachers. Data collection will concentrate on the research question: What role does lesson study have on novice teacher's self-efficacy development? This research will provide insights into the effectiveness of lesson study cycle and its impact on the development of self-efficacy. I appreciate your assistance."

1. Tell me why you entered the teaching profession.
2. Prior to lesson study, on average, how often do you work collaboratively with your colleagues to discuss subject matter curriculum and student outcomes? If so, can you give me an example of what that conversation sounds like?

3. On your Teachers' Sense of Self- Efficacy Survey your scored changed from _____ to _____ in reference to 'How much can you do to get students to believe they can do well in school work?'. Tell me more about your score change.
4. On your Teachers' Sense of Self- Efficacy Survey your scored changed from _____ to _____ in reference to 'How well can you implement alternative strategies in your classroom?'. Tell me more about your score change.
5. On your Teachers' Sense of Self- Efficacy Survey your scored changed from _____ to _____ in reference to 'How well can you establish a classroom management system with each group of students?'. Tell me more about your score change.
6. How did your involvement with lesson study impact your thinking of student engagement?
7. How did your involvement in lesson study impact your thinking on instructional strategies?
8. How did your involvement in lesson study impact your thinking of classroom management?
9. Define a reflective practitioner. Provide examples of how you are a reflective practitioner.

"Thank you for your dedication to the teaching profession and participation in this interview. Be assured your responses are for research purposes and will remain confidential."

Appendix I

Structured Focus Group

Script: "Thank you for participating in a focus group for novice teachers. I am Taylor Hering, the group facilitator, note-taker, and recorder. We will now go around the room and introduce ourselves with our name and role at Mockingbird High School."

(Pause for each participant to introduce themselves)

"Before we get started, I would like to give you background on why we are here and how we will conduct the focus group. This focus group is to better understand your experience as a novice teacher and your participation in a lesson study cycle. I would like to go over a few ground rules for the focus group. These are to ensure that all of you feel comfortable sharing your experience:

1. Confidentiality– Please respect the confidentiality of your peers. This interview is for educational research purposes only. Your name will not be used when reporting the data.
2. One Speaker at a Time– Only one person should speak at a time to make sure we can hear what each individual is saying.
3. Open Discussion– This is a time for everyone to feel free to express their opinions and viewpoints. You will not be used to reaching a consensus on a topic discussed. There will be no right or wrong answers.
4. Participation–It is crucial for everyone's voice to be shared and heard. To make this a productive discussion, everyone needs to add to the conversation.

Are there any questions before we get started?"

(Pause for questions)

"Again, I would like to extend my appreciation for your participation here today. The first question is…

1. Tell me a little background of yourself and why you entered the teaching profession.
2. During the lesson study experience, what did you learn about the subject matter and about the curriculum?
3. What did you learn about student thinking and about teaching?
4. Describe how you worked together in a way that supported professional learning and personal motivation.
5. What insights did you gain from this lesson study cycle about productive habits in your learning practices as teachers, such as:
    - anticipation of student thinking?
    - Study and comparison of curriculum?
    - Drawing on outside knowledge resources (research, subject matter specialists, etc.)?
    - Careful observation of student learning?
6. Was our work efficient? What worked well about lesson study process and what needs to be changed?
7. Reflecting on your experience in lesson study, what impact does lesson study have on your role as a teacher moving forward?
8. What suggestions do you have for future novice teachers?

"That was the final question. Is there anything else that anyone would like to share or any additional comments concerning what we talked about today?"

(Pause for questions and comments)

"This concludes our focus group. Thank you for your participation. If you have any questions regarding this study, please feel free to contact me via email."

Appendix J

Journaling Protocol

Directions: Think about your experience working with the group and/or observing the lesson. Your answers do not necessarily need to be related to the events that occurred within the official context of the lesson study experience, but should be related to your work as a reflective practitioner. Write your answers to the following questions after each portion of the lesson study cycle---lesson development, teacher observation and debriefing meeting. All entries should be recorded in the notebook provided or kept on a typed document. Entries will be collected at the end of the research study.

Teachers Name:

Date:

Time:

1. Describe your mood prior to the lesson study development session, teacher observation, or debriefing meeting.
2. Recall the events of today's lesson study cycle.
3. What portions of the lesson study cycle went well?
4. What portions of the lesson study needs to be improved upon?
5. What impact does lesson study have on your role as a teacher moving forward?
6. Share other thoughts and feelings as you see fit.

Appendix K

Observer Field Notes

Observer:

Date:

Time of observation:

Place:

Situation (short description):

Persons involved:

Observation memo: