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Teacher Efficacy for Secondary General Education Teachers Supporting Students With Specific Learning Disabilities (SLD) in Inclusive Classrooms

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TEACHER EFFICACY FOR SECONDARY GENERAL EDUCATION TEACHERS SUPPORTING STUDENTS WITH SPECIFIC LEARNING DISABILITIES (SLD) IN INCLUSIVE CLASSROOMS

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While a considerable amount of research exists on teacher efficacy, few researchers have explored teacher efficacy at the secondary level in an inclusive classroom. Since teachers face many challenges in the classroom, several variables may exist as to what impacts a general education teacher's efficacy, particularly when working with students with specific learning disabilities (SLD).

Using a quantitative methodology involving a cross-sectional design, this exploratory study examined what elements affected the teacher efficacy of high school general education teachers when supporting students with identified SLD in inclusive classrooms. A total of 46 English and Algebra I general education high school teachers in 22 school districts in south-central Pennsylvania responded to survey questions.

Findings from the study indicate that implementing teacher focused strategies, experience teaching students with SLD, and teaching in economically disadvantaged classrooms were significant in predicting overall teacher efficacy. In addition, using teacher focused strategies and experience teaching students with SLD were significant for teacher efficacy for instructional strategies. Moreover, additional findings demonstrated that beliefs on inclusion, implementing student focused strategies, and training in special education significantly affected teacher efficacy for classroom management. Finally,

implementing student focused strategies and teaching in economically disadvantaged classrooms were significant for teacher efficacy for student engagement.

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my biggest cheerleaders. In addition, Amber Stephenson and Nicolette Bell plowed through some of the data with me. I appreciated all of the laughs and positive reinforcement each of you brought along the way.

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Before I started my first class in the doctoral program, I wrote a dedication to my late grandfather, Bruce Moran, as I knew this endeavor would be quite a journey. With that in mind, I would like to end this process where I began with this dedication: To my Pappap, who milked cows in the darkness in the early morning and mined coal in the blackness in the hills of West Virginia so that future generations could prosper and let their light shine.

And in all things, to God be the glory!

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CHAPTER 1

INTRODUCTION

On May 17, 1954, in the landmark case, *Brown v. Board of Education* (1954), the Supreme Court unanimously declared that separate educational facilities are inherently "unequal" and, as such, violated the 14th Amendment to the United States Constitution, which guarantees all citizens "equal protection of the laws." This decision led to a view that exclusion of children from schools based on race was unconstitutional. While this law paved the way for addressing discriminatory practices from a racial standpoint, it also had a lasting effect on eliminating discrimination and exclusion in general.

Before the 1970s, many states had laws permitting public schools to deny enrollment to children with disabilities (Murdick, Gartin, & Crabtree, 2006). However, the law and practice of separating students with disabilities was about to change. In 1973, Congress passed Section 504 of the Rehabilitation Act, an antidiscrimination statute that applied to any agency that received federal funds. This Act affirmed the principle that children with disabilities ought to be educated in regular classrooms (Rehabilitation Act, 29, U.S. § 794, Section 504, 1973). In 1975, Public Law 94-142 was passed and is known as *Education for All Handicapped Children* (1975). Since it became law in 1975, Congress has reauthorized and amended PL 94-142 five times (Heward, 2006). Then in 1990, amendments renamed the law the Individuals with Disabilities Education Act, often referred to as IDEA. The most recent reauthorization of IDEA is titled, The Individuals with Disabilities Education Improvement Act of 2004 (Heward, 2006).

IDEA is a federal law that combines both civil rights and education laws and has the following core requirements:

(1) All students with disabilities who are eligible to receive special education must be provided a Free Appropriate Public Education or FAPE. This means specially designed instruction related services that meet the unique needs of individual students and which should be provided in the least restrictive environment possible.

(2) The rights of every student with a disability and his or her family are ensured and protected through procedural safeguard. (McLaughlin, 2009, pp. 5-6)

With this federal law in place, public schools are now required to provide general education curriculum in the least restrictive environment to students with disabilities. For many students with disabilities, the least restrictive environment, as outlined in their Individual Education Plan (IEP), includes that some or all instruction occurs in the general education classroom (Tompkins Renfroe, 2006). Therefore, as more students with disabilities access the general education curricula and enter general education classrooms, school administrators must determine what elements may influence general education teachers' efficacy in order to support students with SLD in the classroom appropriately.

Statement of the Problem

Each year, the Pennsylvania Department of Education reveals the enrollment of school-age students (ages 5-21) by disability category. Table 1 indicates each disability category and the percent of special education enrollment, special education enrollment by disability, and percent of total student enrollment (Special Education in Pennsylvania: A Focus on Data-Driven Programs and Services 2013-14, Winter 2015). Displaying the percentage and number of students enrolled by disability category provides a snapshot of the range of the various disability categories as well as how many students were

identified in these categories in Pennsylvania. Students with SLD comprised 44% of the special education enrollment and approximately 7% of the total student enrollment.

Table 1

Enrollment of School-Age Students (Ages 5-21) by Disability Category 2013-14

Disability Category	Percent of Special Education Enrollment	Special Education Enrollment by Disability	Percent of Total Student Enrollment
Specific Learning Disability	44.30%	119,317	6.80%
Traumatic Brain Injury	0.26%	688	0.04%
Visual Impairment Including Blindness	0.42%	1,143	0.07%
Autism	9.36%	25,198	1.44%
Speech or Language Impairment	15.81%	42,593	2.43%
Deaf-Blindness	0.03%	76	0.00%
Hearing Impairment Including Deafness	1.02%	2,734	0.16%
Emotional Disturbance	8.42%	22,684	1.29%
Intellectual Disability	6.71%	18,072	1.03%
Multiple Disabilities	1.10%	2,963	0.17%
Orthopedic Impairment	0.28%	765	0.04%
Other Health Impairment	12.29%	33,116	1.89%
Total	100%	269,349	15.36%

Over the past decade, the amount of time per day in the general education classroom has increased for a growing number of students with disabilities. According to the U.S. Department of Education (2003), up to 83% of students with disabilities spent a significant amount of their day in general education classes. In Pennsylvania from 2003-2004 to 2013-2014, the percentage of students with disabilities who spend 80% percent or more of the day in the general education classroom increased from 44% to 63% (Special Education in Pennsylvania: A Focus on Data-Driven Programs and Services 2013-14, Winter 2015). Specifically, the Pennsylvania Department of Education reported that 51% of the students with SLD spent 80% or more of the day in the general education class (Educational Environment for Penn Data Reporting, IDEA Implementation of the FAPE Requirements, Section F, Part B, 2011).

Government statistics report that students who fall within the SLD category spend most of their time in the general education classroom, as opposed to the other types of disability categories. This research will therefore focus on this particular disability category. With the increase in inclusive education supported by federal and state laws and policies, general education teachers have found themselves faced with a new challenge; supporting students with disabilities and maintaining maximum teacher efficacy. As a result, with inclusion deemed effective and legally required, examining the variables that may impact teacher efficacy will prove pertinent to many school districts.

Inclusion refers to a belief or philosophy that students with disabilities ought to be included in the general education classroom (Heward, 2006). By including students with disabilities in the general education classroom, these students will have more opportunities to access the general education curricula and standards aligned instruction

and work alongside peers that do not have disabilities (Inclusive Practices for Students Ages 14-21: Considerations and Concepts, PaTTAN Publication, 2013). While the law and the literature support including students with disabilities in the general education classroom, part of the problem may be to determine if the students are getting what they need because students with disabilities continue to evidence unacceptably high drop-out rates and low graduation rates (Goodman, Hazelkorn, Bucholz, Duffy & Kitta, 2011). Of those who do not complete high school, about 35% are students with learning disabilities (National High School Center, May 2007). If students do not complete high school, they tend to have increased risk for lower wages, higher rates of incarceration, and less access to postsecondary education (Goodman et al., 2011). Therefore, unintended consequences may exist with inclusion; however, by examining teacher efficacy in supporting students with SLD, it may be possible to determine what supports can be put in place for general education teachers in order for these teachers to support the students appropriately.

Research Question and Hypotheses

Including students with SLD in the general education classroom may impact the general education teachers' efficacy. If the majority of their training and background experiences focus on content, then teaching the content with students with SLD may be very challenging or the teachers may not know how to address the needs of the student with SLD appropriately. Therefore, the overall research question asked the following: What variables affect teacher efficacy for secondary general education teachers supporting students diagnosed with SLD?

The proposed hypotheses are as follows:

Hypothesis 1. A teacher's belief on inclusion has a direct relationship to teacher efficacy.

Hypothesis 2. A teacher's level of training in special education has a direct relationship to teacher efficacy.

Hypothesis 3. A teacher's instructional repertoire and use of instructional strategies has a direct relationship to teacher efficacy.

Hypothesis 4. A teacher's experience working with students with SLD has a direct relationship to teacher efficacy.

Proposed Methods

The dependent variable for this study pertains to teacher efficacy. Teacher efficacy involves a belief or judgment as to whether or not the teacher or individual has the necessary capabilities to render desired outcomes of student learning and engagement, even among those students who may be unmotivated or difficult (Gibson & Dembo, 1984; Gotshall & Stefanou, 2011; Tschannen-Moran & Woolfolk Hoy, 2001). Soodak and Podell (1993) found that general and special educators with a high sense of teaching efficacy were most likely to be supportive of inclusive placements. Tschannen-Moran and Woolfolk Hoy (2001) devised a measurement of teaching efficacy based on items that represent specific teaching tasks in contextual classroom situations. According to Tschannen-Moran and Woolfolk Hoy (2001), there appears to be three unique dimensions that comprise of teacher efficacy: student engagement, instructional strategies, and classroom management. Therefore, this study employed teacher efficacy using those three unique dimensions as well as overall teacher efficacy as dependent variables.

This study also included the following constructs grounded within the literature as independent variables. First, teacher beliefs about inclusion can either support or undermine inclusive classrooms (de Bettencourt, 1999). Second, Smith and Smith (2000) noted that classroom support was one factor that had the greatest effect for teachers when working with students with SLD in an inclusive classroom. Third, teacher training, particularly regarding special education, plays a fundamental role in how teachers support students appropriately in the classroom (Sankar, 2007). Fourth, McLeskey and Waldron (2002) found that good collaboration and communication among all members of the inclusion team enhances inclusion programs. The type of collaboration considered for this study pertains to the general education teachers working with the special education teachers as well as general education teachers collaborating with other general education teachers within their perspective departments. Fifth, in a meta-synthesis of qualitative research conducted by Scruggs, Mastropieri, & McDuffie (2007), co-teaching demonstrated a positive effect on student achievement, and the administrators, teachers, and students perceive co-teaching to be socially and academically beneficial to general and special education students. Sixth, a school's administration needs to project a clear vision that empowers the faculty to achieve greatness within themselves and for their students (Worrell, 2008). Therefore, this study examined the amount of administrative support as manifested through how often the administrator or principal articulated the positive value of including students with IEPs for SLD in the general education classroom. Seventh, a teacher's instructional repertoire remains a critical consideration in teacher quality whether teaching students with or without disabilities, and this repertoire should be based upon research and evidence-based practices. Hence, this study focuses

on high leverage instructional strategies researched by Marzano, Pickering, & Pollock (2001) and Marzano (2007) (e.g., tracking student progress, setting objectives, providing feedback, summarizing, note taking, etc.). Eighth, teacher characteristics may relate to teacher efficacy (e.g., the number of years of teaching experience, the number of years of experience teaching students with SLD). Eighth, student demographics also provide information that may relate to teacher efficacy (e.g. the number of students with SLD in the classroom as compared to the total number of students). Finally, school demographics get taken into consideration as variables that may relate to teacher efficacy (e.g., urban, rural, or suburban setting).

A quantitative method of study involving a sample of high school teachers who teach ninth grade English and high school students taking Algebra I in south-central Pennsylvania proposed to answer the research question. Since most high schools begin with the ninth grade, that particular year becomes the make or break year for completing high school. During the ninth grade year, many students must earn passing grades in core courses for the first time, and the core courses tend to involve the toughest and most rigorous academic classes a student must take in high school (McCallumore, 2010). The survey, Teachers' Sense of Teacher Efficacy Scale, developed by Tschannen-Moran at the College of William and Mary and Hoy at Ohio State University, along with questions developed via a review of the literature, serves to measure and determine which variables may affect teacher efficacy for general education high school teachers supporting students with SLD.

Researcher Position

I am an educational consultant with the Pennsylvania Training and Technical Assistance Network (PaTTAN) located in Harrisburg. The Pennsylvania Training and Technical Assistance Network is an initiative of the Pennsylvania Department of Education working in partnership with families and local education agencies to support programs and services to improve student learning and achievement. Our goal for each child is to ensure Individualized Education Program (IEP) teams begin with the general education setting with the use of Supplementary Aids and Services before considering a more restrictive environment. Therefore, I provide training, consultation, and support which focuses on providing the best supports and services for students to be successful throughout their public school experience.

Since elementary school, teaching became a calling for me. I can remember as early as fourth grade setting up filmstrips and providing detailed lessons and activities for younger students based on the topic of the filmstrip. After I acquired a bachelor's degree in literature and secondary education, I taught for four years in Philadelphia. During those years, I worked with high school dropouts and prepared them for the GED as well as elementary students in first through eighth grade in remedial reading and mathematics. Before I began my teaching career, my preservice experience prepared me to teach literature, but was lacking in how to service students reading below grade level or students with disabilities. I recall having one class on special education with a number of practicum hours observing special education classrooms, but it was limited in scope compared to what I needed to know in order to teach the students who sat in front of me on a daily basis.

While teaching, I felt compelled to delve into the policy arena because I wanted to have an impact in education at a meso and macro level versus a micro level. I saw firsthand how certain policies at the federal and state level infused their way into the local school districts and the classroom, and I wanted to be part of the decision-making process at the federal or state level. Therefore, I acquired a master's degree in sociology of education and educational policy.

With a master's degree in hand, I became an educational consultant with the Success for All Foundation and observed hundreds of classrooms in New York City and the Mid-Atlantic states with regards to the implementation of a particular reading program. This position provided an opportunity to observe classrooms in urban, rural, and suburban districts which comprised of students with and without disabilities. It was amazing to see struggling readers learn how to read successfully and advanced readers accelerate beyond their grade level. However, after the extensive travel required for Success for All, I came to PaTTAN and focused my work on what could be done at the state level for students with and without disabilities.

As delineated above, my career has focused on the general education classroom and primarily at-risk students. I have observed hundreds of classrooms and trained thousands of teachers and administrators on topics which include but are not limited to: effective instructional practices, data-based decision making, reading interventions and best practices, instructional leadership, and special education services. I bring to this study much experience and certainly some preconceived notions about what types of qualities correlate with successful teaching and effective teachers. However, I have a strong desire to discover information from teachers themselves who are in the classroom

everyday working with all types of students and could subsequently contribute to the literature in the field of teacher efficacy in order to make inclusive classrooms even better.

Purpose of the Study

This study sought to gain insight and clarification as to what elements may influence teacher efficacy for secondary general education teachers supporting students with SLD in an inclusive secondary classroom. Teacher beliefs about inclusion, classroom support, teacher training, teacher collaboration, co-teaching, administrative support, teacher's instructional repertoire, teacher characteristics, student demographics, or school demographics were considered in order to determine what variables, if any, played a significant role in the degree of teacher efficacy. By examining the results of this study, school district personnel, school administrators, school consultants, general educators, special educators, and paraprofessionals may work together to better ensure that efforts are put into place to support general education teachers. By doing so, the school districts have the opportunity to effectively enrich teacher development which will in turn lead to effective inclusion for students with SLD in the secondary general education classroom.

Significance of the Study

In the United States**,** students with SLD make up 5% of the total school population (Salend, 2011). In Pennsylvania, students with SLD comprise close to 7% of the total school population, which equates to roughly to 119,317 students ages 5-21 (Special Education in Pennsylvania: A Focus on Data-Driven Programs and Services 2013-14, Winter 2015). As compared to other disability categories, students with SLD

remain the largest and fastest-growing groups of students with diagnosed disabilities (Mercer & Pullen, 2009). With more students with SLD included in the general education classroom, the general education teachers receive ever greater numbers of students with SLD. Yet, teachers may find many barriers and challenges before them and not possess the necessary skills and/or supports to facilitate inclusion effectively.

However, according to IDEA, in order to meet the needs of general educators serving on the students' planning teams, the law states that general educators must be included on each state's Comprehensive System of Personnel Development committee, which plans the pre-service and in-service education for those serving students with disabilities (Buell, Hallam, Gamel-McCormick, & Scheer, 1999). In keeping with this trend, the Commonwealth of Pennsylvania specifically adopted a new Education Effectiveness Project. Beginning with the 2013-14 school year, professional employees and temporary professional employees who provide direct instruction to students related to a specific subject or grade level [classroom teachers] will be evaluated by the rating system requirements of Act 82 (American Federation of Teachers of Pennsylvania, Frequently Asked Questions, Act 82 of 2012 Teacher Evaluation Requirements). According to the Pennsylvania Department of Education, the purpose of the Education Effectiveness Project is "to develop an educator effectiveness model that will reform the way we evaluate teachers, educational specialists, and principals as well as the critical components of training and professional growth" (Pennsylvania Department of Education, 2013).

Specifically, "Pennsylvania is actively engaged in improving teaching and learning by implementing better teacher, educational specialist, and principal evaluation

systems and providing these professionals with the feedback they need to improve their practice" (Pennsylvania Department of Education, 2013). The outcomes from this study may augment findings from these evaluations by providing additional guidance for developing interventions geared toward enhancing teacher efficacy for general education high school teachers supporting students with SLD. The overarching challenge in this area follows that while teachers may believe and support the justifications behind the laws that include students with SLD in the general education classroom, these same teachers may not have the necessary knowledge, skills, and preparation to support and facilitate appropriate and effective inclusion. Therefore, by isolating elements that significantly relate to teacher efficacy and the implementation of effective inclusion, school districts and personnel could better plan and prepare general education high school teachers to support students with SLD in the general education classroom.

Definition of Terms and Assumptions

Definition of Terms

The following list offers definitions for terms and ideas presented in this study:

Students with specific learning disabilities (SLD). In Pennsylvania, the disability category, SLD, refers to students with learning disabilities. This type of disability means a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language, which may appear as an impaired ability to listen, think, speak, read, write, spell, or do mathematical calculations (Salend, 2011). It includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (Salend, 2011).

Individual Education Plan (IEP). An IEP takes the form of a document that outlines a program of education for a student with disabilities. This plan includes goals, modifications, progress, and the placement or amount of time the student spends in the general education classroom (Tompkins Renfroe, 2006).

Least Restrictive Environment (LRE). This refers to an environment which requires schools to educate students with disabilities as much as possible with their peers who do not have disabilities (Schwarz, 2007).

Inclusion. Inclusion refers to a belief or philosophy to educate students with disabilities in the general education classroom (Heward, 2006). Putting inclusion into practice involves a commitment to include students with disabilities in various settings and provide the appropriate supports in the general education classrooms in order for those students to have the opportunity to learn and work alongside individuals without disabilities and access highly qualified instructors in certain content areas, the general education curriculum, and standards-aligned instruction (Inclusive Practices for Students Ages 14-21: Considerations and Concepts, PaTTAN Publication, 2013).

Full Inclusion. When all students with disabilities, regardless of the severity of the disability, are educated for the entire day in general education classrooms while receiving only supportive services from the special education teacher, full inclusion is in place (Kauffman, Landrum, Mock, Sayeski, & Sayeski, 2005).

Partial Inclusion. This practice involves educating students with disabilities in general education classrooms for some portion of their school day, while for the other portion of the day the students receive instruction in a special education classroom or

resource room outside of the mainstream (National Information Center for Children and Youth with Disabilities (NICHCY), 1995).

Assumptions

This study presupposed several assumptions. First, the teachers participating in this study express their true perceptions and experience when responding to the survey questions. Also general education teachers typically have access to a student's IEP. Therefore, an assumption exists that the teachers identify the students and correct number of students with an IEP for a SLD in their classrooms.

Limitations and Delimitations of the Study

With any study, certain limitations and delimitations exist. First, since the ninth grade is a critical year when starting high school, participation in this study concentrates on certified secondary teachers who teach ninth grade language arts/English and Algebra I in public high schools in south-central Pennsylvania; therefore, multiple grade levels are not considered for English, but may be considered for students in Algebra I. By concentrating on these two subject areas, it can be determined if differences exist between these two subject areas which impact other subject areas. Specifically, English language arts and Algebra I encompass technical and nontechnical skills and critical thinking which are also necessary and required in other courses that students will take and encounter. In addition, these subject areas coincide with the SATs, which report on verbal and quantitative skills. Second, while the results of the study exclude representation of students from other disability categories, it does target the largest population of students with disabilities -- students with SLD. Since slightly more than half of the students receiving special education services have SLD (Mercer & Pullen,

2009), more of these students are included in the general education classroom and general education teachers would have more interaction with these students than students from other disability categories. Third, the variables affecting teacher efficacy are measured on a Likert-type scale instrument designed specifically for the proposed study for the independent variables. While reliability and validity measures do not exist for such questions, those questions are designed around the existing literature. Fourth, the dependent variables will be measured using while The Teachers' Sense of Teacher Efficacy Scale. An Ordinary Least Squares (OLS) regression model was utilized to determine which variables are statistically significant with this particular sample of teachers. Finally, while this study maintains boundaries within south-central Pennsylvania, it is purposeful in nature and provides a sample that is rich in cases for in-depth analysis. Meanwhile, it remains feasible to conduct in scope with limited resources.

Summary of Chapter 1

With the increase of including students with disabilities in the general education classroom, supported by federal and state laws and policies, secondary general education teachers have found themselves faced with a new challenge; supporting students with disabilities and maintaining maximum teacher efficacy. Particularly as more students with SLD access the general education curricula and enter general education classrooms, teachers, administrators, and school personnel must examine what elements may impact general education teachers' efficacy. By determining what those variables are, students with SLD have a better chance of interacting and being taught by a general education teacher who can support them effectively.

Chapter two begins by describing the historical background in special education and inclusion. The history of the law, special education policy, and standards-based reform provides a context and backdrop for this study. The chapter discusses the form that general education takes in an inclusive classroom and the current research on teacher efficacy. While research in this area exists, few researchers have explored teacher efficacy in the context of an inclusive classroom at the secondary level. Therefore, further research seems necessary. This chapter also addresses the conceptual perspectives of teacher efficacy and presents the evolution of teacher efficacy research. Uncovering the elements influencing teacher efficacy and inclusion provide an understanding concerning the completion of research and indicates necessities for further research. Finally, the conceptual framework depicted near the end of the chapter, illustrates the underpinnings for this study and the related research question.

Chapter three elaborates on the quantitative approach that is applied in this study. An electronic survey, The Teachers' Sense of Teacher Efficacy Scale along with questions aligned with the current literature, is administered in order to provide empirical evidence to answer the research question. This chapter also describes the specific research design, survey, variables and their definitions, unit of analysis, sample and size, data collection and analysis, limitations and weaknesses, and ethical considerations. Chapter four summarizes the results and findings of the study and provides a multivariate analysis of the final regression model. Finally, that last chapter addresses the research question and proposed hypotheses, reviews the findings and provides recommendations to various stakeholders, outlines the limitations and delimitations of the study, provides suggestions for future research, and offers a summary and conclusions.

CHAPTER 2

LITERATURE REVIEW

Teachers face many challenges in the classroom and several variables may exist as to what impacts a general education teacher's efficacy, particularly when working with students with SLD. This study examined what classroom or teacher dynamics, if any, affect the teacher efficacy of high school English and Algebra I general education teachers when supporting students with identified SLD in inclusive classrooms. Specifically, it explored several variables that may have a relationship to overall teacher efficacy as well as a teacher's efficacy in student engagement, in instructional strategies, and in classroom management.

The literature review begins with background information outlining the history of special education, introduces the differences between mainstreaming and inclusion, discusses the relevancy of the standards-based reform movement, and presents the role of the general education teacher in inclusive classrooms. The chapter then focuses attention on research surrounding teacher efficacy and points out existing knowledge gaps. Then, the conceptual perspectives of teacher efficacy are examined along with certain elements as they pertain to teacher efficacy and inclusion. Finally, the chapter ends with the conceptual framework, research question, and chapter summary.

Historical Background

Including students with disabilities in the general education classroom encompasses decades of federal and state law policies. In order to address how, when, and where to provide a "free appropriate public education" for all students regardless of any disability entails complexity for school districts and for the teachers supporting

students in an inclusive classroom. A review of the legal aspects of special education provides a context and backdrop as to how mainstreaming students to including students with disabilities surfaced. While the law of including students with disabilities in the general education classroom roots itself in social and educational policy, other laws and policies impact the classroom today with the standards-based reform movement. As a result of these legal mandates, several variables emerge that may influence teacher efficacy which in turn could impact the teacher's ability to teach in an inclusive classroom.

The Legal Aspects of Special Education

In the landmark court case, *Brown v. Board of Education* (1954), Chief Justice Earl Warren rules that "separate is not equal." While this decision overturned state laws authorizing or allowing racial segregation in primary and secondary schools, this case also spurred parents of students with disabilities to organize in groups such as the National Association for Retarded Citizens (now known as the Arc) and initiate advocacy activities for educating their children with disabilities (Falvey & Givner, 2005). As a result of the persistence of those parents, Congress authorized funds in 1958 to support preparing special education teachers (Kliewer & Biklen, 2001). However, even though considerations were made to prepare teachers to support students with disabilities, prior to the 1970s, many public schools in the United States denied enrollment to children with disabilities, and the laws permitted this practice (Murdick, Gartin, & Crabtree, 2006).

As pressure continued to educate students with disabilities, the U.S. legal system responded. In 1971 in Pennsylvania and in the District of Columbia in 1972, court decisions recognized the right of all children identified as 'mentally retarded' to a "free

and appropriate education" (Falvey & Givner, 2005, p. 16). Such court rulings provided more avenues for students with disabilities to be included rather than excluded from public schools. Further, in 1973, the Rehabilitation Act, Section 504, and later amendments warranted the rights of people with disabilities in educational institutions and in employment sites that receive federal monies (Falvey & Givner, 2005). Consequently, due to the persistence of the legislatures, courts, and parents, Public Law (P.L.) 94-142 (Education for All Handicapped Children Act) passed in 1975 and enacted in 1978 (Falvey & Givner, 2005). With the passage of P.L. 94-142, every state subsidized and offered public school programs for students with disabilities (Falvey & Givner, 2005).

Since P.L. 94-142 became law in 1975, Congress has reauthorized and amended P.L. 94-142 five times (Heward, 2006). In 1990, amendments renamed the law the Individuals with Disabilities Education Act, often referred to as IDEA (Heward, 2006). The most recent reauthorization of IDEA is titled The Individuals with Disabilities Education Improvement Act of 2004 (Heward, 2006). With P.L. 94-142 as the impetus for IDEA, it remains the legal mandate propelling inclusive education into action. Even though the terms "*inclusion* and *inclusive education* cannot be found in P.L. 94-142, the definition of *least restrictive environment* (LRE)" endures as a key component of the law (Falvey & Givner, 2005, p. 3, emphasis in original). In order to create a least restrictive environment or implementing inclusive education, the law states the following:

> …to the maximum extent appropriate, handicapped children, including those children in public and private institutions or other care facilities are educated with children who are not handicapped, and that special classes, separate

> schooling, or other removal of handicapped children from regular education environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily. (P.L. 94-142, § 1412 [5] [B], 1975)

Mainstreaming vs. Inclusion

When P.L. 94-142 passed in 1975, it became known as the "mainstreaming law." This law required states to provide a free appropriate public education for children with disabilities aged 15-18 in the least restricted environment (Sankar, 2007). Mainstreaming provided a means to educate students with disabilities in partial or full-time programs with their general education peers (Salend, 2011). However, mainstreaming operated in the sense that a selected learner earned his or her way into general education classes based on their readiness as determined by educators; whereas, inclusion stands on the belief that all learners have the right to be educated in the general education classroom (Salend, 2011). Since including students with disabilities became viewed as a right, the term, inclusion, replaced the term, mainstreaming, in most public school settings in the US (Salend, 2011). While some individuals interchange the terms, mainstreaming and inclusion, the two terms suggest different beliefs of when and how a student accesses and becomes included in the general education classroom.

This study adopts Heward's (2006) definition of inclusion, which refers to inclusion as a belief or philosophy to educate students with disabilities in the general education classroom. Putting inclusion into practice involves a commitment to include students with disabilities in various settings and provide the appropriate supports in the general education classrooms. By doing so, those students have the opportunity to learn

and work alongside individuals without disabilities and access highly qualified instructors in certain content areas, the general education curriculum, and standards-aligned instruction (Inclusive Practices for Students Ages 14-21: Considerations and Concepts, PaTTAN Publication, 2013).While the law mandates providing the least restrictive environment for students with disabilities and most schools have moved away from mainstreaming in which students with disabilities must earn their way into the general education classroom, other laws and policies come into play in the public school arena.

Standards-Based Reform Movement

On January 8, 2002, President George W. Bush reauthorized the Elementary and Secondary Education Act (ESEA) with the landmark passage of the No Child Left Behind Act of 2001 (NCLB Act) (No Child Left Behind, 2004). The NCLB Act incorporates a number of measures to increase student achievement and holds states and schools accountable for student progress. According to the U.S. Department of Education (2002), one such measure of achievement that school districts and schools must demonstrate is adequate yearly progress (AYP) as measured by statewide targets in the areas of reading and mathematics. All groups of students in grades 3-8 must reach proficiency by 2014 (U.S. Department of Education, 2002). Presently, at least 24 states require exit exams that students must pass to graduate from high school with a standard diploma and Pennsylvania is one of those states with the Keystone Exams (Deshler, Schumaker, Bui, & Vernon, 2006).

The NCLB legislation became groundbreaking in the sense that public schools must report achievement outcome for all students by disaggregating their data into key subgroups, and students with disabilities constitute one of these subgroups (Deshler et al.,

2006). In many cases prior to the passage of NCLB, students with disabilities were left out of the sample of scores reported. The National Assessment of Educational Progress (NAEP) reported that most students with disabilities were not taking state assessments (Sack, 2000).

With the reauthorization of IDEA in 1997 and with the NCLB Act, the focus for including students with disabilities in the general education classroom shifts "from *physical* access to general education classes to *real* access to the general education curriculum and improved educational performance" (Deshler et al., 2006, p. 9, emphasis in original). Real access means students with disabilities have access to challenging curricula and educational programs based on high expectations (Deshler et al., 2006).

The demands associated with required high school courses are rigorous and intend to be as more and more states adopt Common Core State Standards and prepare students for the post-secondary outcomes of college and career. At the present time, 45 states, the District of Columbia, and four territories adopted the Common Core State Standards (Common Core State Standards, 2013). The National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO) led the development of the Common Core State Standards (Common Core State Standards, 2013). While Pennsylvania adopted the Common Core State Standards, the Commonwealth aligned existing academic standards to those standards. As a result, Pennsylvania adheres to PA Core Standards. The standards are designed to be robust and relevant to the real world in order to ensure that students graduating from high school have the knowledge and skills as they enter college programs or the workforce (Common Core State Standards, 2013). Hence, the demands placed on secondary general education teachers supporting students with

disabilities mounts with federal and state legislation with regards to special education, accountability measures for students and subgroups of students, and standards-based reform with the Common Core State Standards.

The Role of General Education Teachers in Inclusive Classrooms

While the laws focus on students with disabilities, this study specifically focuses on students with SLD. In the US, slightly more than half of the students receiving special education services have SLD, making them the largest and fastest-growing group of students with diagnosed disabilities (Mercer & Pullen, 2009). In Pennsylvania, students with SLD comprise approximately 7% of the total school population, which equates to roughly 119,317 SLD students ages 5-21 (Special Education in Pennsylvania: A Focus on Data-Driven Programs and Services 2013-14, Winter 2015). With the rising number of students identified with SLD, the general education teachers receive ever greater numbers of students with SLD as in accordance with IDEA. In addition, NCLB produces accountability measures for this subgroup and currently students in Pennsylvania must pass a Keystone Exam in literature, biology, and Algebra I to graduate from high school.

Supporting students with SLD remains a challenging prospect. Many students with SLD entering required general education courses do not possess the prerequisite skills for success (Deshler et al., 2006). In many cases, students with SLD enter high school reading, on average, at the fourth-grade level (Deshler et al., 2006). Thus, students reading at the fourth-grade level will struggle comprehending and gleaning information from a text written at the ninth grade level or higher. With regards to mathematical skills, a large portion of the students with SLD have mastered basic facts of addition and subtraction with whole numbers, but have not mastered multiplication, division, or work

with fractions and decimals (Warner, Schumaker, Alley, & Deshler, 1980). Students with such deficits find it very difficult to successfully complete an algebra course.

Regardless of encroaching educational challenges, the policy and underlying process of inclusion assumes that the general classroom teacher will provide the appropriate supports for all students. In order to provide this type of support, teachers need to acquire the necessary knowledge and understanding about the needs of different learners, appropriate teaching techniques, and use of curriculum strategies (European Agency for Development in Special Needs Education, 2010). However, many teachers indicated that this assumption does not hold true. Schumm and Vaughn (1995) noted that, "teachers report that they lack the knowledge, skills, and confidence…to plan and make instructional adaptations for students with disabilities" (p. 172). In order to provide equal opportunities for all students and develop an inclusive society, the need for 'high quality' teachers equipped to meet the needs of all learners becomes evident (European Agency for Development in Special Needs Education, 2010). Further, Reynolds (2001) indicated the knowledge, beliefs, and values that the teachers bear create an effective learning environment for pupils. Therefore, the teacher becomes a critical influence in education for inclusion and the development of the inclusive classroom and school.

While teachers hold the key to developing and sustaining an inclusive environment that includes supporting students with SLD appropriately, they do not always possess the background knowledge or expertise to support such students. As a result of this dissonance, teacher efficacy may be compromised and impact the quality of instruction that students receive. If a teacher's efficacy becomes compromised in teaching in such an environment, it becomes unlikely that the inclusive classroom will result in

positive student behaviors and outcomes. As Coladarci (1992) found, teacher efficacy, when compared with such factors as income and school climate, became the strongest predictor of a teacher's commitment to the teaching profession. Therefore, this study sought to examine what elements, if any, influence teacher efficacy for high school English and Algebra I teachers supporting students with SLD.

Research on Teacher Efficacy

When the classroom environment involves teaching students with SLD, teacher efficacy becomes an important variable (Brady & Woolfson, 2008). Teacher efficacy involves a belief or judgment as to whether or not the teacher or individual has the necessary capabilities to render desired outcomes of student learning and engagement, even among those students who may be unmotivated or difficult (Gibson & Dembo, 1984; Gotshall & Stefanou, 2011; Tschannen-Moran & Woolfolk Hoy, 2001). Various studies identified the relationship between the beliefs of teacher efficacy and student outcomes (Ashton & Webb, 1986; Guskey, 1988; Moore & Esselman, 1992; Ross, 1992; Woolfolk & Hoy, 1990). Midgley, Feldlaufer, & Eccles (1989) noted a relationship between teachers' sense of efficacy and motivation while Anderson, Greene, & Loewen (1988) found that teacher efficacy relates to the students' own sense of efficacy. Also a teacher's sense of efficacy influences one's efforts in employing effective teaching practices, setting goals, and levels of aspiration (Tschannen-Moran & Woolfolk Hoy, 2001). In particular, Stein and Wang (1988) noted that teachers with a strong sense of efficacy became more open to modifying teaching methods to accommodate student needs. Meijer and Foster (1988) reported that teachers' high sense of efficacy related directly to their inclination to include students with special needs in regular schools.

Soodak and Podell (1993) found that regular and special educators with a high sense of teaching efficacy were most likely to be supportive of inclusive placements. Specifically, the teachers with high efficacy were more inclined to take responsibility for supporting students with learning difficulties and meeting their needs in their own classrooms (Brady & Woolfson, 2008). When examining the relationship between empowerment, job satisfaction, and job commitment in general education teachers, Wu and Short (1996) discovered that teacher self-efficacy surfaced as a significant predictor of both job satisfaction and job commitment. Additionally, among general educators, teacher self-efficacy had an inverse correlation with perceived levels of burnout (Friedman, 2003). Therefore, examining elements that may affect teacher efficacy becomes an imperative in order to support and sustain effective inclusive classrooms.

While these studies provide great promise in the area of teacher efficacy, several gaps seem to exist within the research. First, many of these studies were conducted prior to the passage of NCLB in 2002, which encompasses higher standards and places more accountability on general education teachers supporting students with SLD. Therefore, this legislation may influence the teachers' sense of efficacy with the additional demands it places on teachers and students. Second, some of the studies included high school teachers, but others focus on teacher efficacy for middle school and elementary teachers. High school teachers face different challenges than elementary or middle school teachers as the content becomes more complex and the achievement gap between general education students and students with SLD tends to widen as the students enter high school. In addition, some studies suggest that practicing elementary teachers have significantly higher efficacy beliefs than do those at the middle or secondary levels

(Midgley, Anderman, & Hicks, 1995; Wolters & Daughtery, 2007). While in contrast, other studies report no significant differences in efficacy beliefs by teaching level (Chester & Beaudin, 1996; Ross, 1994; Soodak & Podell, 1996). Third, the conceptualization of teacher efficacy faces challenges on the grounds that teacher efficacy remains context specific and varies across participants (Ross, Cousins, & Gadalla, 1996) and across different student groups (Raudenbush, Rowen, & Cheong, 1992). Bandura (1997) noted that a teachers' sense of efficacy is not necessarily uniform across different domains of content and subjects. Tschannen-Moran & Woolfolk Hoy (2001) mentioned the many different types of tasks teachers are required to do can affect teacher efficacy. Further, other researchers showed that a teacher's belief in his or her instructional efficacy is not consistent when presented with different subject matter or students with diverse needs (Goddard, Hoy, & Hoy, 2000; Knoblauch & Hoy, 2008). As a result of these inconsistencies, further inquiry and research as to what elements may affect teacher efficacy for secondary general education teachers supporting students with SLD within the context of the standards-based reform movement and an inclusive classroom seems necessary.

Conceptual Perspectives of Teacher Efficacy

While the definition of efficacy tends to vary, most definitions trace back to psychological research conducted by Heider in 1958 and White in 1959 (Guskey & Passaro, 1994). In an early reference to "teacher efficacy," Barfield and Burlingame (1974) defined efficacy as "a personality trait that enables one to deal effectively with the world" (p. 10). Bandura's (1977) research on self-efficacy served as the theoretical and empirical underpinnings for future studies and other researchers followed suit with

regards to defining and researching teacher efficacy. Teacher efficacy remains a powerful construct and capturing its meaning continues. The following review discusses the conceptual perspectives of teacher efficacy and how it became defined and measured.

Bandura's Research on Self-Efficacy

Klassen and Lynch (2007) conducted a qualitative study to investigate the self-efficacy of early adolescents with learning disabilities (LD). During an interview, one adolescent commented that self-efficacy was a major contributing factor to his academic performance and described self-efficacy as 'a mental thing. If your brain says, like, I can do this, then you do way better' (p. 497).

This student's remarks reflect the work and research surrounding self-efficacy theory as a cognitive process and the idea that people can exercise some influence over what they do (Bandura, 2006a). In 1977, Albert Bandura provided one of the first theories of self-efficacy. Researchers credit Bandura's (1977) social cognitive theory of self-efficacy as the theoretical framework for studying the construct. Also, later research by Bandura continued to emerge and contributed to the development of teacher efficacy beliefs.

Bandura contended that human behavior becomes influenced by an individual's beliefs regarding two types of expectations: an outcome expectation, "a person's estimate that a given behavior will lead to certain outcomes," and an efficacy expectation, the "conviction that one can successfully execute the behavior required to produce the outcome" (Bandura, 1977, p. 193).

Within the context of teaching, an example of an outcome expectation occurs when the teacher believes that skillful instruction can offset the effects of a home

environment plagued by poverty (Coladarci & Breton, 1997). In this example, efficacy is shown not for one's self but, rather, for an abstract collective of teachers (Coladarci & Breton, 1997). In contrast, an example of an efficacy expectation results in the teacher's confidence that he or she personally has the capability of such instruction or one possesses personal agency with regards to the task of instructing effectively (Coladarci & Breton, 1997). Bandura then defined self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance" (Bandura, 1986, p. 391).

Bandura's research on self-efficacy ignited further interest with regards to defining and measuring efficacy. Within teacher efficacy research, two distinct components emerge in the literature: general teacher efficacy (the belief that external influences can be overcome by teaching) and personal teacher efficacy (the teachers' belief upon his or her own capability to bring changes in students) (Brady & Woolfson, 2008). Researchers studying teacher efficacy have administered and defined teacher efficacy with several different instruments from a few studies. A review of those studies follows.

RAND Organization

According to McLaughlin & Marsh (1978), RAND researchers defined efficacy as "the extent to which the teacher believes he or she has the capacity to affect student performance" (p. 84). Based on the work of Rotter (1966), the RAND organization implemented a study on teacher efficacy (Armor et al., 1976). Two aspects of teacher efficacy (TE) were included in the study and defined as follows: (1) "When it comes right down to it, a teacher really cannot do much because most of a student's motivation and

performance depends on his or her home environment" and (2) "If I try really hard, I can get through to even the most difficult or unmotivated students" (Chu, 2011, pp. 387-388). The first item asks teachers' beliefs about the power of external factors compared to the influence of teachers and schools and has since been identified as general teacher efficacy (GTE) (Tschannen-Moran & Woolfolk Hoy, 2001). The second item asks teachers about their confidence in their abilities as teachers to overcome factors that could make learning difficult for a student (Tschannen-Moran & Woolfolk Hoy, 2001). This indicator of efficacy notes personal teaching efficacy (PTE) (Tschannen-Moran & Woolfolk Hoy, 2001).

This study by RAND (Armor et al., 1976) showed that teachers' beliefs in their own capabilities significantly related to teachers' success in teaching reading to minority students in an urban context. Encouraged by the success of the RAND study, researchers continued to study teacher efficacy.

Ashton and Webb

Ashton and Webb (1982, 1986) incorporated Bandura's social cognitive theory into their research. They proposed a teacher's outcome expectations about the consequences of teaching in general emerged into a dimension of teacher efficacy. Ashton and Webb believed that this dimension was measured by the first RAND item with regards to general teacher efficacy (Guskey & Passaro, 1994). Then, the second dimension studied in the RAND report tapped into personal efficacy (Guskey & Passaro, 1994). According to Ashton and Webb, these two dimensions operate independently. In other words, teachers may believe that teaching becomes a potentially powerful factor in student learning, but teachers lack the personal ability to affect their own students

(Guskey & Passaro, 1994). On the other hand, other teachers may consider that teaching in general has little influence on students, but exceptions to the rule exist (Guskey & Passaro, 1994).

Gibson and Dembo

Spurred by the work of Ashton and Webb (1982) and rooted in Bandura's social cognitive theory (1977), Gibson and Dembo (1984) further defined teacher efficacy as a multidimensional construct comprised of these two relative, independent dimensions: teacher efficacy (outcome expectancy) and personal teaching efficacy (self-efficacy). Many studies investigating teacher efficacy used Gibson and Dembo's (1984) conceptualization and scale of teacher efficacy (Deemer & Minke, 1999). However, the conceptualization of teacher efficacy faces challenges on the grounds that teacher efficacy remains context specific and varies across participants (Ross, Cousins, & Gadalla, 1996) and across different student groups (Raudenbush, Rowen, & Cheong, 1992). Therefore, further research and measures seemed necessary to capture the construct of teacher efficacy.

Tschannen-Moran and Woolfolk Hoy

Tschannen-Moran and Woolfolk Hoy (2001) disputed that the general teacher efficacy component of the construct remains unconcerned with an individual teachers' sense of efficacy at all. In response to these criticisms, Tschannen-Moran & Woolfolk Hoy (2001) suggested that a valid measure of teacher efficacy must assess both personal competence and an analysis of the task in terms of the resources and constraints in particular teaching contexts. Subsequently, Tschannen-Moran and Woolfolk Hoy (2001) developed a measurement of teacher efficacy based on items that represent specific

teaching tasks in a contextual classroom situation. Specifically, the tool takes into account teacher efficacy as it applies to student engagement, instructional strategies, and classroom management. Their research and thinking set forth a foundation for measuring teacher efficacy in this study. The short form of this tool exists in Appendix A for questions four through seven and chapter three explains the use of this instrument in further detail.

Elements Related to Teacher Efficacy and Inclusion

Tschannen-Moran and Woolfolk Hoy (2001)'s tool for measuring teacher efficacy provides an avenue for exploring elements that may influence teacher efficacy in the context of an inclusive classroom in a high school. Several elements pertaining to teacher efficacy and inclusion already exist within the literature. A review of those elements follows in this next section: (1) teacher attitude and beliefs about inclusion, (2) classroom support, (3) teacher training, (4) teacher collaboration and communication, (5) co-teaching, (6) administrative support, (7) instructional repertoire based on research and evidence-based practices, (8) teacher characteristics, (9) student characteristics, and (10) school characteristics.

Teacher Attitudes and Beliefs about Inclusion

Examining teachers' attitudes towards inclusion, Scruggs and Mastropieri (1996) found that 54.4% of the teachers in the various studies they reviewed expressed the view that, in general, students benefit from inclusion. Of the 7,385 teachers participating in the studies examined by Scruggs and Mastropieri (1996), 65% expressed the opinion that the policy of inclusion is the correct policy. More than 50% of the teachers stated they had the will to actually include students in their schools. However, the percentage of the

teachers willing to actually participate in inclusion depended on two things: (1) the availability of support teams during the inclusion process; and (2) the type and degree of severity of the special needs of the students.

Shechtman, Reiter, and Schanin (1993) asked 202 teachers from 18 schools whether or not they favored inclusion. Two-thirds of the teachers answered positively to this question, but most teachers remained apprehensive. The teachers became wary of the extra time and special attention they would need to invest in these students, the increased behavioral issues, and their lack of knowledge and experience dealing with students with special needs. In addition, 60% of the teachers felt that inclusion posed academic challenges.

Other studies exist which discuss efficacy in the context of attitudes toward inclusion of students with special needs. Buell et al. (1999) reported a correlation between acceptance of the inclusion idea and teachers' sense of competency. Accordingly, a teacher's belief in his or her own capabilities related highly to his or her own sense of efficacy. In addition, Larrivee and Cook (1979) found that the success or failure of integration of students with special needs placed a considerable influence on the teachers' attitudes toward inclusion. Also, a teacher's estimate of the degree of his or her success becomes an expression of his or her own sense of efficacy (Weisel & Dror, 2006).

Negative attitudes towards inclusion could also impact teacher efficacy as do positive attitudes. Several studies indicated that teachers hold negative attitudes and beliefs towards inclusion or may feel overwhelmed by teaching in an inclusive classroom. First, de Bettencourt (1999) investigated the attitudes of secondary general

educators who taught in inclusive classrooms. Of the 71 teachers surveyed, the majority of general educators either disagreed with the concept of inclusion or did not have strong feelings regarding the issue (de Bettencourt, 1999). In addition, Mastropieri and Scruggs (2001) suggest that teachers may feel the techniques promoting inclusion success interfere with the demand for extensive content coverage.

Next, Brady and Woolfson (2008) conducted a study that included 118 primary school teachers (44 general mainstream, 33 mainstream learning support teachers, and 41 special education teachers) who taught across 20 schools in central Scotland for children ages (5-12 years). They found that teacher attitudes towards disabled people impacted teacher attributions. Mainstream teachers were less optimistic about learner progress than special education teachers, viewing the children with learning support needs as having less control over their own progress than the children without such needs (Brady and Woolfson, 2008).

Shady (2010) used action research and sampled 34 teachers and staff (21 general education, 6 special education, and 7 specialty teachers) in one elementary school (grades K-5) in Dover, DE in 2006-07. Pre- and post-surveys indicated the staff remained divided when it came to implementing an inclusive approach to education for all of its students. Specifically, the mid-point mean scores on most items indicated an indifferent perspective on inclusion as some staff stood strongly for or strongly against inclusion for all students. While qualitative data indicated that inclusion does benefit students with disabilities, the teachers and staff did not feel as strongly about its benefits for non-disabled students (Shady, 2010).

In general, studies of teacher attitudes appear contradictory and inconclusive. In addition to the research already detailed, other research characterizes general education teachers as being resistant to integration or including students with disabilities (Coates, 1989; Gersten, Walker, & Darch, 1988; Semmel, Abernathy, Butera, & Lesar, 1991). On the other hand, other studies indicate general education teachers support inclusion (Villa, Thousand, Meyers, & Nevin, 1996; York, Vandercook, MacDonald, Heise-Neff, & Caughey, 1992).

Classroom Support

While Scruggs and Mastriopieri (1996) reviewed 28 surveys from mostly elementary general educators and discovered that more than two thirds of them supported the idea of inclusion, less than one-third of the general educators noted that they had adequate training, resources, and the approximate amount of time to successfully implement inclusive practices. In a qualitative study conducted by Smith and Smith (2000), general elementary school teachers indicated that support (administration, special education department, and paraprofessionals) was one of four factors that had the greatest effect on their teaching of students with SLD in an inclusive classroom. Since both of these studies focused on teachers at the elementary level, asking secondary general educators how classroom support might influence their teacher efficacy seemed necessary.

Teacher Training

The research on inclusion indicates that general education teachers feel they are not adequately prepared to teach students with disabilities (de Bettencourt, 1999; Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Karge, Lasky, McCabe, &

Robb, 1995; Kearney & Durand, 1992; Welch, 1996). The teacher education programs most general education teachers take focus on content areas and may not have prepared them for the professional responsibilities of working with students with special needs. If teachers received preparation to teach students with disabilities, the course was frequently presented in the form of a survey course requirement (Kamens, Loprete, & Slostad, 2000; Welch, 1996). As a result, additional teacher training, particularly regarding special education, plays a fundamental role in how teachers support students appropriately in the classroom (Sankar, 2007).

In two studies, researchers found an association between teacher preparation and training in the area of special education with more positive attitudes toward inclusion (King & Edmunds, 2001; McLeskey, Waldron, So, Swanson, & Loveland, 2001). In a qualitative study, Liston (2004) interviewed 10 general educators and 10 special educators teaching at the high school level. Even though most of the interviewees were experienced educators, every participant emphasized the importance of continued professional development. The interviews showed a need for on-going professional development regarding inclusive and special education issues.

Based on these findings, the training and professional development that teachers receive after their teacher preparation may impact their teacher efficacy when working with students with SLD.

Teacher Collaboration and Communication

Providing meaningful education to students with disabilities within appropriate educational contexts require a high degree of cooperation between teachers and other school personnel (Solis, Vaughn, Swanson, & McCulley, 2012). McLeskey and Waldron

(2002) found that good collaboration and communication among all members of the inclusion team enhances inclusion programs. Also in Liston's (2004) qualitative study mentioned earlier, of the 20 high school general and special educators interviewed, all of them reported collaboration as the key to student success. Therefore, general educators collaborating and communicating with special educators and other school personnel may impact teacher efficacy.

Co-teaching

Cooperative teaching occurs when special educators work collaboratively with general educators to teach students with disabilities within general education settings (Bauwens, Hourcade, & Friend, 1989). Cook and Friend (1995) shortened the term *cooperative teaching* to *co-teaching* and further defined a true co-teaching relationship. They defined co-teaching as "two or more professionals delivering substantive instruction to a diverse or blended group of students in a single physical space" (Cook & Friend, 1995, p. 2).

In a meta-synthesis of qualitative research conducted by Scruggs, Mastropieri, and McDuffie (2007), co-teaching demonstrated a positive effect on student achievement, and the administrators, teachers, and students perceived co-teaching to be socially and academically beneficial to general and special education students. However, in a meta-analysis of quantitative co-teaching research conducted by Murawski and Swanson (2001), of the 89 articles reviewed, only six provided sufficient quantitative information for an effect size to be calculated. Effect sizes for the individual studies ranged from low (0.24) to high (0.95), with an average total effect size of 0.40. These results indicate that

little empirical research exists to substantiate that co-teaching remains an effective service delivery for students with disabilities and more research seems necessary.

Administrative Support

Principals play a critical role as they present themselves as instructional leaders for all students, including students with disabilities, rather than building or district-level managers for general education (Coyne, Kame'enui, & Simmons, 2004). As instructional leaders, they need to project a clear vision that empowers the faculty to achieve greatness within themselves and for their students (Worrell, 2008).

Lee, Dedick, and Smith (1991) reviewed questionnaires given to 8,488 full-time teachers in 354 public and Catholic schools in the High School and Beyond study. Their findings indicated relatively low self-efficacy for teachers who perceived their principals to be passive and uninterested. Relatively high self-efficacy fostered for teachers who claimed that their principals used their leadership positions to provide teachers with resources and protect them from environmental challenges, and who allowed flexibility and autonomy in their classrooms.

In a cross-sectional study of 222 third-grade and 251 fifth grade teachers in 196 schools in both rural and urban communities in three states, Stipek (2012) examined factors predicting teacher self-efficacy. Teachers' perception of the administrative support they received also predicted their self-efficacy, over and above student ethnicity. The finding that teachers' sense of efficacy was relatively high when they believed they had supportive administrators remains consistent with previous research reviewed above (Lee et al., 1991).

Instructional Repertoire based on Research and Evidence-Based Practices

The usage of effective instructional practices in the classroom consistently remains one of the most cited findings associated with successful inclusion (Lipsky & Gartner, 1996b; Schaffner & Buswell, 1996; Scruggs & Mastropieri, 1994). Soodak, Podell, and Lehman (1998) surveyed 188 general educators regarding their responses to including students with disabilities in their classrooms. General teacher efficacy interacted with teachers' use of differentiated teaching practices, although personal teacher efficacy did not. The interactive effects of teacher efficacy and instructional practices on hostility/receptivity indicated that teachers who used differentiated instructional and had a high sense of teacher efficacy were most likely receptive to inclusion (Soodak et al., 1998). However, teachers with a low sense of teacher efficacy remained hostile to the suggestion of inclusion regardless of their use of differentiated instructional practices (Soodak et al., 1998).

Other research indicated that teachers come to value empirically validated instructional approach if they observe that it improves their students' learning (Guskey, 1986; Mathes, Fuchs, Fuchs, Henley, & Sanders, 1994; Sparks, 1988). Sparks (1988) found that self-efficacy differentiated between teachers who improved in using a new teaching approach and those who did not improve. Teachers who had a higher sense of self-efficacy valued or rated the strategy as important; whereas, teachers with a lower self-efficacy made few instructional changes and maintained lower expectations for themselves and their students.

This study focuses on high leverage instructional strategies researched by Marzano et al. (2001) and Marzano (2007) (e.g., tracking student progress, setting objectives, providing feedback, summarizing, note taking, etc.).

Marzano et al. (2001) identified high yielding instructional strategies that increased student achievement. Marzano (2007) continued to review studies to determine the impact of certain instructional strategies. This study seeks to examine the use of some those high leverage instructional strategies and their impact on teacher efficacy. The instructional strategies for this study consists of the following: tracking student progress with scoring scales and rubrics, setting objectives, providing feedback, building vocabulary, identifying similarities and differences, engaging students with interactive games, summarizing, note taking, using nonlinguistic presentations, working in cooperative learning groups, reinforcing effort and providing recognition, and utilizing graphic organizers and advanced organizers.

Teacher Characteristics

Several researchers found that the extent of teaching experience positively correlated with personal teacher efficacy and negatively with general efficacy beliefs (Allinder, 1995; Coladarci & Breton, 1997; Hoy & Woolfolk, 1993; Wertheim & Yona, 2002). Taimalu and Oim (2005) surveyed 193 teachers and found the respondents with longer teaching experience also had higher personal efficacy beliefs and lower general efficacy beliefs. Years of experience may have a positive or negative aspect to teacher efficacy in this study as personal and general teacher efficacy are not distinguished in the measurement tool.

Student Characteristics

The student characteristics examined in this study pertained to the students identified with SLD in the general education classroom. This characteristic becomes an area of interest because certain student characteristics increase the likelihood to influence teachers' perceptions of the difficulty of their task (Stipek, 2012). Specifically, teachers may develop low self-efficacy when working with students who are stereotyped as having low academic skills because the students present challenges that teachers believe they do not have the capacity to overcome (Stipek, 2012). In addition, Scruggs and Mastropieri (1996) found that the percentage of the teachers willing to actually participate in inclusion depended on the type and degree of severity of the special needs of the students. Having students with SLD may or may not influence teacher efficacy or it may depend on the number of students with SLD in the classroom that impacts teacher efficacy.

School Characteristics

Knoblauch and Hoy (2008) noted that self-efficacy increased for student teachers in both suburban and urban schools. With regard to practicing teachers, Garcia (2004) and Hoover-Dempsey, Bassler and Brissie (1992) did not find a significant correlation between the proportion of students receiving free or reduced-price lunch and teacher self-efficacy. Further inquiry as to a school's characteristic seems necessary.

Conceptual Framework

An underlying premise of the research indicates that teacher efficacy remains context specific and varies across participants (Ross, Cousins, & Gadalla, 1996) and across different student groups (Raudenbush, Rowen, & Cheong, 1992). Bandura (1997)

noted that a teachers' sense of efficacy is not necessarily uniform across different domains of content and subjects. Tschannen-Moran & Woolfolk Hoy (2001) mentioned that the many different types of tasks teachers are required to do can affect teacher efficacy. Further, other researchers showed that a teacher's belief in instructional efficacy varies when presented with different subject matter or students with diverse needs (Goddard, Hoy, & Hoy, 2000; Knoblauch & Hoy, 2008).

Due to the legal mandates of special education laws and accountability measures attached to standards-based reform policies, general education teachers teach in ever-changing and demanding environments. The combination of a fluctuating environment, the students they teach, the school where they teach, and the content they must teach increases the complexity for teachers. Therefore, teacher efficacy becomes at risk of being compromised. However, if variables were identified that may influence teacher efficacy for teachers supporting students with SLD in this type of complex setting, then perhaps their efficacy may be restored or positively maintained irrespective of these circumstances. Therefore, if school districts knew what elements assist teachers as they relate to teacher efficacy and other control variables that may impact teacher efficacy, then they could offer such supports for teachers in the inclusive classroom environment.

Teacher efficacy plays an important role in teaching. Efficacy beliefs influence the amount of effort individuals will employ on an activity, to what extent they will persevere when confronting challenges or barriers, and their resiliency in the midst of difficult situations (Pajares, 1997). According to self-efficacy theory, the stronger the perceived self-efficacy, the higher a person sets goals and commits to them (Bandura, 1991). Hence, people who maintain high efficacy beliefs tend to visualize success

scenarios that provide positive guides and supports for performance (Bandura, 1993). These individuals are engaged and foster a sense of fulfillment (Bandura, 1997). In addition, highly efficacious individuals may not always attain certain outcomes, but they will continue to try and intensify their efforts in order to impact change or attain a desired result (Bandura, 1997).

As Bandura's research illustrated, highly efficacious individuals remained positively engaged, aspired to reach goals, and maintained personal fulfillment in their work. In addition, highly efficacious individuals still persisted and were self-determined to keep trying even in the face of adverse situations. On the other hand, individuals with low efficacy may believe that things are tougher than they really are, foster stress, become depressed, and exude a narrow vision of how to best solve a problem (Bandura, 1997). When people possess low self-efficacy or doubt their efficacy, they visualize failure scenarios and dwell on the many things that can go wrong (Bandura, 1993). Therefore, individuals with low perceived efficacy quickly give up when their efforts fail to produce results and become apathetic when effecting changes (Bandura, 1997).

As a result of certain efficacy beliefs, a person with the same skills and knowledge may perform poorly, satisfactory, or exceptionally depending on fluctuations in self-efficacy thinking (Bandura, 1993). Therefore, teachers' efficacy can affect the types of learning environments they create and the level of academic progress their students may achieve (Bandura, 1993).

The conceptual framework, below, illustrates the types of influences in the inclusive classroom environment, what elements may influence teacher efficacy, and the types of behaviors teachers display if they have high or low teacher efficacy.

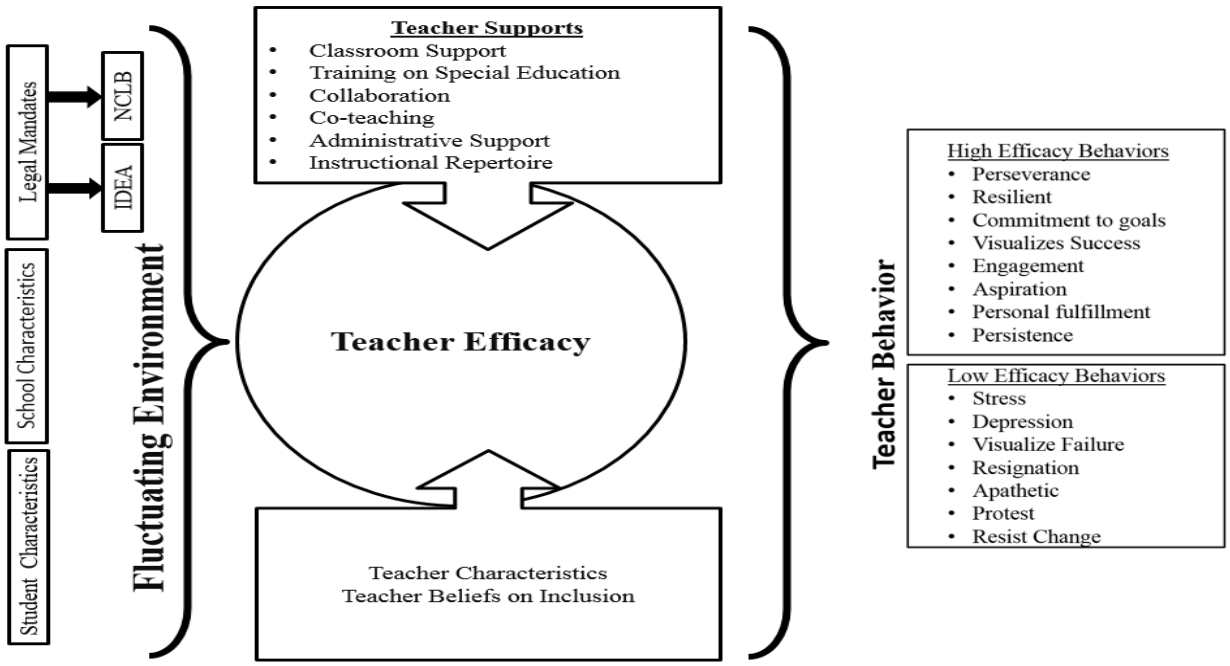

Figure 1. Conceptual framework.

Social cognitive theory suggests the importance of reciprocal determinism in human functioning, recognizing the conjoined forces of the person, behaviors, and environment as interactive and interdependent influences on individuals (Bandura, 1997). Factors related to the person include efficacy beliefs, which in turn influence behaviors and are also developed through experiences with the world (Fives & Buehl, 2009). Furthermore, behaviors and beliefs influence and are influenced by the environment (Fives & Buehl, 2009).

Including students with SLD in the general education classroom may impact general educators' teacher efficacy. If the majority of their training and background experiences focus on content, then teaching the content with students with SLD becomes a challenging prospect. Further, teachers may not know how to address the needs of the student with SLD appropriately. Therefore, the overall research question in this study

asks the following: What variables affect teacher efficacy for secondary general education teachers supporting students diagnosed with SLD?

Summary of Chapter 2

While a considerable amount of research exists on teacher efficacy, few researchers have explored teacher efficacy at the secondary level in an inclusive classroom. Since teachers face many challenges in the classroom, this study inquired if certain variables influenced a general education teacher's efficacy, particularly when working with students with SLD. This chapter reviewed the historical background of IDEA and NCLB and the demands those mandates place on high school general education teachers teaching English and Algebra I while including students with SLD. The chapter proceeded to review the research on teacher efficacy and the evolution of conceptual perspectives of teacher efficacy. Finally, elements influencing teacher efficacy and inclusion were discussed along with the presentation of the conceptual framework and research question for this study. The following chapter outlines the research design, survey, variables and their definitions, sample and size, data collection and analysis, limitations and weaknesses, and ethical considerations for this study.

CHAPTER 3

METHODS

This chapter begins with the purpose of the study and research question. The chapter then proceeds to describe the research design, the survey, variables and their definitions, the unit of analysis, and the description of the sample and size. An examination of the data collection and data analysis then follow. The chapter ends with the study's limitations and weaknesses, ethical considerations, and chapter summary.

Purpose of the Study

This study sought to gain insight and clarification as to what variables may influence teacher efficacy for secondary general education teachers supporting students with SLD in an inclusive secondary classroom. The research explored possible correlations among teacher beliefs about inclusion, teacher training, teacher collaboration, co-teaching, administrative support, teacher's instructional repertoire, teacher characteristics, student demographics, and school demographics on teacher efficacy. By determining which aspects may influence teacher efficacy, school district personnel, school administrators, school consultants, general educators, special educators, and paraprofessionals can work together to better ensure that efforts are put into place to support general education teachers. School districts can then seize the opportunity to effectively enrich teacher development, which will lead to effective inclusion for students with SLD in the secondary general education classroom.

Research Question

Teacher efficacy plays an important role in teaching. Efficacy beliefs influence the amount of effort individuals will employ on an activity, to what extent they will

persevere when confronting challenges or barriers, and their resiliency in the midst of difficult situations (Pajares, 1997). While efficacy beliefs can impact an individual's behavior, an underlying premise of the research indicates that teacher efficacy remains context specific and varies across participants (Ross, Cousins, & Gadalla, 1996) and across different student groups (Raudenbush, Rowen, & Cheong, 1992). Including students with SLD in the general education classroom may influence the general education teachers' efficacy. Further, these teachers may not know how to address the needs of the student with SLD appropriately in a general education setting that requires and adheres to various federal and state accountability measures and policies. The literature suggests that certain variables impact teacher efficacy. Further research seemed necessary to investigate what influences teacher efficacy in the specific context of secondary English and Algebra I general education classrooms that include students with SLD. Therefore, the overall research question asked the following: What variables affect teacher efficacy for secondary general education teachers supporting students diagnosed with SLD?

Research Design

A post-positivist framework, using quantitative methodology, served as the means to address the research question. Quantitative research involves numerical measures, deductive explanations, experimental designs, and survey research (Monette, Sullivan, & DeJong, 2011). This study uses a cross-sectional survey in order to collect data from selected individuals in a single time period (Gay, Mills, & Airasian, 2006). Employing a cross-sectional survey provides "a systematic method of gathering information from (a sample of) entities for the purposes of constructing quantitative descriptors of the

attributes of the larger population of which the entities are members" (Groves, Fowler, Couper, Lepkowski, Singer, & Tourangeau, 2009, p. 2). In addition, cross-sectional surveys become useful in assessing attitudes and beliefs of a specified population. Since this study focuses on teacher perceptions of teacher efficacy, a cross-sectional study was appropriate to address the research question.

Survey

The survey used in this study consists of two groupings of questions. The first group includes questions created by the researcher for collecting data on the independent and control variables (Appendix A). These survey questions were developed from previous research as outlined in the literature review and detailed in the following section on variables and their definitions. In order to further enhance the content validity for this first group of questions, they were reviewed by educational experts on my committee. In particular, Dr. Dellegrotto has over 40 years of experience in the field of education with regards to teaching and instruction and special education. Dr. Mabry's master's degree is in adult education while Dr. Anderson's master's degree is in educational psychology. Based on the feedback from the committee members, revisions were made for those questions.

The second grouping of survey items contained questions from the short form of the Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) (Appendix D). This 12-item instrument gathered information on the dependent variable (teacher efficacy). Teacher efficacy as measured by the TSES short form consistently showed three distinct, but related latent factors associated with three areas of teaching: instructional strategies, classroom management, and student engagement (Duffin, French,

& Patrick, 2012). The Cronbach's alpha for the 12-item scale was .90 (Tschannen-Moran & Woolfolk Hoy, 2001). Therefore, the TSES developed by Tschannen-Moran and Woolfolk Hoy (2001) provided a promising measure of teacher efficacy to date that aligns with Bandura's (1997) theory (Duffin, French, & Patrick, 2012).

Variables and Their Definitions

The dependent variables for this study addressed teacher efficacy as measured by Tschannen-Moran and Woolfolk Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES), which includes overall teacher efficacy and differentiates teacher efficacy into three unique dimensions: instructional strategies, student engagement, and classroom management. The independent variables included the following: (1) teacher attitude and beliefs about inclusion, (2) classroom support, (3) teacher training, (4) teacher collaboration and communication, (5) co-teaching, (6) administrative support, and (7) instructional repertoire based on research and evidence-based practices. Some control variables include the teacher's sex, the educational level of the teacher, the number of years of teaching experience in general and with students with SLD, number of students identified as SLD, and the percentage of students who are economically disadvantaged. Each variable with definitions follows.

Dependent Variables

Teacher Efficacy. This study utilized TSES developed by Tschannen-Moran and Woolfolk Hoy (2001) to measure teacher efficacy (Appendix A). Originally named the Ohio State Teacher Efficacy Scale (OSTES), TSES was examined in three separate studies. These three studies indicate that teacher efficacy is tridimensional. The three

dimensions for teacher efficacy, instructional strategies, student engagement, and classroom management, serve as unique dependent variables.

The first study involved a sample of 224 participants, including 146 preservice teachers and 78 inservice teachers. All of the participants took classes at The Ohio State University. The participants responded to each of the 52-items using a 9-point Likert scale and respondents were then asked to rate the importance of each item for effective teaching on a 4-point Likert scale. Little variability existed in the importance of the 52-items as all tasks were considered 'important' to 'critical' for effective teaching (Tschannen-Moran & Woolfolk Hoy, 2001, p. 797). Therefore, none of the items were eliminated based on the importance ratings.

In the data analysis for the first study, the researchers examined the first factor and set criterion loadings higher than 0.60 to select items for further analysis. As a result, 31-items were selected with loadings ranging from 0.62 to 0.78 (Tschannen-Moran & Woolfolk Hoy, 2001). One of the items with a loading of 0.595 was included as well because it was believed to be a critical task of teaching (motivation) and was not well represented in the 31-items chosen (Tschannen-Moran & Woolfolk Hoy, 2001). Consequently, 32 of the original 52-items were used for further testing.

For the second study, another group of 217 respondents participated, including 70 preservice teachers and 147 inservice teachers. The participants were students attending three universities (Ohio State, William and Mary, and Southern Mississippi). Three factors, accounting for 51% of the variance, emerged from the varimax rotation of 18-items (Tschannen-Moran & Woolfolk Hoy, 2001). The researchers labeled those factors as follows: efficacy for student engagement, (8-items), efficacy for instructional

strategies (7-items), and efficacy for classroom management (3-items). The Cronbach's alpha for the subscales were 0.82 for engagement, 0.81 for instruction, and 0.72 for management (Tschannen-Moran & Woolfolk Hoy, 2001). The reliability for the total 18-item scale was 0.95 (Tschannen-Moran & Woolfolk Hoy, 2001).

The third study's purpose was to further refine the instrument. Roberts and Henson (2001) noted concerns with regards to the 18-items, particularly around the weakness of the classroom management factor. Therefore, Tschannen-Moran and Woolfolk Hoy continued with the 18-item scale and developed new classroom management items from Emmer's (1990) teacher efficacy for classroom management scale. Now, the instrument consisted of 36-items.

Using the 36-items, the third study then sampled 410 participants, including 103 preservice teachers, 255 inservice teachers, and 38 respondents who failed to indicate their teaching experience. The participants comprised of students attending three universities (Ohio State, William and Mary, and Cincinnati) as well as teacher volunteers from two elementary schools, one middle school, and one high school. Of the 36-items, four factors had eigenvalues greater than one which accounted for 58% of the variance in the respondents' scores (Tschannen-Moran & Woolfolk Hoy, 2001). A scree test indicated three factors could be extracted, replicating the three factors in Study 2: efficacy for instructional strategies (15-items), efficacy for classroom management (9-items), and efficacy for student engagement (12- items). The scale was reduced to 24-items and the same three factors yielded loadings ranging from 0.50 to 0.78 (Tschannen-Moran & Woolfolk Hoy, 2001). Reliabilities for the teacher efficacy were as follows: 0.91 for instruction, 0.90 for management, and 0.87 for engagement (Tschannen-Moran

& Woolfolk Hoy, 2001). Based on the high reliabilities of the three scales, an even more parsimonious scale was explored. As a result, a long form of 24-items and a short of 12-items emerged.

Both the 24-items and 12-items were subject to two separate factor analyses. One included responses of 111 preservice teachers and the other using the responses of 255 inservice teachers. The three factors for the inservice teachers accounted for 54% (long form) and 65% of the variance (short form) (Tschannen-Moran & Woolfolk Hoy, 2001). The three factors for the preservice teachers accounted for 57% (long form) and 61% of the variance (short form) (Tschannen-Moran & Woolfolk Hoy, 2001). Using the data from the entire sample from the third study, the reliability for the 24-item instrument was 0.94 and 0.90 for the 12-item scale (Tschannen-Moran & Woolfolk Hoy, 2001).

Since this current study focused on inservice teachers only and 65% of the variance occurred with the short form of 12-items, the short form seemed to suffice and includes the three factor subscales of instruction, management, and engagement (Appendix A). These aspects of teacher "efficacy for instructional strategies, student engagement, and classroom management, represent the richness of teachers' work and the requirements of good teaching" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 801) and comprise the dependent variables used in this study.

Independent Variables

Tschannen-Moran and Woolfolk Hoy (2001)'s tool for measuring teacher efficacy provided an avenue for exploring what variables influenced teacher efficacy in the context of a high school inclusive classroom. Several elements pertaining to teacher efficacy and inclusion exist within the literature as previously outlined in chapter two.

Therefore, the following independent variables were selected for this study: (1) teacher attitude and beliefs about inclusion, (2) classroom support, (3) teacher training, (4) teacher collaboration and communication, (5) co-teaching, (6) administrative support, and (7) instructional repertoire based on research and evidence-based practices. Control variables included the following: teacher's sex, teacher certification, the educational level of the teacher, the number of years of teaching experience, experience teaching students with IEPs for SLD, number of class periods taught per day, number of students with an IEP for SLD, number of students with IEP for another disability category, class length, class size, type of school (e.g. urban, suburban, or rural), and the percentage of economically disadvantaged students. The survey ended asking teachers their opinion of which students are easier to teach. Each variable with definitions follows.

Teacher Attitudes and Beliefs about Inclusion. This variable referred to the teachers' agreement to the policy of including student with IEPs for SLD in the general education classroom. A Likert scale will collect ordinal data with 1 equaling strongly disagree to 5 equaling strongly agree.

Classroom Support. This variable provided data on how important it is to have additional support in the classroom when supporting student with IEPs for SLD. A survey question with a Likert scale with 1 equaling not important at all to 5 equaling very important.

Teacher Training. This variable became defined as to whether or not teachers have received training with regards to the current special education laws within the past two years or more versus not at all. In addition, the survey presents a question that

addresses the number of courses or inservice training the teachers have received regarding special education.

Teacher Collaboration and Communication. Using a Likert scale from 1 equaling not at all to 5 equaling daily, this variable referred to the amount of time the general education teacher collaborates with the following teachers: (1) special education teacher, (2) teachers within their own department, and (3) teachers outside of their departments or subject areas. Also, a question asking teachers if they met at least once with the special education teacher concerning students with an IEP for SLD became an item on the survey.

Co-Teaching. Using a dichotomous variable coded 0 for no and 1 for yes, this variable seeks to discover if general education teachers co-teach with a special education teacher. In addition, a description of how successful the co-teaching experience is perceived remains using an ordinal Likert scale with 1 equaling not very ineffective to 5 equaling very effective.

Administrative Support. This variable refers to the amount of time administrators provide for collaboration between general education teachers and special education teachers. A Likert scale will collect ordinal data with 1 equaling not at all to 5 equaling daily. Secondly, a Likert scale collected ordinal data to determine if and how often the principal articulates the positive value of including students with IEPs for SLD in the general education classroom.

Instructional Repertoire. Based on Marzano et al.'s (2001) and Marzano (2007)'s work on effective instructional practices, instructional repertoire denoted the use of the following high leverage instructional strategies in the classroom:

- Track student progress with scoring scales or rubrics.
- Set objectives.
- Provide feedback.
- Build vocabulary.
- Identify similarities and differences.
- Engage students with interactive games.
- Students summarize.
- Students take notes.
- Use nonlinguistic presentations.
- Students work in cooperative learning groups.
- Teacher reinforces effort and provides recognition.
- Use of graphic organizers and advanced organizers.

A Likert scale collected ordinal data with 1 equaling not at all to 5 equaling very often.

Control Variables

Sex. Using a dichotomous variable coded 0 for male and 1 for female collected the self-reported indication of the respondent's sex.

Teacher Certification. This variable asked teachers if they are certified in one or more subject areas or the type of certificate they have to not having any certification. In addition, teachers were asked if they have a certificate in special education.

Educational Level of the Teacher. The highest level of degree completed was ascertained from a bachelor's degree to a doctoral degree.

Years of Teaching Experience. This variable indicated the number of years of teaching experience teachers have in general and if anyone is a new teacher with less than one year's experience in the classroom.

Years of Experience Teaching Students with IEPs for SLD. This variable referenced the amount of experience teachers have had in the past teaching students with IEPs for SLD from the first year of experience to more than five years of experience.

Number of Class Periods Taught During the Day. This variable determined how many periods of English for ninth graders or the number of periods teachers provide instruction for Algebra I.

Class Length. This variable indicated the length of a class period ranging from 45 min. or less to 91 min. or more.

Number of Students with IEP for SLD. This variable queried teachers to consider the general education English class for 9th graders or the general education class for Algebra I class with the most number of students with IEPs for SLD. Then teachers responded by indicating the number of students in that class with IEPs for SLD.

Number of students with IEPs for Another Disability Category. Thinking of the same class as mentioned above, the teachers were asked the number of students they have with an IEP for something else other than SLD.

Class Size. For the general education English class for 9th graders or the general education class for Algebra I class with the most number of students with IEPs for SLD, teachers responded by indicating the total number of students in that class.

Type of School. The teachers self-reported whether or not the school is characterized as suburban, urban, or rural.

Economically Disadvantaged. The teachers estimated the percentage of students who are economically disadvantaged in their classroom. The categories for this question were as follows: 1-25%, 26-50%, 51-75%, and 76-100%.

Unit of Analysis

Since most high schools begin with the ninth grade, that particular year becomes the make or break year for completing high school. During the ninth grade year, many students must earn passing grades in core courses for the first time, and the core courses tend to involve the toughest and most rigorous academic classes a student must take in high school (McCallumore, 2010). Most high schools have an English class just for ninth graders and Algebra I courses may include ninth grade students as well as other grade levels. Therefore, general education teachers in inclusive classrooms who teach ninth grade English and high school Algebra I was determined as the unit of analysis for this research.

Sample and Size

For this study, 71 school district superintendents in the south-central region of Pennsylvania were contacted to participate in this study which included 74 high schools. Twenty-two school districts agreed to participate comprising of 24 high schools. To illustrate the cross-section of the 74 school environments for this study and those represented in the study, the following tables illustrate the number and percentage of schools by student enrollment (Table 2) , percentage of students who are economically disadvantaged (Table 3), and the percentage of students who are identified as needing special education services (Table 4) in 2013-14.

Table 2

Student Enrollment by Schools in 2013-14

Number of Students Enrolled	Contacted Schools		Responded Schools	
	N	Percentage	N	Percentage
1-500	10	13.51%	6	25.00%
501-1000	30	40.55%	5	20.83%
1001-1500	23	31.08%	12	50.00%
1501-2000	7	9.46%	1	4.17%
2001-2500	2	2.70%	0	0.00%
2501-3000	2	2.70%	0	0.00%
Total	74	100%	24	100%

Note. The data for the table was retrieved from the Pennsylvania School Performance Profile 2013-14 (2014).

Table 3

Percentage of Economically Disadvantaged in 2013-14

Percentage of Economically Disadvantaged	Contacted Schools		Responded Schools	
	N	Percentage	N	Percentage
1-25%	36	48.65%	7	29.17%
26-50%	31	41.89%	15	62.50%
51-75%	5	6.76%	0	0.00%
76-100%	2	2.70%	2	8.33%
Total	74	100%	24	100%

Note. The data for the table was retrieved from the Pennsylvania School Performance Profile 2013-14 (2014).

Table 4

Percentage of Special Education in 2013-14

Percentage of Special Education	Contacted Schools		Responded Schools	
	N	Percentage	N	Percentage
1-5%	1	1.35%	1	4.17%
6-10%	15	20.27%	4	16.66%
11-15%	40	54.05%	12	50.00%
16-20%	14	18.92%	4	16.66%
21-25%	3	4.06%	2	8.33%
26-30%	1	1.35%	1	4.17%
Total	74	100%	24	≈100%

Note. The data for the table was retrieved from the Pennsylvania School Performance Profile 2013-14 (2014).

The population for this study stemmed from general education teachers who teach ninth grade English and students taking Algebra I in 22 school districts and 24 high schools in south-central Pennsylvania. Within the 22 school districts and 24 high schools, 146 surveys were sent electronically via email to 79 Algebra I teachers and 67 English teachers who teach at the ninth grade level. The survey was available from April to June 2014 with three follow up attempts. Of the 146 surveys, three teachers did not agreed to the terms of survey, nine teachers partially completed the survey, and 46 teachers completed the survey with 28 Algebra I and 18 English teachers who teach at the ninth grade level. The response rate for completed surveys was 31.5%. Nulty (2008) noted the overall response rate for online surveys was 33%; therefore, this study received a reasonable response rate for an online survey.

Data Collection and Analysis

Data Collection

This study invited participants to voluntarily participate to answer questions electronically from both the TSES survey and the researcher-developed questionnaire (Appendix A) at one time. The survey administration timeline occurred April 2014 to June 2014 after the superintendents approved this process and provided the necessary information. This timeframe for administering the survey was selected while the teachers were still in session and before the school year ended. For the participants that do not respond, the researcher sent a follow-up email reminder every five days with three follow-up attempts.

The information collected during this study will remain completely confidential and anonymous and no teacher, school, or district identifying information will be used in any reporting of results or in any discussion of data collected. Teacher responses were considered only in combination with those from other participants. The responses were coded immediately upon receipt so that no one can identify any participant relative to individual responses. All survey data will remain the property of the project investigators and will be maintained in a secure location under their control at all times. The information obtained in this study may be published in scientific journals or presented at scientific meetings, but the identity of the teachers and school districts will be kept strictly confidential and anonymous.

As indicated, teacher participation in this study was voluntary. They chose whether or not to take part in this study, or if they decided to take part, they could change their minds later by withdrawing at any time. They were not penalized in any way for

withdrawing or not answering the survey.

Data Analysis

Initially, this study considered using Multilevel Mixed-Effects Linear Regression Model which has the ability to model data with a random intercept and can measure the relationships in clusters of size two or more and of clusters of variable sizes (Rabe-Hesketh & Skrondal, 2012). Since this study comprised of districts and schools as clusters and measured teacher responses about their schools, the random intercept model appeared to be the ideal approach. However, in order for teachers to participate in this study, the administrators providing permission to conduct this study required anonymity, which is in alignment with most studies conducted in education in Pennsylvania. Therefore, identifying school district information on the survey was not permitted in conjunction with IRB protocols for anonymity and thereby prohibited the researcher from clustering responses based on particular schools and districts. As a result, a fixed Ordinary Least Square (OLS) regression was deemed appropriate for this study.

Survey responses from Qualtrics were exported into STATA IC, a statistical software program. Based on the literature, elements correlating to teacher efficacy were predicted to be the following: (1) teacher beliefs on inclusion, (2) a teacher's level of training in special education, (3) a teacher's instructional repertoire and use of instructional strategies, and (4) a teacher's experience working with students with SLD. The OLS regression model approach confirmed if theories of teacher efficacy apply to this population, providing evidence that the variables are grounded in theory and are statistically sound.

Limitations and Weaknesses

A cross-sectional study provided the opportunity for the researcher to collect data in a single stand only study which made the study feasible and provided valuable information from a short time span. While this study does not make a causal claim, its purpose remained to identify the relationship of specific aspects with teacher efficacy. With fluctuating classroom environments and as the complexity of teaching increases, teachers and school districts can begin to review avenues that support teachers in hopes of increasing or maintaining high teacher efficacy. Hundreds of teachers and thousands of students remain in inclusive classrooms and are seeking the best outcomes for all involved. An exploratory investigation on teacher efficacy in a comprehensive cross-sectional study made good sense.

In addition, while this cross-sectional study occurred within such a short timeframe and may not provide a sufficient perspective as a longitudinal survey might, the researcher did not have to consider testing effects or attrition. With testing effects, participants may change their behaviors or responses to a survey later on as a result of partaking in the study. Further, attrition becomes a factor for a longitudinal study if people drop out of the study before the study's completion. Finally, with the constant change of students and teachers, a cross-sectional approach seemed practical to handle the amount of measures in a fluctuating environment.

As with any study, history presents an issue if an unanticipated event occurs while the study remains in progress which could affect the dependent variable. Selection also carries a threat due to underlying differences with Algebra I teachers and English teachers beyond those which the researcher controlled. However, even though such

threats existed, based on the cost, time restrictions, and threats with longitudinal studies, a cross-sectional teacher survey provided the best option to address the research question. Therefore this study sets the foundational groundwork for future research.

Ethical Considerations

According to Babbie (2008), all research presents some risk. However, this study offered low risk to survey participants and safeguards were put into place in order to protect participants and treat them ethically. The researcher provided information to Indiana University of Pennsylvania Institutional Review Board (IRB) when the dissertation proposal was approved. The researcher identified herself as a doctoral student and assured potential participants of confidentiality via anonymity. Further, participants could withdraw from the participation at any time or refuse to answer the survey. An email stating this information is provided in Appendix C. After the superintendents agreed to the study by responding to an email and consent form as per IRB protocol (Appendix B) for their perspective school districts. Finally, teacher participants provided informed consent by selecting the response on the first question of the survey that states they have read the information and would like to participate (Appendix A).

Summary of Chapter 3

While research prevails with regards to teacher efficacy, further research as to what elements affect teacher efficacy for secondary general education teachers supporting students with SLD seemed necessary. This study explored certain variables to determine which variables correlated with teacher efficacy in inclusive high school classrooms. A quantitative approach using a fixed Ordinary Least Square (OLS) regression model allowed the researcher to determine which elements influenced teacher efficacy in this

particular environment and setting within these school districts. Using a survey with questions grounded in the literature and questions with regards to teacher efficacy from an existing and tested survey, the results of this study provide an opportunity to extend the current literature in this area. Further, by uncovering certain aspects that influence teacher efficacy for general educators, school districts could examine how to better support teachers as more and more students with SLD are included in the general education classroom. The following chapter presents and summarizes the results and findings of this study.

Chapter 4

RESULTS

The purpose of this exploratory study sought to gain insight and clarification as to what variables influence teacher efficacy for secondary general education teachers supporting students with SLD in an inclusive secondary classroom. The study used a survey to gather descriptive data and examine specific variables that may influence teacher efficacy based on teacher perceptions. Using Qualtrics software, data retrieval occurred from April to June 2014 from general educators who teach Algebra I and English at the ninth grade level in high schools in south-central Pennsylvania. STATA IC software was used to determine the correlations as proposed in the research-based model. Since this model contained multidimensional concepts, factor analysis provided multi-item scales and multiple regression aided in determining the influence of teacher supports, beliefs, and teacher and student/classroom characteristics on teacher efficacy.

Description of the Sample

For this study, 71 school district superintendents in the south-central region of Pennsylvania were contacted to participate in this study which included 74 high schools. Twenty-two school districts agreed to participate comprising of 24 high schools. As noted in chapter three, tables illustrate the cross-section of the 74 school environments for this study and those represented in the study by the number and percentage of schools by student enrollment (Table 2), percentage of students who are economically disadvantaged (Table 3), and the percentage of students who are identified as needing special education services (Table 4) in 2013-14.

Response Rate

Within the 22 school districts and 24 high schools, 146 surveys were sent electronically via email to 79 Algebra I teachers and 67 English teachers who teach at the ninth grade level. The survey was available from April to June 2014 with three follow up attempts. Of the 146 surveys, three teachers did not agree to the terms of the survey, nine teachers partially completed the survey, and 46 teachers completed the survey with 28 Algebra I and 18 English teachers who teach at the ninth grade level. The response rate for completed surveys was 31.5%.

Descriptive Statistics

Table 5 indicates the survey responses for student/classroom characteristics or items.

Table 5

Survey Responses for Students/Classroom Items

Response Items	N	Percentage
Number of Classes with Students with IEPs for SLD	46	100.00%
0-2 students	9	19.57%
3-5 students	19	41.30%
6-8 students	9	19.57%
9-10 students	9	19.57%
Number of Classes with Students with IEPs for another disability	46	100.00%
0-2 students	27	58.70%
3-5 students	14	30.43%
6-7 students	5	10.87%

Number of Classes according to class size	46	100.00%
10-15 students	8	17.39%
16-20 students	8	17.39%
21-25 students	12	26.09%
26-30 students	18	39.13%
Number of periods taught of Algebra 1 or English 9	46	100.00%
1 period	7	15.22%
2 periods	17	36.96%
3 periods	12	26.09%
4 periods	3	6.52%
5 periods	5	10.87%
6 periods	2	4.35%
Length of class period	46	100.00%
≤ 45 minutes	11	23.91%
46 - 60 minutes	14	30.43%
> 60 minutes	21	45.65%
Number of classes taught with a grade level represented in Algebra I		
9th grade	25	N/A
10th grade	19	N/A
11th grade	8	N/A
12th grade	5	N/A

Table 6 includes the survey responses for teacher characteristics or items.

Table 6

Survey Responses for Teacher Items

Response Items	N	Percentage
Sex	46	100.00%
Male	17	36.96%
Female	29	63.04%
Certification	46	100.00%
English/ Language Arts	18	39.13%
Mathematics	28	60.87%
Special Education (additional certification)	2	4.35%
Highest Level of Education	46	100.00%
Bachelor's Degree	1	2.17%
Bachelor's Degree + additional graduate courses	20	43.48%
Master's Degree	25	54.35%
Years of Experience	46	100.00%
≤ 5 years	10	21.74%
6-10 years	18	39.13%
>10 years	18	39.13%
Years of Experience Teaching Students with SLD	46	100.00%
≤ 5 years	14	30.43%
>5 years	32	69.57%

Table 7 comprises of the survey responses for school characteristics or items.

Table 7

Survey Responses for School Items

Response Items	N	Percentage
Types of Schools	46	100.00%
Suburban	17	36.96%
Urban	4	8.70%
Rural	24	52.17%
Do Not Know	1	2.17%
Percent Economically Disadvantaged Students	46	100.00%
≤ 25%	14	30.43%
26-50%	25	54.35%
>50%	7	15.22%

Generation of Variables

Dependent Variables

Four dependent variables were constructed for this study. The dependent variables addressed teacher efficacy as measured by Tschannen-Moran and Woolfolk Hoy's (2001) Teachers' Sense of Efficacy Scale (TSES). Questions four through seven of the survey list the 12-items associated with teacher efficacy in Appendix A. With this specific sample, a factor analysis provided a means to analyze the underlying factors of the 12-item teacher efficacy as the dependent variable. Table 8 illustrates the initial results after conducting a factor analysis.

Table 8

Eigenvalues for Teacher Efficacy Survey Scale Indices (unrotated)

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	4.96174	3.36192	0.6571	0.6571
2	1.59982	0.86149	0.2119	0.8690
3	0.73833	0.35101	0.0978	0.9667
4	0.38731	0.10409	0.0513	1.0180
5	0.28322	0.04673	0.0375	1.0555
6	0.23649	0.24646	0.0313	1.0869
7	-0.00996	0.02314	-0.0013	1.0855
8	-0.03310	0.04395	-0.0044	1.0812
9	-0.07705	0.04923	-0.0102	1.0710
10	-0.12627	0.03919	-0.0167	1.0542
11	-0.16547	0.07857	-0.0219	1.0323
12	-0.24404	.	-0.0323	1.0000

The results denote that the three retained factors explain 97% of the variance. Figure 2 provides a visual representation of the factor loadings.

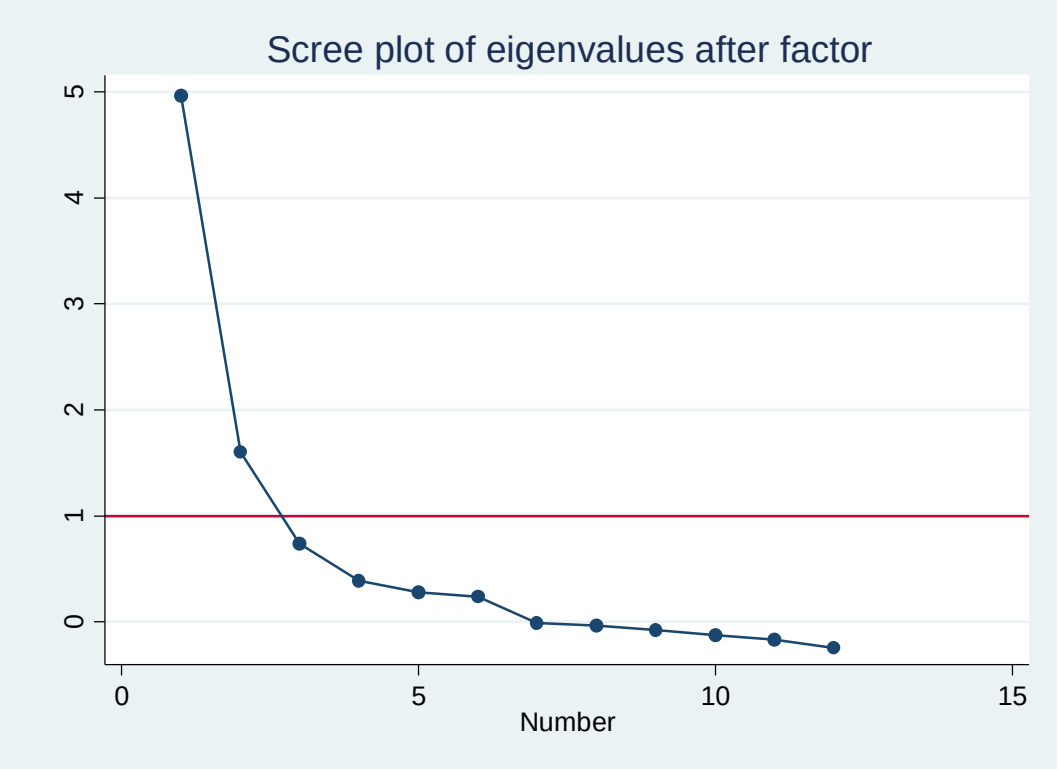

Figure 2. Scree plot following factor analysis of the dependent variable of teacher efficacy.

According to the scree plot, two of the factors have eigenvalues >1 and the third factor is close to an eigenvalue of 1. The literature suggests three factors exist in previous studies (Tschannen-Moran & Woolfolk Hoy, 2001). Since this study comprises of a small data set and three factors address 97% of the variability, three factors are retained. However, an unclear pattern exists with the current factor loadings; therefore two rotations were conducted. An orthogonal varimax rotation did not highlight clear factor loadings; however, a promax rotation illustrated clear factor loadings.

The data from this study remains generally consistent with prior research conducted by Tschannen-Moran & Woolfolk Hoy (2001). One item for this study that loaded differently from Tschannen-Moran & Hoy (2001) was item number 11, families (assisting families). In the original research, this item loaded under teacher efficacy for

student engagement. In this case, it loaded under teacher efficacy for instructional strategies. It seems logical within this data set that assisting families or family involvement could be considered an instructional strategy; therefore, this item was kept under factor, teacher efficacy in instructional strategies.

The final factors named for this data set correlate with the names in the literature. Those factor names are as follows: (1) teacher efficacy for instructional strategies, (2) teacher efficacy for classroom management, and (3) teacher efficacy for student engagement. Table 9 indicates the final factors and item loadings.

Table 9

Factor Loadings after Promax Rotation for Teacher Efficacy

Variables	Factor 1: Teacher Efficacy for Instructional Strategies	Factor 2: Teacher Efficacy for Classroom Management	Factor 3: Teacher Efficacy for Student Engagement	Uniqueness
disrupt	-0.0149	**0.7902**	0.0624	0.3474
motivate	-0.0872	0.1093	**0.8657**	0.2213
believe	-0.0314	0.2490	**0.7599**	0.2417
value	0.1334	-0.2331	**0.7642**	0.4410
questions	**0.5420**	0.0320	0.0376	0.6708
rules	0.0095	**0.6500**	0.1140	0.5016
noisy	0.2680	**0.3449**	0.2880	0.5017
manage	0.4666	**0.5298**	-0.0160	0.2532
assess	**0.8618**	-0.0753	0.0408	0.2964
confused	**0.7238**	0.1388	-0.4026	0.4303
families	**0.6040**	-0.0374	0.2111	0.5318
strategies	**0.7834**	0.0590	0.1043	0.2630

Note. N = 46. Retained factors = 3.

Cronbach's alpha. In order to test for reliability of each factor, Cronbach's alpha coefficients were computed. Nunnally and Bernstein (1994) claim that an alpha reliability coefficient of .70 or higher will suffice. The alpha reliability for factor 1 is .8306, factor 2 is .8254, and factor 3 is .8509. When dropping any item the alpha decreased. The overall alpha reliability coefficient for the teacher efficacy index is .8791. A good item exists with a similar average inter-item correlation; therefore, all measures appear to be a good fit and the alpha value deems acceptable for exploration.

Multi-item scale construction. Teacher efficacy exists as a multidimensional construct. A multi-item scale illustrates four dependent variables. The first dependent variable consists of (1) *teacher efficacy* in its totality which entails teacher efficacy in following three dimensions: teacher efficacy for instructional strategies, teacher efficacy for classroom management, and teacher efficacy for student engagement. Since teacher efficacy breaks down into three dimensions, the following variables were generated by summing the survey items for each respondent for each dimension: (2) *teacher efficacy for instructional strategies*, which consists of five items (questions, assess, confused, families, and strategies), (3) *teacher efficacy for classroom management*, which contains four items (disrupt, rules, noisy, and manage), and (4) *teacher efficacy for student engagement*, which encompasses three items (motivate, believe, and value). As previously mentioned, all but one item loaded within similar factor dimensions as in the literature; therefore, the previous research provides support for this research and content validity. In sum, the three domains for teacher efficacy presented in the theoretical literature align with the three domains for teacher efficacy for this study.

Independent Variables

Tschannen-Moran and Woolfolk Hoy (2001)'s tool for measuring teacher efficacy provided an avenue for exploring what variables influenced teacher efficacy in the context of a high school inclusive classroom. Several elements pertaining to teacher efficacy and inclusion exist within the literature as previously outlined in chapter two. Therefore, the following independent variables were initially considered for this study: (1) teacher attitude and beliefs about inclusion, (2) classroom support, (3) teacher training, (4) teacher collaboration and communication, (5) co-teaching, (6) administrative support, and (7) instructional repertoire based on research and evidence-based practices.

Beginning with the independent variable, instructional repertoire based on the research and evidence-based practices, question 29 of the survey provides the 12-item strategies associated with a teacher's instructional repertoire (Appendix A). These 12-items are derived from Marzano et al.'s (2001) and Marzano (2007)'s work. In order to analyze the underlying factors of the 12-items comprising instructional repertoire, Table 10 reveals the initial results of the factor analysis.

Table 10

Eigenvalues for Instructional Strategies Indices (unrotated)

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	3.29257	2.27122	0.6600	0.6600
2	1.02135	0.36231	0.2047	0.8647
3	0.65905	0.24160	0.1321	0.9968
4	0.41745	0.05844	0.0837	1.0805
5	0.35900	0.25532	0.0720	1.1525
6	0.10368	0.06548	0.0208	1.1733
7	0.03820	0.05608	0.0077	1.1809
8	-0.01788	0.10641	-0.0036	1.1773
9	-0.12429	0.05097	-0.0249	1.1524
10	-0.17526	0.08196	-0.0351	1.1173
11	-0.25722	0.07069	-0.0516	1.0657
12	-0.32792	.	-0.0657	1.0000

The results reveal that the two retained factors explain 86% of the variance. Figure 3 provides a visual representation of the factor loadings.

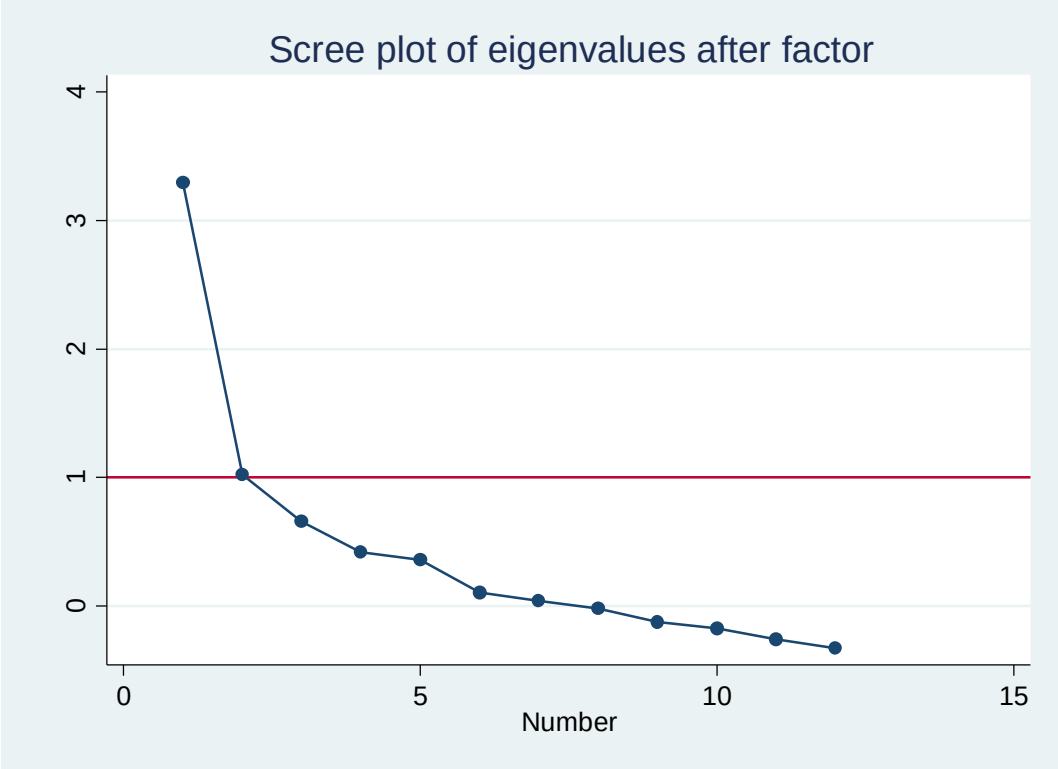

Figure 3. Scree plot following factor analysis of an independent variable of instructional strategies.

According to the scree plot in Figure 3, one factor stands out, however, two of the factors have eigenvalues of 1 or >1. Therefore, retention of those two factors as dimensions are retained for instructional strategies. Table 11 specifies the factor loadings of the two retained factors.

Table 11

Factor Loadings and Unique Variances

Variable	Factor1	Factor 2	Uniqueness
track	0.5463	-0.3620	0.5705
objectives	0.5318	0.3162	0.6172
feedback	0.7535	0.2194	0.3840
vocabulary	0.6726	-0.2808	0.4687
simdiff	0.6861	0.1897	0.4933
games	0.5621	-0.2077	0.6409
summarizing	0.6416	-0.1196	0.5740
notes	-0.0464	0.3141	**0.8992**
nlingpresentation	0.4803	-0.2230	0.7196
colearn	0.1734	-0.0446	**0.9679**
recognition	0.3475	0.6443	0.4641
graphicorg	0.3300	0.0667	**0.8866**

Note. N = 46. Retained factors = 2.

After retaining two factors, I examined the uniqueness for each factor. For any item that contains a high uniqueness of .69 or higher, Hamilton (1992) suggests dropping those variables. In this case, three variables were dropped from the data set: notes, colearn (cooperative learning), and graphicorg (graphic organizers). Since the variable nlingpresentation's (nonlinguistic presentation) uniqueness was so close to .69 and originally presented in the literature (Marzano et al., 2001; Marzano, 2007), the researcher decided to keep this variable. Another factor analysis was conducted with the remaining nine items. Table 12 notes the results of this analysis.

Table 12

Eigenvalues for Instructional Strategies Indices (unrotated)

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	3.12016	2.23105	0.7897	0.7897
2	0.88911	0.43573	0.2250	1.0147
3	0.45338	0.34504	0.1147	1.1295
4	0.10834	0.09312	0.0274	1.1569
5	0.01523	0.03593	0.0039	1.1608
6	-0.02070	0.12259	-0.0052	1.1555
7	-0.14329	0.04630	-0.0363	1.1193
8	-0.18959	0.09199	-0.0480	1.0713
9	-0.28158	.	-0.0713	1.0000

The results reveal that the two retained factors explain 100% of the variance.

Figure 4 specifies a visual representation of the factor loadings.

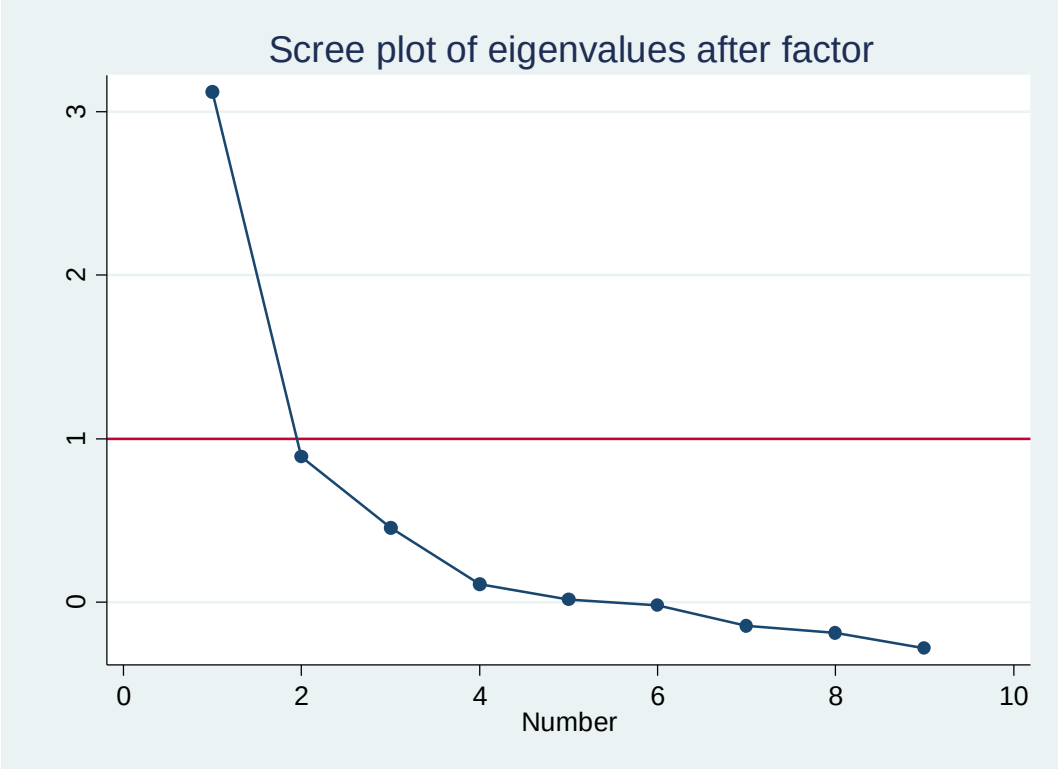

Figure 4. Scree plot following factor analysis of an independent variable of instructional strategies.

According to the scree plot, one of the factors has eigenvalues >1 and the second factor is very close to an eigenvalue of 1. Since this study comprises of a small data set and the two factors together address 100% of the variability, two factors are retained. After retaining two factors, the loading pattern made little sense theoretically; therefore, the factors were rotated orthogonally to gain a clearer picture.

The factors theoretically equate to the following: (1) student focused strategies and (2) teacher focused strategies as represented in Table 13.

Table 13

Factor Loadings after Orthogonal Rotation for Instructional Strategies

Variable	Factor 1: Student Focused Strategies	Factor 2: Teacher Focused Strategies	Uniqueness
track	**0.6079**	0.0797	0.6241
objectives	0.1738	**0.6294**	0.5737
feedback	0.4446	**0.6643**	0.3610
vocabulary	**0.7340**	0.1904	0.4250
simdiff	0.4383	**0.5646**	0.4891
games	**0.7340**	0.1299	0.6595
summarizing	**0.5859**	0.2833	0.5765
nlingpresentation	**0.4880**	0.1633	**0.7352**
recognition	-0.1061	**0.6650**	0.5465

Note. N=46. Retained factors = 2.

After rotation, the loading pattern makes more logical and theoretical sense and therefore was kept accordingly. It was noted that the strategy of nonlinguistic presentation (nlingpresentation) consisted of an uniqueness of >.69, but since it is very close to .69 and presented in the literature as one of the strategies (Marzano et al., 2001; Marzano, 2007), the researcher decided to retain this item for index construction. Next, the alphas were calculated to determine reliability.

Cronbach's alpha. In order to test for reliability of each factor, Cronbach's alpha coefficients were computed. The alpha reliability for factor 1 is .7463, factor 2 is .7470. A high correlation of the item-test and the average interitem covariance indicates similarities. In both cases, the alphas are higher than .70 and the final overall scale reliability coefficient was .7972. All of these alphas are acceptable according to Nunnally and Bernstein (1994)'s claims.

Multi-item scale construction. Based on the above findings, two variables were generated by summing the associated item responses. The first variable, *student focused strategies,* includes strategies for student engagement and encompasses tracking progress, vocabulary instruction, games, summarizing materials and using nonlinguistic presentations. The second variable, *teacher focused strategies,* includes strategies that remain teacher focused or strategies initiated by the teacher and involves identifying objectives, providing feedback, noting similarities and differences, and reinforcing students with recognition.

Remaining independent variables. Initially the following independent variables were considered for this study: (1) teacher attitude and beliefs about inclusion, (2) classroom support, (3) teacher training, (4) teacher collaboration and communication, (5) co-teaching, (6) administrative support, and (7) instructional repertoire based on research and evidence-based practices. All of these independent variables remained except for co-teaching. Based upon the responses for this study with regard to co-teaching, 63% of the participants indicated they were not co-teaching. In addition, 54% of the respondents noted that they did not have any experience with co-teaching. Therefore, due to the small sample size and the lack of current or existing experience with co-teaching, this variable was dropped from the final regression model.

In addition to co-teaching, three of the following independent variables were comprised of two variables: (1) teacher training, (2) teacher collaboration and communication, and (3) administrative support. After analyzing and parsing the specific aspects of the variables and checking for multicollinearity, each of those variables now contain one variable and the second variable dropped from each one. Since these

variables were not control variables, I needed to determine what variable was going to best represent the constructs for (1) teacher training, (2) teacher collaboration and communication, and (3) administrative support. Multicollinearity is addressed later in this chapter.

In order to create a less complex model, this study includes 10 independent variables, three of which are control variables. The remaining 10 independent variables selected for this study include the following: (1) teacher attitude and beliefs about inclusion, (2) classroom support, (3) teacher training, (4) teacher collaboration and communication, (5) administrative support and values on inclusion, (6) teacher focused strategies, (7) student focused strategies, (8) number of students with IEPs for SLD, (9) percentage of economically disadvantaged students, and (10) years of experience teaching students with SLD. Table 14 provides a summary of the independent variables and includes comments with regards to how the categorical variables were collapsed. Due to the small sample size, the categorical variables were reduced in the number of categories that were presented in the initial survey. By collapsing the categories, the results were easier to interpret and provided more broad categories for each variable.

Table 14

Independent Variables

Variable Name	Description	Measurement	N	%	Comments
include	Beliefs on inclusion	No	18	39.13	Reduced from 5 categories
		Yes	28	60.87	
cl_support	Importance of classroom support	Not Very Important	8	17.39	Reduced from 5 categories
		Very Important	22	47.83	
		Extremely Important	16	34.78	
train_sped	Training in special education	Minimal	12	26.09	Generated from dummy variables
		Graduate	10	21.74	
		Act 48	24	52.17	
meet_sped	Frequency of meetings with special education teachers for teacher collaboration	Low	19	41.30	Reduced from 5 categories
		Medium	14	30.43	
		High	13	28.26	
		Yes	17	36.96	
prin_value	Administrator/Principal values and supports inclusion	Never/Rarely	19	41.30	Reduced from 5 categories
		Sometimes	15	32.61	
		Often	12	26.09	
strat_teachfoc	Teacher focused strategy	Multi-item scale	46	N/A	Factor analyzed
strat_studentfoc	Student focused strategy	Multi-item scale	46	N/A	Factor analyzed
iep_sld	Number of students with IEPs for SLD	Report number of students Mean = 5.13	46	N/A	Continuous
econ_dis	Percentage of economically disadvantaged students	≤ 25%	14	30.43	Reduced from 4 categories
		26-50%	25	54.35	
		>50%	17	15.22	
exp_sld	Years of experience teaching students with SLD	≤ 5 years	14	30.43	Reduced from 7 categories
		>5 years	32	69.57	

Multivariate Analysis

Using a fixed Ordinary Least Square (OLS) regression model, four regression models are conducted along with an analysis and critique for each one. An alpha level of

.10 is considered for statistical significance for this study. The rationale for using an alpha level of .10 is to avoid claiming there is no effect or relationship when one might exist, particularly when estimating the effects in field settings and with small sample sizes (Judd & Kenny, 1981). Therefore, increasing the alpha level to .10 decreases the chances of making a Type II Error.

Multicollinearity

Multicollinearity poses a problem in linear regression models. The Variance Inflation Factor (VIF) measures the degree to which multicollinearity occurs. Concern may arise that multicollinearity exists when the largest VIF is greater than 10 or the mean VIF is greater than one (Chatterjee, Hadi, & Price, 2000).

In the final regression model, 10 independent variables remain. There are no single VIFs greater than 10, and the mean is a little over 1 at 1.39. However, according to Allison (2012), a VIF with a mean less than 2.5 is considered acceptable. Most of the tolerance scores (1/VIF) are excellent with values over .70 which, according to Hamilton (1992), indicate a reasonable degree of independent variation. All of the tolerances fall above 0.60 as supported by others such as Allison (2012). Table 15 denotes the VIF for teacher efficacy.

Table 15

Variance and Inflation Factor for Teacher Efficacy

Variable	VIF	1/VIF
strat_studentfoc	1.67	0.600445
train_sped	1.59	0.629265
prin_value	1.55	0.647063
cl_support	1.41	0.708037
meet_sped	1.36	0.733345
strat_teachfoc	1.34	0.748973
exp_sld	1.33	0.750710
iep_sld	1.25	0.800292
include	1.19	0.839405
econ_dis	1.19	0.841248
Mean VIF	1.39	

Regression Analysis on Overall Teacher Efficacy

Multiple regression analysis allows the researcher to determine if a relationship occurs between several independent variables and a dependent variable. In this case, various independent variables were examined to see if a relationship occurs with overall teacher efficacy. With the initial multiple regression output for overall teacher efficacy the adjusted R^2, which takes into account the complexity of the model relative to the sample size, was ${}_aR^2 = .28$. According to Acock (2012), R^2 values less than 0.1 are deemed weak, between 0.1 to 0.2 are moderate, and an R^2 greater than 0.3 remains strong. Therefore, this model is considered moderate.

In order to further evaluate the OLS model, I examined the residuals-versus-fitted values. According to Figure 5, the residuals for the model denote that the assumption of

normal i.i.d errors was not met. To address this issue, I used robust standard errors as highlighted below in more detail.

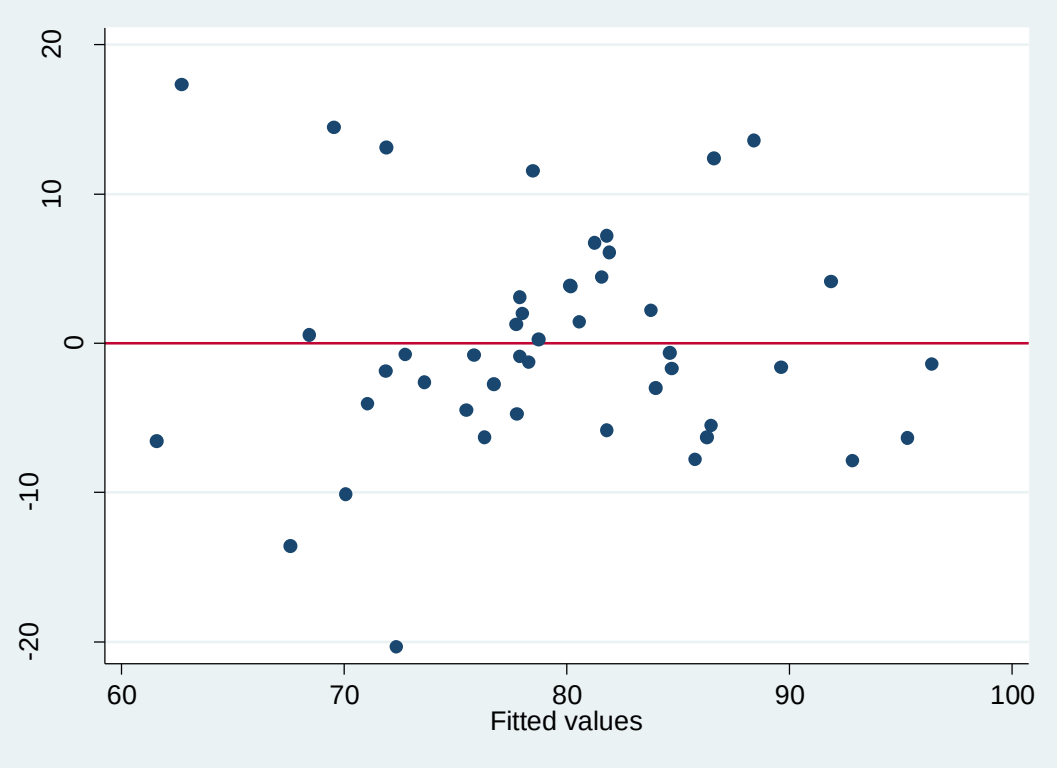

Figure 5. Residuals-versus-fitted values plot: overall teacher efficacy.

In addition, I reviewed a leverage-versus-squared values plot. According to the visual representation in Figure 6, influential cases remain non-existent.

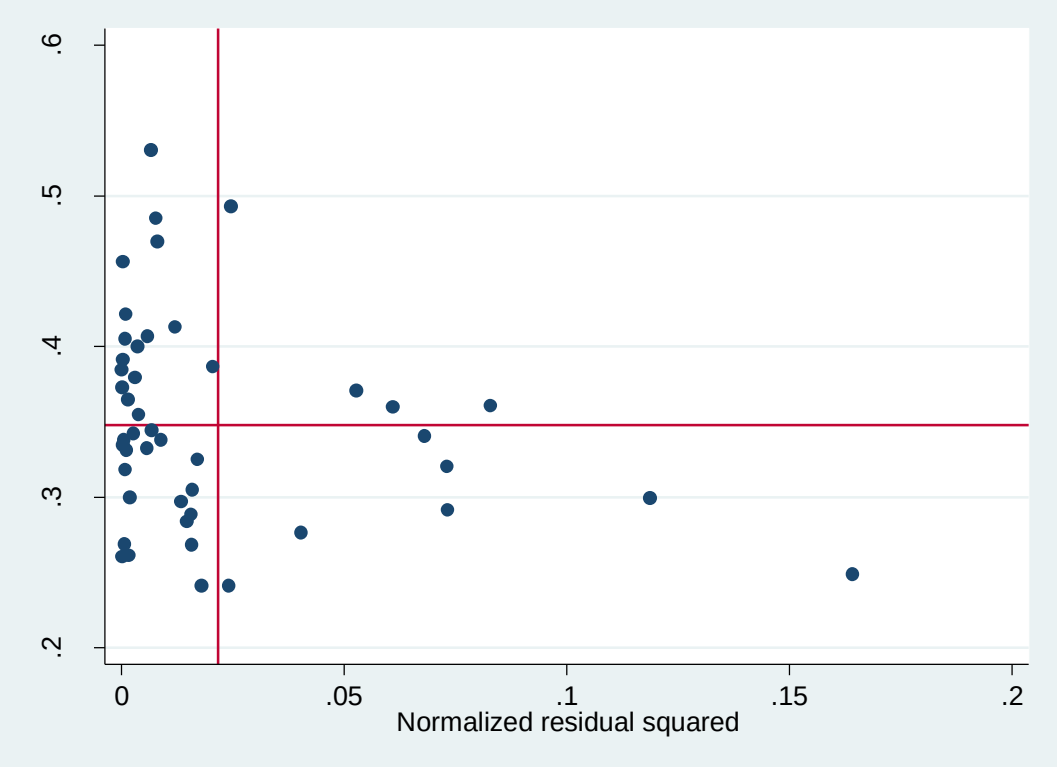

Figure 6. Leverage-versus-squared residuals plot: overall teacher efficacy.

Since the model does not meet the normal i.i.d. error assumption, a regression was conducted using the Huber-White Sandwich Estimator. This estimator helps to address heteroskedasticity in the model (Hamilton, 1992). The final regression of overall teacher efficacy on the independent variables included one continuous variable, two dichotomous variables, two latent variables constructed as multi-item scales after factor analysis, and five categorical variables. To further explore the categorical variables, I calculated predicted margins following Fisher's Protected Least Significant Difference method. Table 16 includes the results of the joint effects for five categorical variables. According to the output in Table 16, utilizing teacher focused strategies, experience teaching students with SLD, and teaching in a setting with students who are economically disadvantaged indicated a significant positive relationship to teacher efficacy.

Table 16

Ordinary Least Squares Regression Analysis Summary for Overall Teacher Efficacy

Dichotomous and Continuous Variable Effects						
Variable	Coefficient	SE	t	*P*	95% CI	95% CI
constant	39.30625	13.2097	2.98	0.006	12.32844	66.28405
iep_sld	-.1515437	510688	-0.30	0.769	-1.194508	.8914202
include	4.972049	3.07827	1.62	0.117	-1.314618	11.25872
strat_teachfoc	1.53207	.7261358	2.11	**0.043****	.0491026	3.015037
strat_studentfoc	.9347062	.5886186	1.59	0.123	-.2674134	2.136826
exp_sld	6.378444	2.824094	2.26	**0.031****	.610874	12.14601

Categorical Variable Joint Effects	F	P
train_sped	1.85	0.1746
meet_sped	0.70	0.5059
prin_value	0.82	0.4485
econ_dis	3.81	**0.0335****
cl_support	1.83	0.1775

R^2	.53
Adjusted R^2	.29
Prob > F	.00
RMSE	9.17
N	46

Note. *,**,*** indicate significance at the p<.10 and p<.05, p<.01 level, respectively.

According to Figure 7, the added variable plot highlights a positive significant relationship of using teacher focused strategies to overall teacher efficacy.

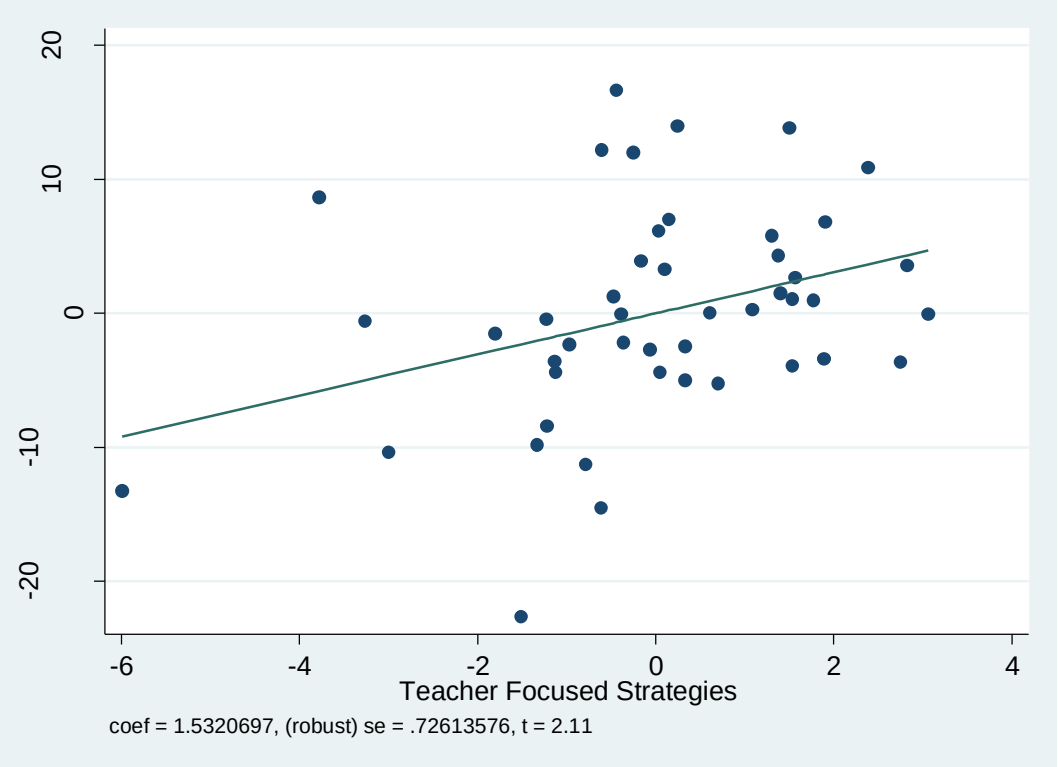

Figure 7. Added variable plot for teacher focused strategies and overall teacher efficacy.

A predictive margins plot in Figure 8 indicates that teachers who have more than five years of experience teaching students with SLD have a higher teacher efficacy than teachers with five years of experience or less.

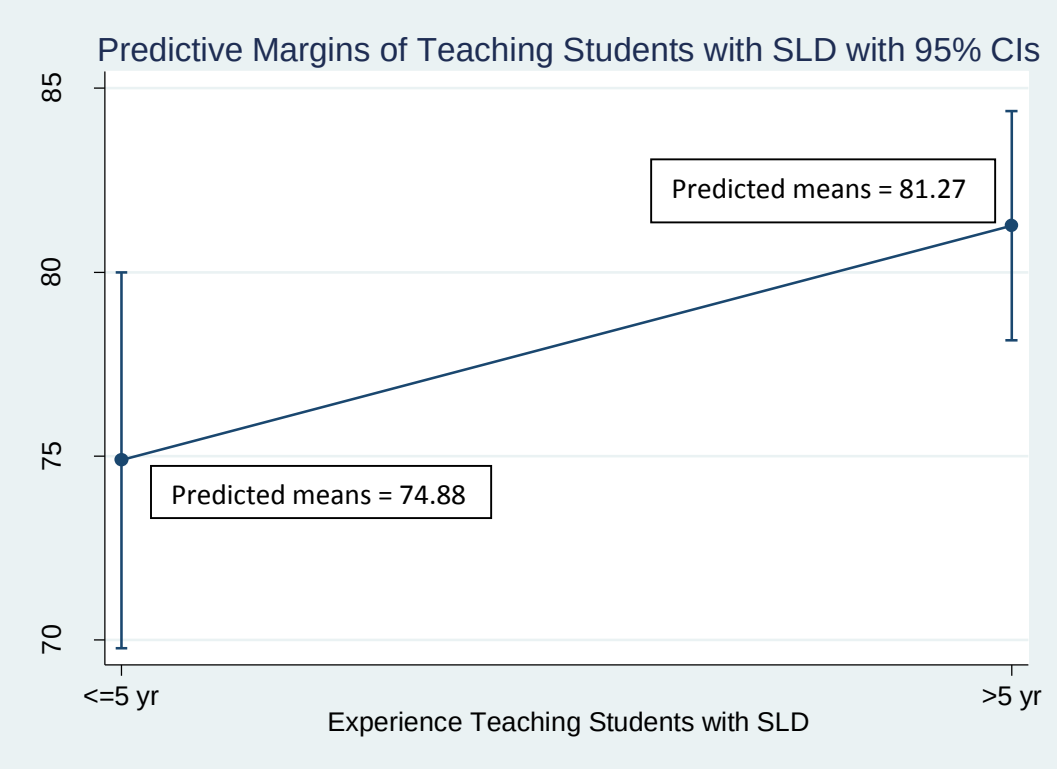

Figure 8. Predicted margins for experience teaching students with SLD and overall teacher efficacy with 95% confidence intervals.

Figure 9 presents a predictive margins plot. This visual illustrates the following: Teachers with more than five years of experience teaching students with SLD have greater overall teacher efficacy at all levels of employed teacher focused strategies as measured in this study. The teachers with the lowest use of teacher focused strategies and with more than five years of experience teaching students with SLD have higher overall teacher efficacy than 25% of the teachers with five or fewer years of experience. Moreover, teachers with five or fewer years of experience with a maximum use of teacher focused strategies still have lower overall teacher efficacy than 50% of those with more than five years of experience.

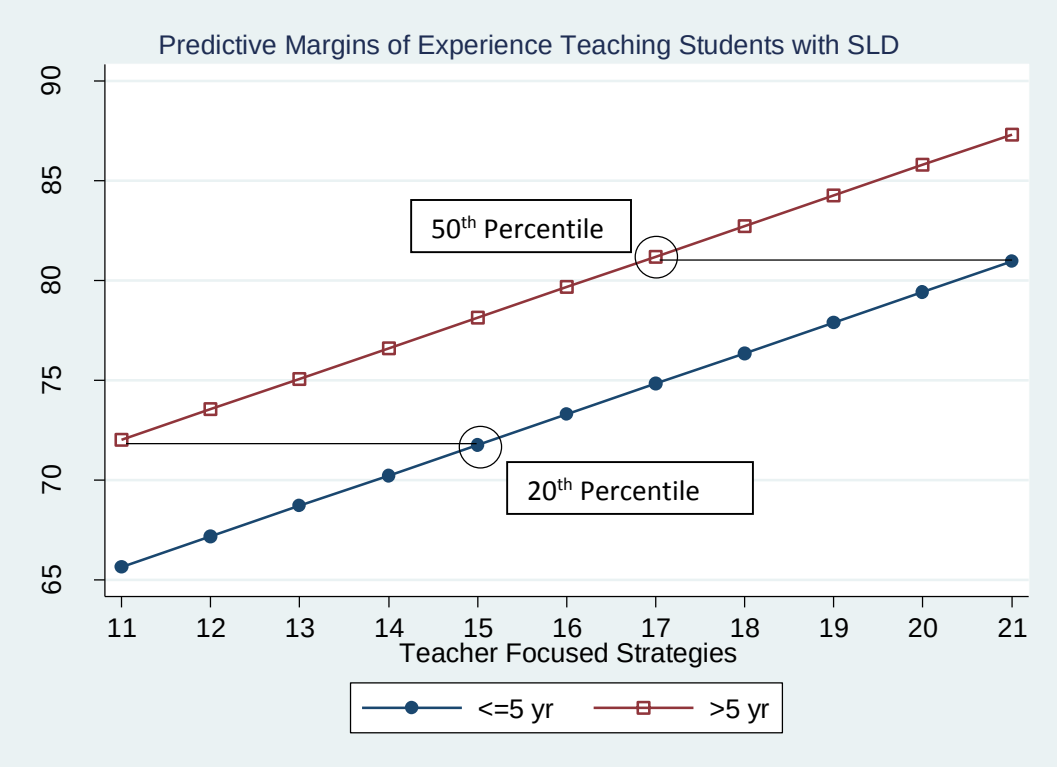

Figure 9. Predicted margins for experience teaching students with SLD and teacher focused strategies with overall teacher efficacy.

When reviewing the pairwise comparisons of predictive margins in Table 17, it indicates a significant difference when comparing overall teacher efficacy to teaching students who are economically disadvantaged when more than 50% are identified as economically disadvantaged. This remains true when comparing this group to classrooms where <=25% are identified as economically disadvantaged. Finally, this relationship endures when comparing 26% to 50% as economically disadvantaged.

Table 17

Pairwise Comparisons of Predictive Margins of Economically Disadvantaged for Overall Teacher Efficacy

	Contrast	Delta-Method Std. Error	Unadjusted t	Unadjusted P>|t|	Unadjusted 95% Conf. Interval
Economically Disadvantaged					
26% to 50% vs ≤25%	-1.988416	3.20759	-0.62	0.540	-8.539187; 4.562355
>50% vs ≤25%	6.741548	3.73986	1.80	**0.082***	-.8962631; 14.37936
>50% vs 26% to 50%	8.729964	3.17628	2.75	**0.010 *****	2.243138; 15.21679

Note. *,**,*** indicate significance at the p<.10 and p<.05, p<.01 level, respectively.

The predictive margin plot (Figure 10) demonstrates the predicted means for teacher efficacy remain significantly higher for the teachers who teach students who are economically disadvantaged.

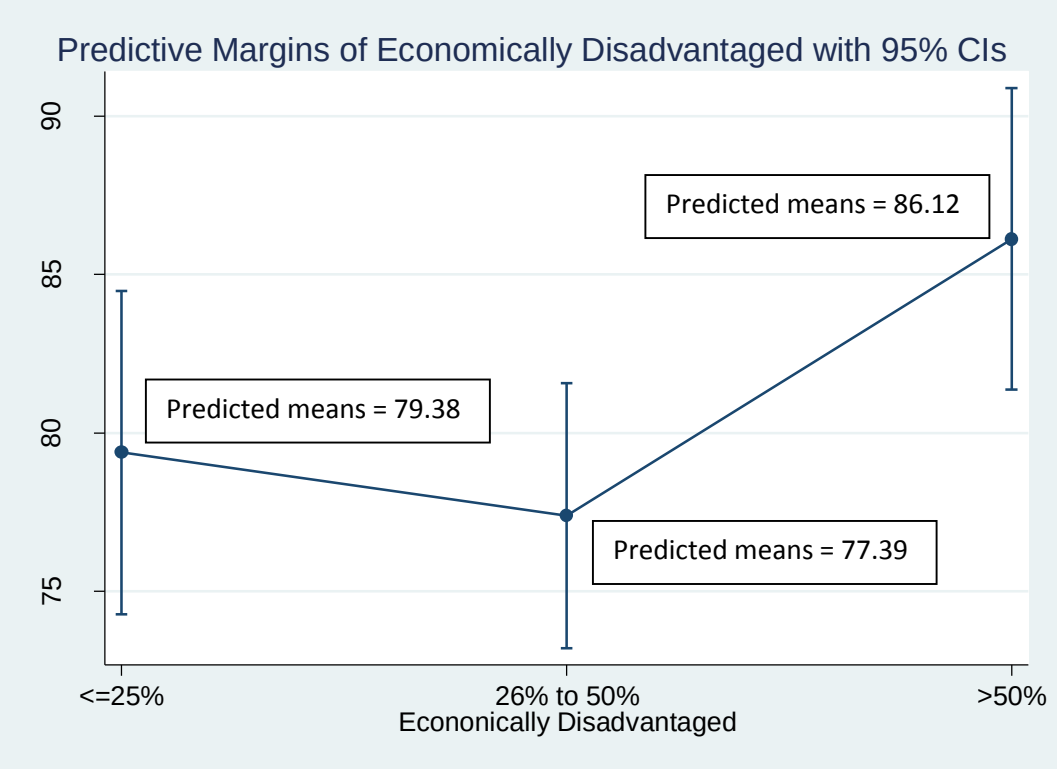

Figure 10. Predicted margins for response categories of economically disadvantaged and overall teacher efficacy with 95% confidence intervals.

Figure 11 shows a predictive margins plot. It indicates that teachers with 25% or fewer students who are economically disadvantaged and who use the maximum amount of teacher focused strategies still have lower overall teacher efficacy than 50% of the teachers who teach in classes when more than 50% of the students who are economically disadvantaged. Overall, teachers in classes with high numbers of economically disadvantaged students (i.e., >50%) consistently use more teacher focused strategies than teaches that have less numbers of economically disadvantaged students.

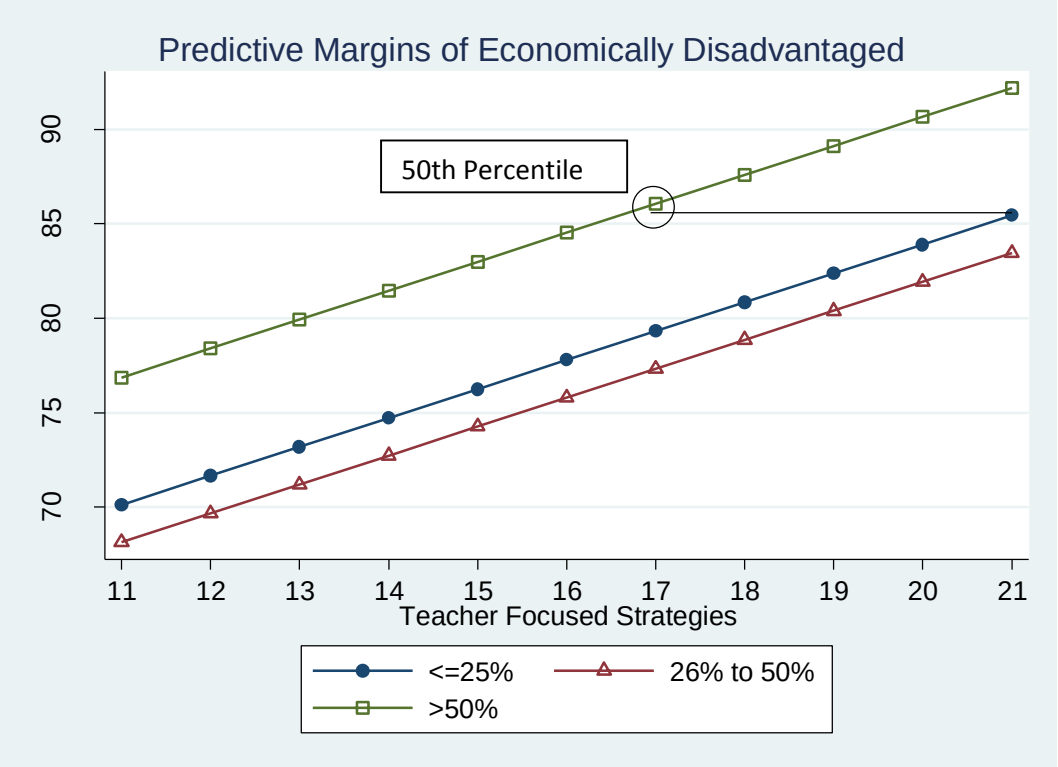

Figure 11. Predicted margins for economically disadvantaged and teacher focused strategies with overall teacher efficacy.

Regression Analysis on Teacher Efficacy for Instructional Strategies

The next regression analysis examines teacher efficacy for instructional strategies. This regression model for teacher efficacy for instructional strategies indicated .53 for R^2. However, this number does not provide a good estimate of explained variability because of the complexity of the model relative to the sample size. Therefore, the adjusted R^2 equates to .29. While this measurement is not perfectly accurate, the R^2 and the coefficients do not change based on the standard-error calculation. According to Acock (2012), this model is considered moderate and almost strong (.30).

Figure 12 includes the residuals-versus-fitted values plot which assists in evaluating the OLS model. According to Figure 12, the residuals for the model indicate

that the assumption of normal i.i.d errors was not met. To address this issue I used a model with robust standard error estimates.

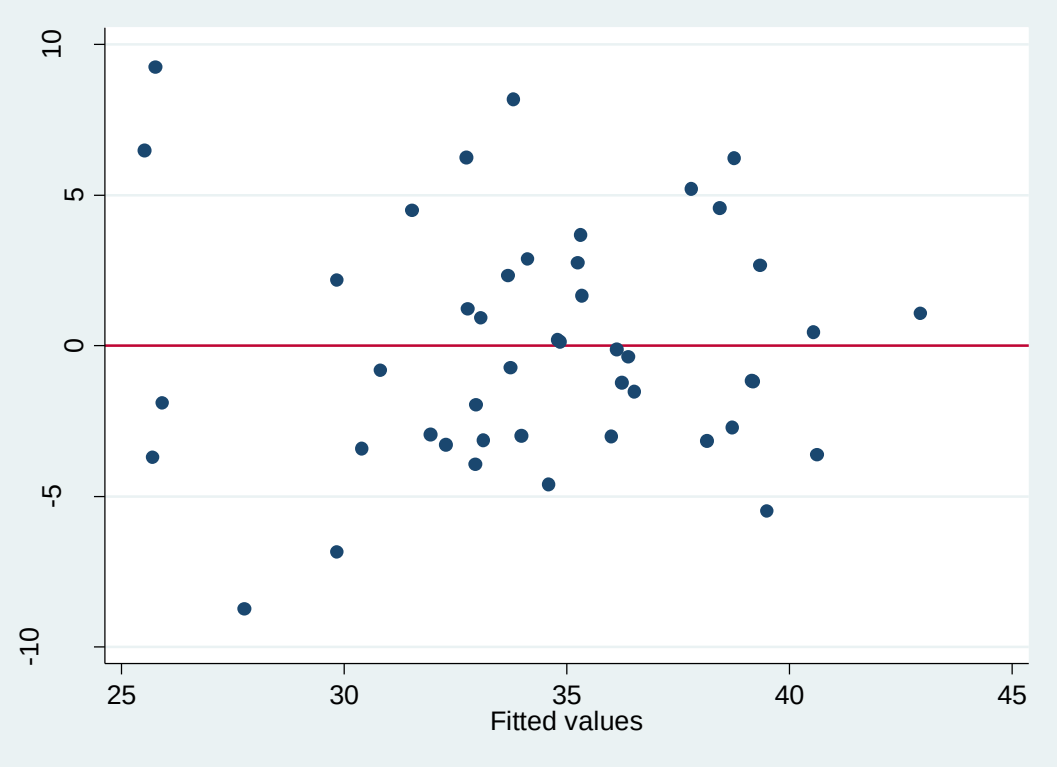

Figure 12. Residuals-versus-fitted values plot: teacher efficacy for instructional strategies.

Further, a leverage-versus-squared values plot was included. The leverage-versus -squared residuals plot (Figure 13) shows that none of the data points are far off the model or pulling the model in a certain direction. In other words, there are no influential cases.

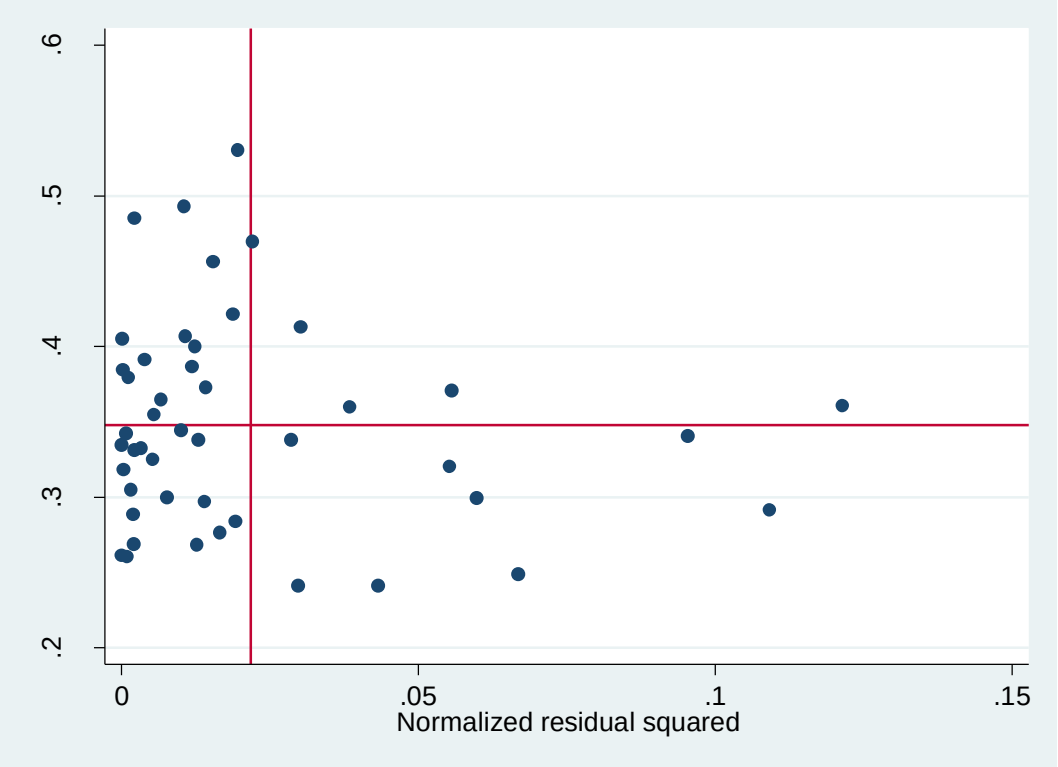

Figure 13. Leverage-versus-squared residuals plot: teacher efficacy for instructional strategies.

The final regression of teacher efficacy for instructional strategies on the independent variables included one continuous variable, two dichotomous variables, two latent variables constructed as multi-item scales after factor analysis, and five categorical variables. To further explore the categorical variables, I calculated predicted margins following Fisher's Protected Least Significant Difference method. Table 18 includes the results of the joint effects for five categorical variables. The output in Table 18 highlights that the usage of teacher focused strategies has a positive significant relationship to teacher efficacy for instructional strategies. In addition, a positive significant relationship exists between teachers who had experience teaching students with SLD and teacher efficacy for instructional strategies.

Table 18

Ordinary Least Squares Regression Analysis for Teacher Efficacy for Instructional Strategies

Dichotomous and Continuous Variable Effects						
Variable	Coefficient	SE	t	*P*	95% CI	95% CI
constant	10.737	7.560864	1.42	0.166	-4.704341	26.17835
iep_sld	-.2118927	.3022014	-0.70	0.489	-.8290704	.405285
include	2.095942	1.568947	1.34	0.192	-1.108275	5.30016
strat_teachfoc	1.294746	.4327174	2.99	**0.005*** **	.4110192	2.178473
strat_studentfoc	.0632963	.3240866	0.20	0.846	-.5985769	.7251695
exp_sld	3.834907	1.725204	2.22	**0.034** **	.3115709	7.358244

Categorical Variable Joint Effects	F	P
train_sped	1.18	0.3218
meet_sped	2.06	0.1453
prin_value	0.41	0.6661
econ_dis	2.05	0.1459
cl_support	0.30	0.7414

R^2	.53
Adjusted R^2	.29
Prob > F	.02
RMSE	4.84
N	46

Note. *,**,*** indicate significance at the p<.10 and p<.05, p<.01 level, respectively.

The added variable plot in Figure 14 displays a positive significant relationship of teacher focused strategies to teacher efficacy for instructional strategies.

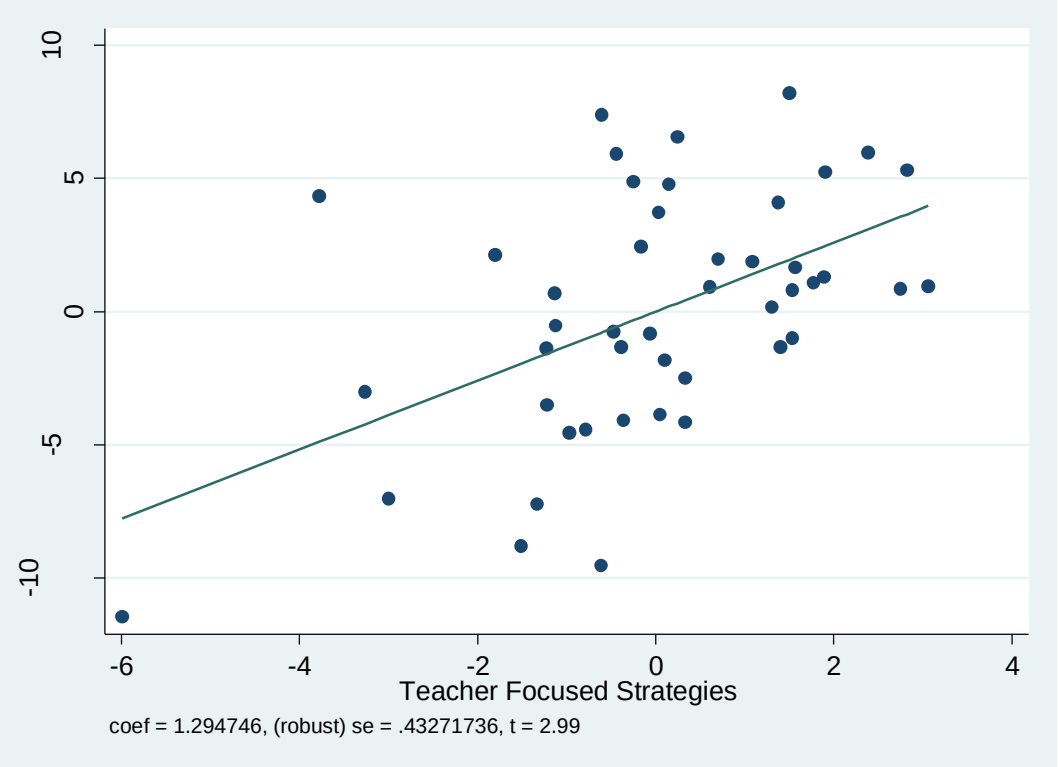

Figure 14. Added variable plot for teacher focused strategies on teacher efficacy for instructional strategies.

A predictive margins plot in Figure 15 indicates the following: Teachers with more than five years of experience teaching students with SLD had a higher teacher efficacy for instructional strategies than those teachers with five or fewer years of experience.

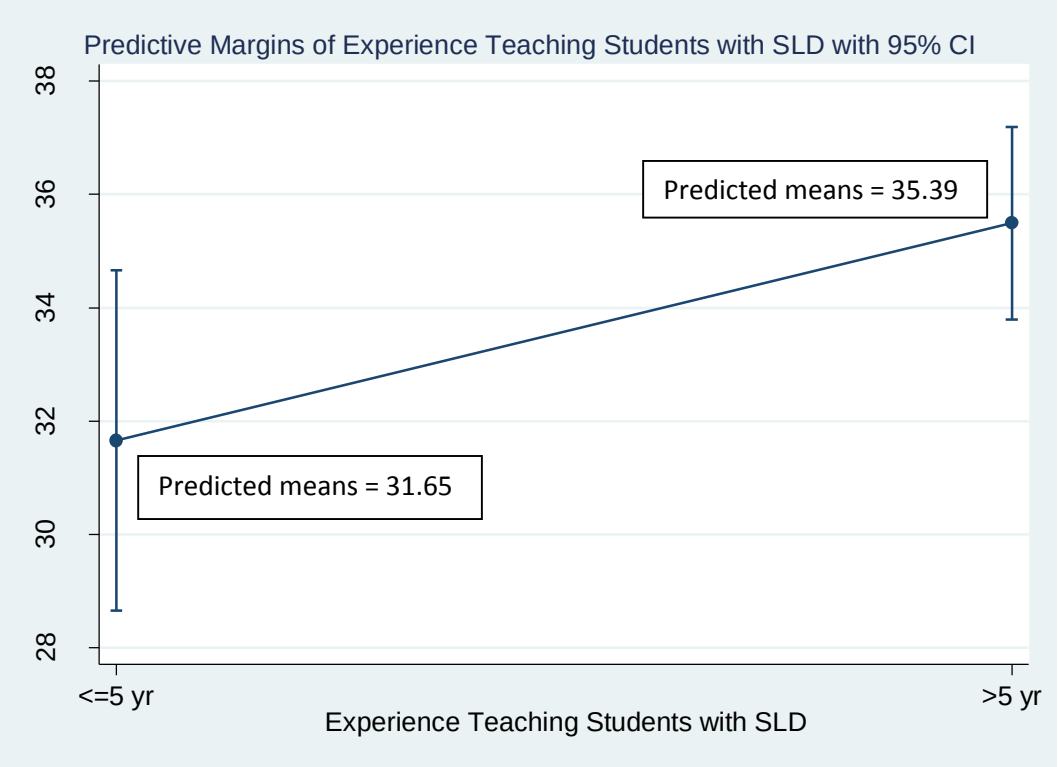

Figure 15. Predicted margins for response categories of economically disadvantaged and teacher efficacy for instructional strategies with 95% confidence intervals.

Figure 16 shows a predictive margins plot. This visual illustrates the following: Teachers with more than five years of experience teaching students with SLD have greater teacher efficacy for instructional strategies at all levels of employed teacher focused strategies as measured in this study. The teachers with the lowest use of teacher focused strategies and with more than five years of experience teaching students with SLD have higher teacher efficacy for instructional strategies than 10% of the teachers with five or fewer years of experience. Moreover, teachers with five or fewer years of experience with a maximum use of teacher focused strategies still have lower teacher efficacy for instructional strategies than 60% of those with more than five years of experience.

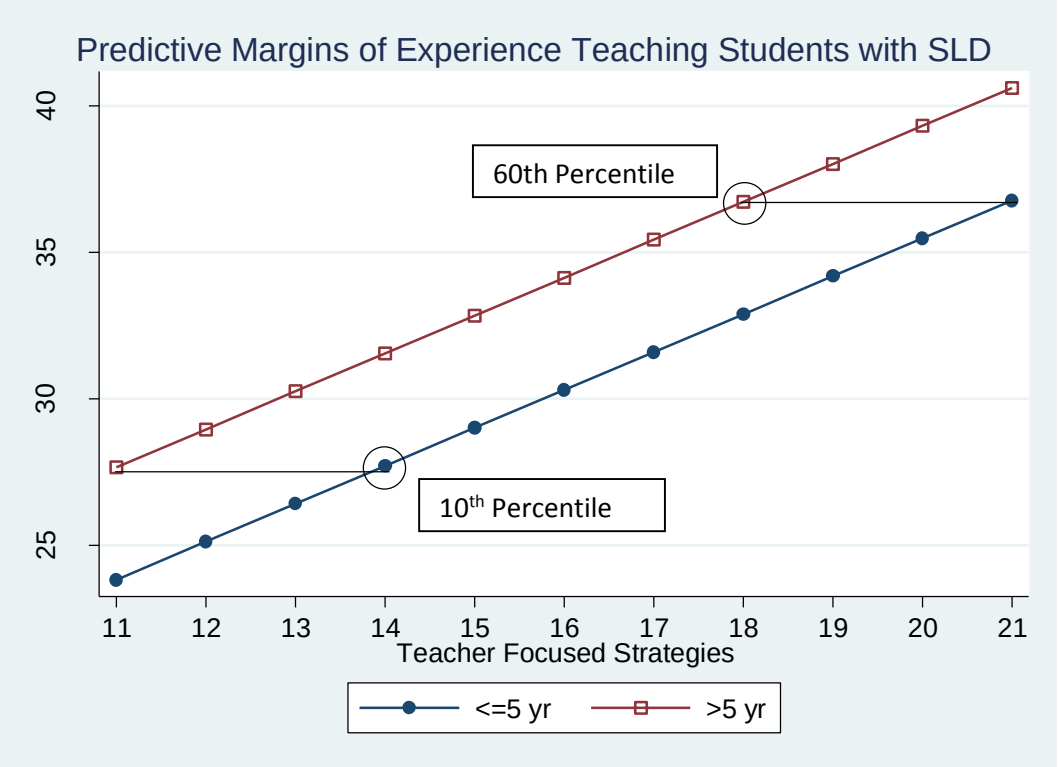

Figure 16. Predicted margins for experience teaching students with SLD and teacher focused strategies with teacher efficacy for instructional strategies.

Regression on Teacher Efficacy for Classroom Management

The next analysis proceeds to review the regression model for teacher efficacy for classroom management. This regression shows the R^2 as .49. This number does not provide a good estimate of explained variability because of the complexity of the model relative to the sample size; therefore, the adjusted R^2 was computed and used for interpretation ($_aR^2$ = .23) and in terms of Acock's (2012) interpretation of R^2 values, this reflects a moderately strong model.

Figure 17 includes the residuals-versus-fitted values plot. Upon examination of Figure 17, the residuals for the model indicate that the assumption of normal i.i.d errors was not met. To address this matter, robust standard errors were used.

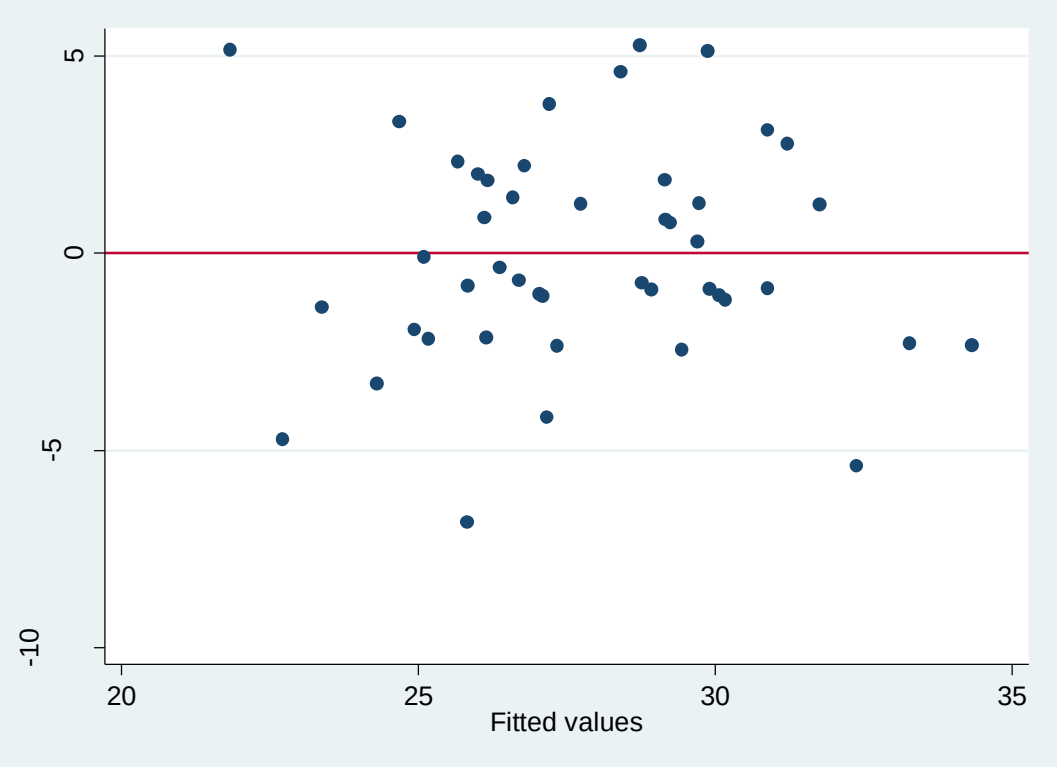

Figure 17. Residuals-versus-fitted values plot: teacher efficacy for classroom management.

Figure 18 includes a leverage-versus-squared values plot which indicates there are no influential cases pulling the model one direction or the other.

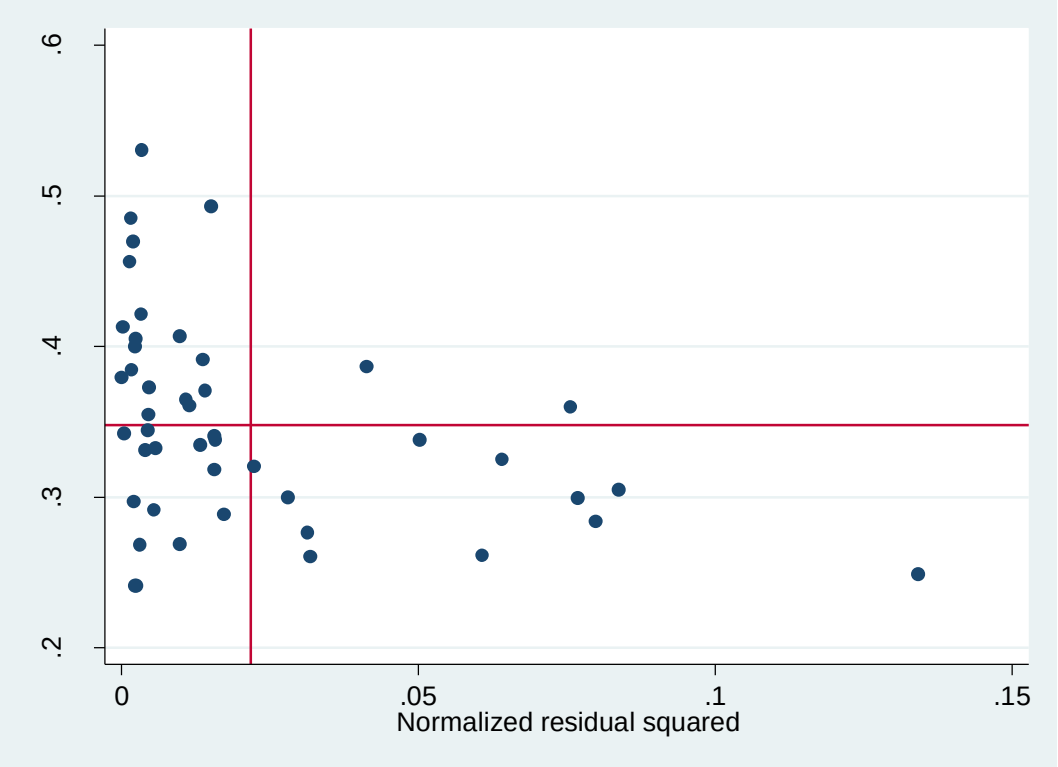

Figure 18. Leverage-versus-squared values plot: teacher efficacy for classroom management.

The final regression for teacher efficacy for classroom management on the independent variables included one continuous variable, two dichotomous variables, two latent variables constructed as multi-item scales after factor analysis, and five categorical variables. To further explore the categorical variables, I calculated predicted margins following Fisher's Protected Least Significant Difference method. Table 19 includes the results of the joint effects for five categorical variables. According to the output in Table 19, teacher beliefs to include students with SLD in the general education classroom and implementing student focused strategies had a positive significant relationship to teacher efficacy for classroom management. In addition, teachers with training in special education remains positively significant for teacher efficacy for classroom management.

Table 19

Ordinary Least Squares Regression Analysis Summary for Teacher Efficacy for Classroom Management

Dichotomous and Continuous Variable Effects						
Variable	Coefficient	SE	t	*P*	95% CI	95% CI
constant	15.32011	5.028131	3.05	0.005	5.051292	25.58892
iep_sld	.1155049	.1458785	0.79	0.435	-.1824188	.4134286
include	2.874096	1.161381	2.47	**0.019****	.5022394	5.245952
strat_teachfoc	.3561088	.2322934	1.53	0.136	-.1182977	.8305153
strat_studentfoc	.4173264	.2188434	1.91	**0.066***	-.0296115	.8642642
exp_sld	1.639887	1.133571	1.45	0.158	-.6751741	3.954948

Categorical Variable Joint Effects	F	P
train_sped	3.30	**0.0505****
meet_sped	0.62	0.5467
prin_value	0.12	0.8874
econ_dis	1.15	0.3315
cl_support	1.71	0.1972

R^2	.49
Adjusted R^2	.23
Prob > F	.03
RMSE	3.40
N	46

Note. *,**,*** indicate significance at the p<.10 and p<.05, p<.01 level, respectively.

According to the added variable plot in Figure 19, a positive significant relationship exists between student focused strategies and teacher efficacy for classroom management.

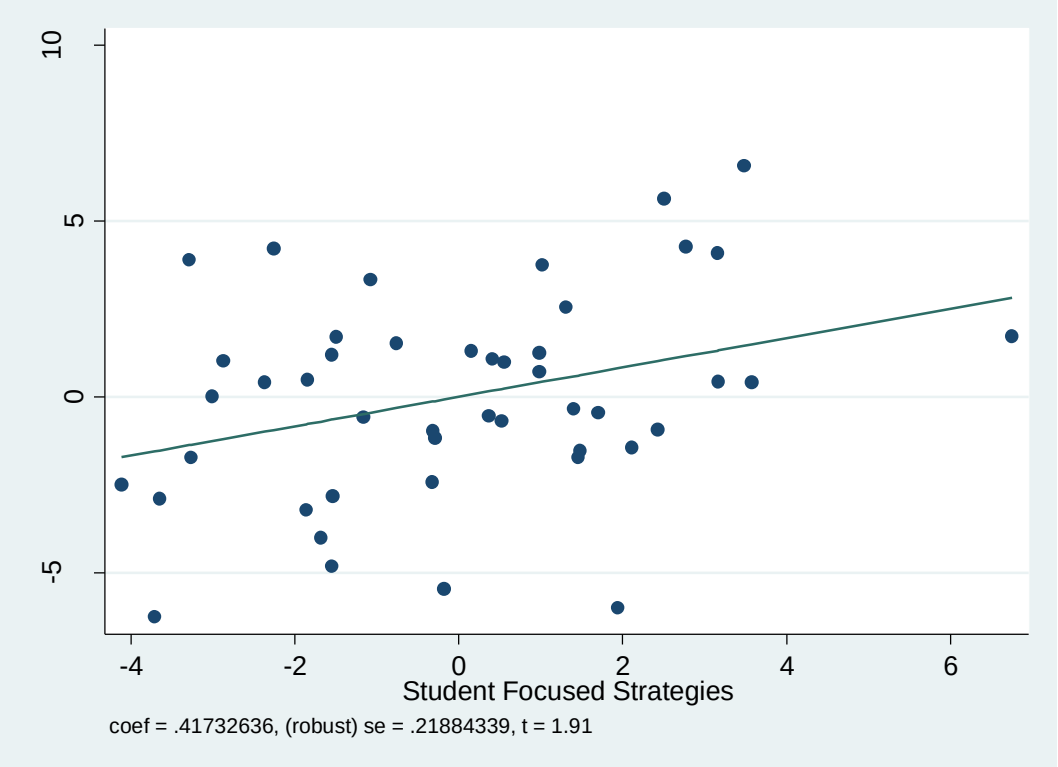

Figure 19. Added variable plot of student focused strategies and teacher efficacy for classroom management.

The predictive margins plot in Figure 20 presents the following: Teachers with minimal training in special education had a 3.88 higher mean and higher teacher efficacy in classroom management than teacher with graduate level training in special education.

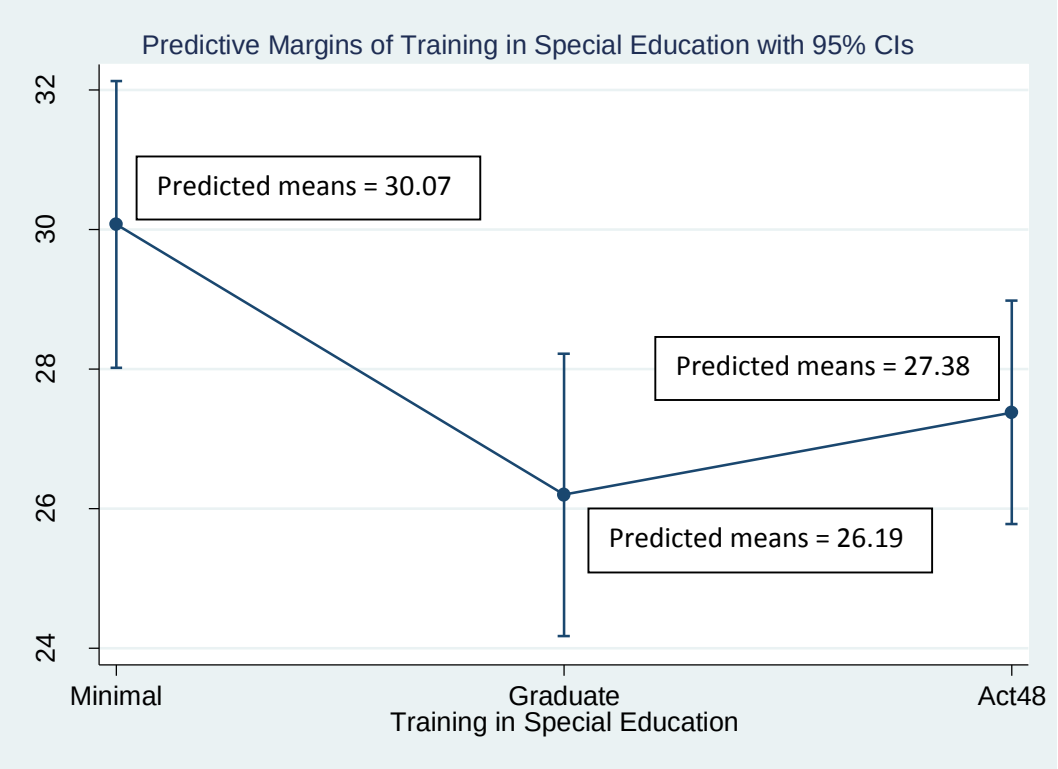

Figure 20. Predicted margins for response categories for training in special education and teacher efficacy for classroom management with 95% confidence intervals.

The predictive margins in Figure 21 illustrates the following: Teachers with minimal special education training have greater teacher efficacy for classroom management at all levels of employed student focused strategies as measured in this study. The teachers with lowest use of student focused strategies and with minimal special education training have higher have higher teacher efficacy for classroom management than 16% of teachers with Act 48 teacher training in special education provided by state or local agencies. Moreover, teachers with Act 48 special education training at the maximum use of student focused strategies still have lower teacher efficacy for classroom management than 62% of teachers with minimal special education training.

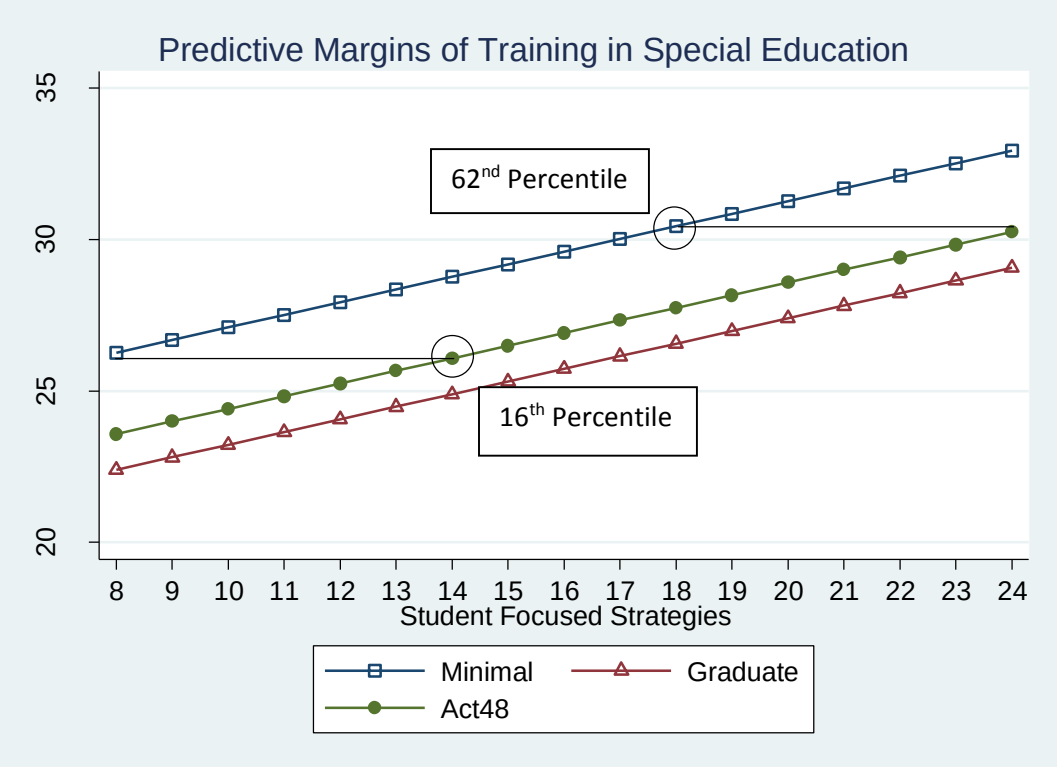

Figure 21. Predicted margins for experience with training in special education and student focused strategies with teacher efficacy for classroom management.

When reviewing the pairwise comparisons of predictive margins in Table 20, it indicates a significant difference when comparing teacher efficacy for classroom management to teachers with minimal special education training. This remains true when comparing teachers with graduate level training in special education. Finally, this relationship endures when comparing teachers with Act 48 special education training.

Table 20

Pairwise Comparisons of Predicted Margins of Training in Special Education for Teacher Efficacy for Classroom Management

	Contrast	Delta-Method Std. Error	Unadjusted t	Unadjusted P>|t|	Unadjusted 95% Conf. Interval
Training in Special Education					
Graduate vs Minimal	-3.874202	1.515585	-2.56	**0.016****	-6.969438; -.778965
Act48 vs Minimal	-2.691157	1.389939	-1.94	**0.062***	-5.52979; .1474764
Act48 vs Graduate	1.183045	1.166069	1.01	0.318	-1.198386; 3.564475

Note. *,**,*** indicate significance at the p<.10 and p<.05, p<.01 level, respectively.

Figure 22 confirms the following: Teachers who believe students with SLD should be included in their classrooms have higher teacher efficacy in classroom management as compared to teachers who do not believe that students with SLD should be included in the classroom.

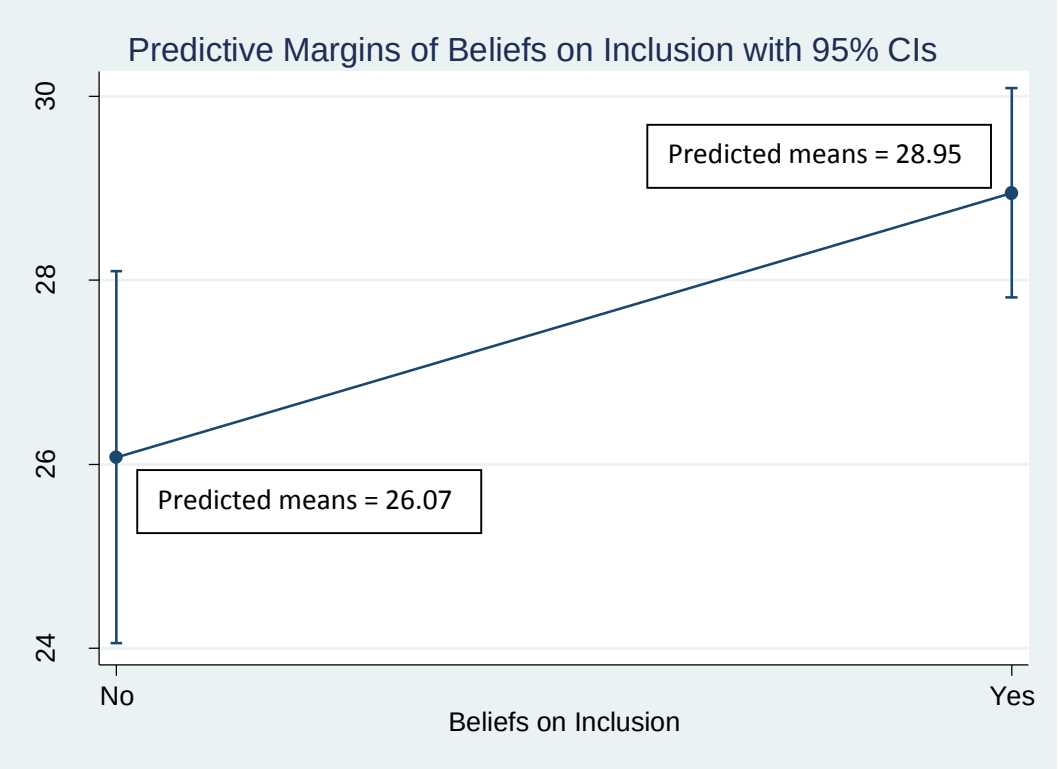

Figure 22. Predicted margins for response categories for inclusion beliefs and teacher efficacy for classroom management with 95% confidence intervals.

Figure 23 presents a predictive margins plot. This visual illustrates the following: Teachers who believe students with SLD should be included in the general education classroom have greater teacher efficacy for classroom management at all levels of employed student focused strategies as measured in this study. The teachers with the lowest use of student focused strategies and believed students with SLD should be included in the general education classroom have higher teacher efficacy for classroom management than 25% of teachers who do not believe students with SLD should be included. Moreover, teachers who do not believe students with SLD should be included in the general education classroom with a maximum use of student focused strategies still have lower teacher efficacy for classroom management than 50% of those who believe students with SLD should be included in the general educational classroom.

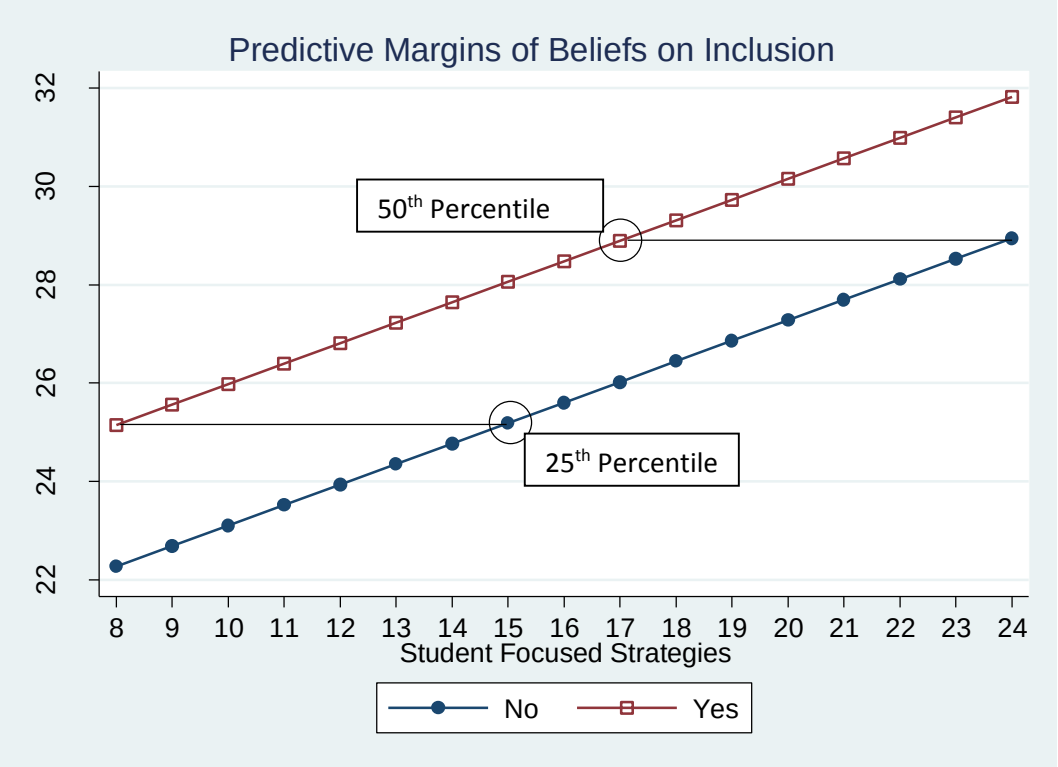

Figure 23. Predicted margins for inclusion beliefs and student focused strategies with teacher efficacy for classroom management.

Regression Teacher Efficacy for Student Engagement

The final analysis proceeds to review the regression model for teacher efficacy for student engagement. This regression shows the R^2 as .49. This number does not provide a good estimate of explained variability because of the complexity of the model relative to the sample size; therefore, the adjusted R^2 was computed and used for interpretation ($_aR^2$ = .23) and in terms of Acock's (2012) interpretation of R^2 values, this reflects a moderately strong model.

Figure 24 includes the residuals-versus-fitted values plot. The residuals for the model indicate that the assumption of normal i.i.d errors was not met. To address this matter, robust standard errors were used.

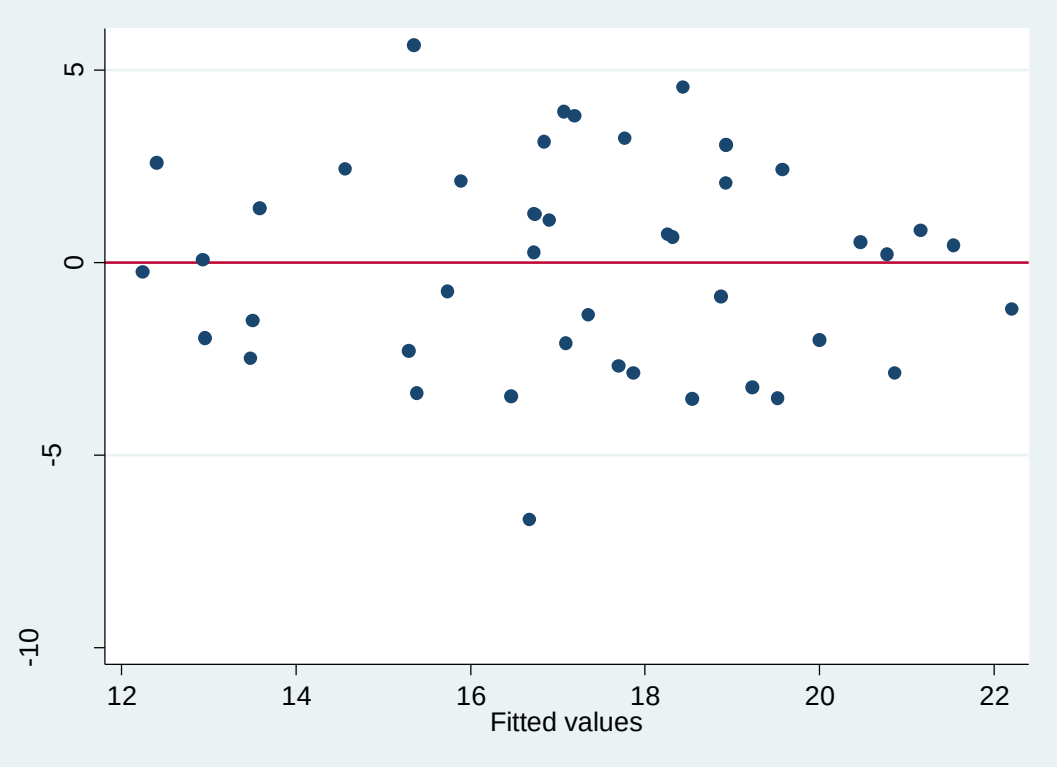

Figure 24. Residuals-versus-fitted values plot: teacher efficacy for student engagement.

A leverage-versus-squared values plot follows as indicated in Figure 25 which indicates that none of the data points are pulling or leveraging the model with influential cases.

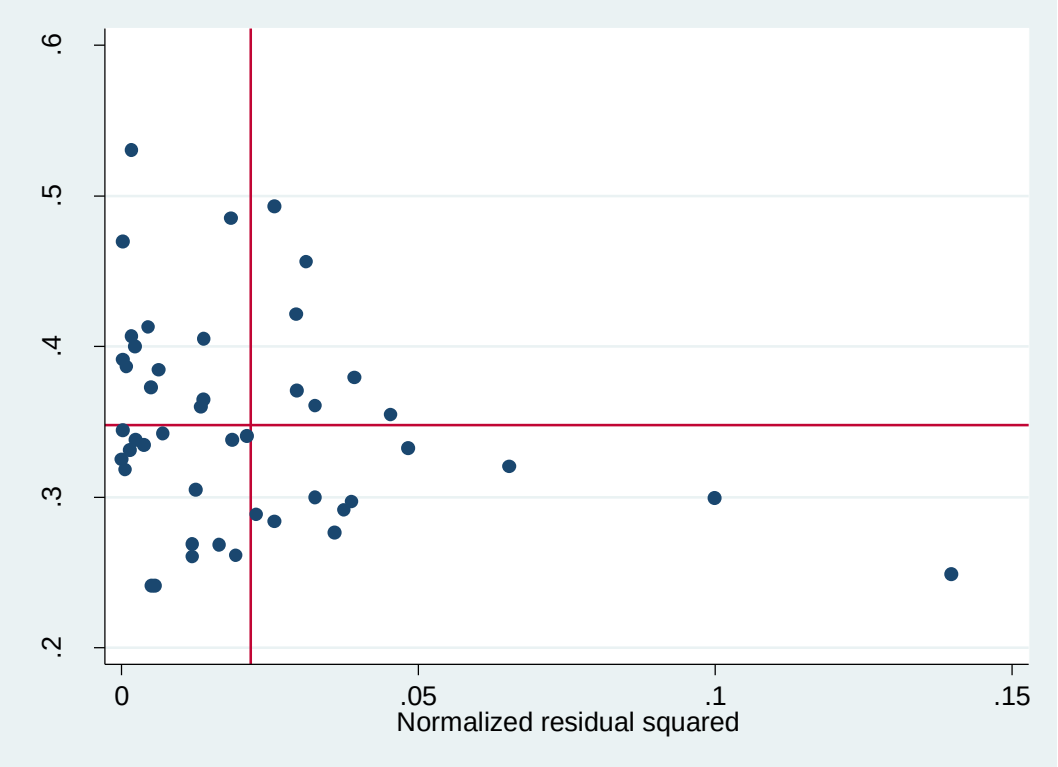

Figure 25. Leverage-versus-squared values plot: teacher efficacy for student engagement.

The final regression for teacher efficacy for student engagement on the independent variables included one continuous variable, two dichotomous variables, two latent variables constructed as multi-item scales after factor analysis, and five categorical variables. To further explore the categorical variables, I calculated predicted margins following Fisher's Protected Least Significant Difference method. Table 21 includes the results of the joint effects for five categorical variables. The regression output in Table 21 specifies the utilization of student focused strategies had a positive significant relationship to teacher efficacy for student engagement. In addition teachers who taught in classroom settings with economically disadvantaged students had a positive significant relationship to teacher efficacy for student engagement.

Table 21

Ordinary Least Squares Regression Analysis Summary for Teacher Efficacy for Student Engagement

Dichotomous and Continuous Variable Effects						
Variable	Coefficient	SE	t	*P*	95% CI	95% CI
constant	13.24914	4.559287	2.91	0.007	3.93783	22.56044
iep_sld	-.0551559	.1790491	-.31	.760	-.4208229	.3105111
include	.0020104	1.052821	0.00	0.998	-2.148137	2.152158
strat_teachfoc	-.1187852	.2369596	-0.50	0.620	-.6027213	.365151
strat_studentfoc	.4540835	.1974318	2.30	**0.029****	.050874	.8572931
exp_sld	.9036498	1.086869	0.83	0.412	-1.316033	3.123333

Categorical Variable Joint Effects	F	P
train_sped	0.14	0.8719
meet_sped	0.14	0.8685
prin_value	1.39	0.2650
econ_dis	3.18	**0.0558***
cl_support	2.16	0.1325

R^2	.49
Adjusted R^2	.23
Prob > F	.00
RMSE	3.26
N	46

Note. *,**,*** indicate significance at the p<.10 and p<.05, p<.01 level, respectively.

The added variable plot of Figure 26 suggests a positive significant relationship of the utilization of student focused strategies to teacher efficacy for student engagement.

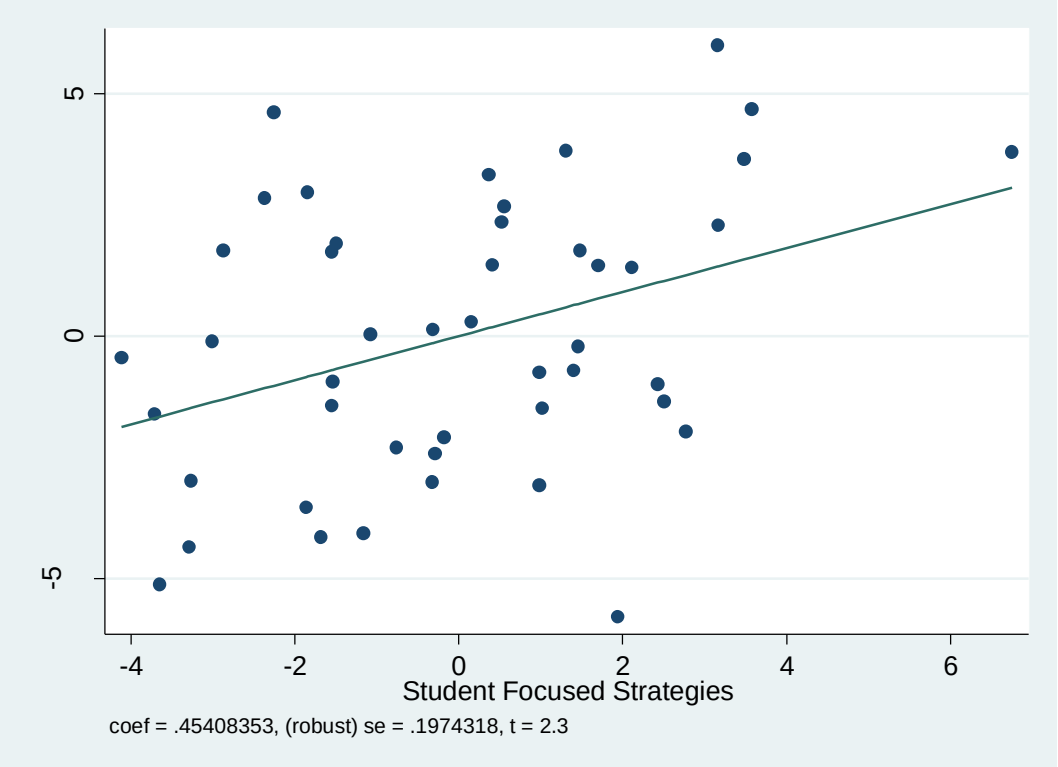

Figure 26. Added variable plot of student focused strategies to teacher efficacy for student engagement.

Figure 27 of predictive margins plot reveals the following: Teachers with more than 50% of the students who are economically disadvantaged have 3.22 higher predicted mean and higher teacher efficacy for student engagement than those teachers who teach where 26%-50% of the students are economically disadvantaged.

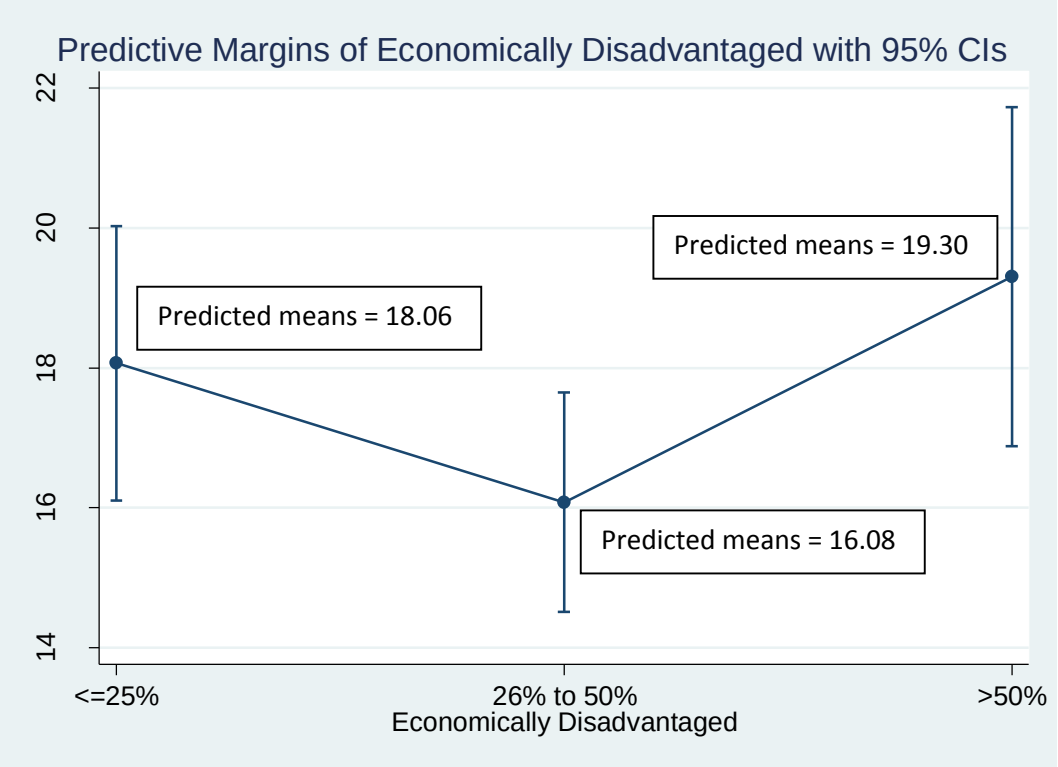

Figure 27. Predicted margins for response categories for economically disadvantaged and teacher efficacy of student engagement with 95% confidence intervals.

Figure 23 presents a predictive margins plot. The visual illustrates the following: Teachers with 26%-50% of students who are economically disadvantaged and who use the maximum amount of student focused strategies still have a lower teacher efficacy for student engagement than 50% of the teachers who teach in classes when more than 50% of the students who are economically disadvantaged. Also, overall, teachers in classes with high numbers of economically disadvantaged students (i.e., >50%) consistently use more student focused strategies than teaches that have less numbers of economically disadvantaged students.

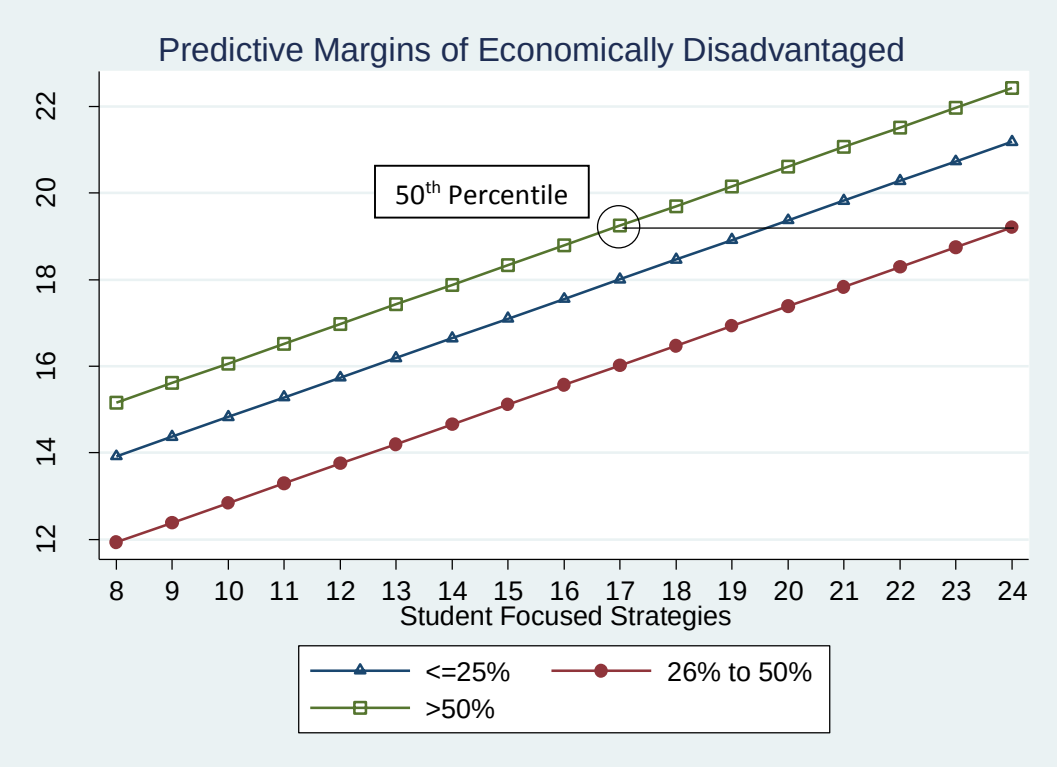

Figure 28. Predicted margins for economically disadvantaged and student focused strategies with teacher efficacy for student engagement.

When reviewing the pairwise comparisons of predictive margins in Table 22, it indicates a significant difference when comparing teacher efficacy for student engagement to teaching students who are economically disadvantaged when more than 50% of the students are identified as economically disadvantaged. This relationship remains true when comparing this group to 26% to 50% as economically disadvantaged.

Table 22

Pairwise Comparisons of Economically Disadvantaged for Teacher Efficacy for Student Engagement

	Contrast	Delta-Method Std. Error	Unadjusted t	Unadjusted P>|t|	Unadjusted 95% Conf. Interval
Economically Disadvantaged					
26% to 50% vs ≤25%	-1.987477	1.360188	-1.46	0.154	-4.765351; .7903975
>50% vs ≤25%	1.237136	1.647041	0.75	0.458	-2.126571; 4.600843
>50% vs 26% to 50%	3.224613	1.359727	2.37	**0.024****	.4476801; 6.001546

Note. *,**,*** indicate significance at the p<.10 and p<.05, p<.01 level, respectively.

Summary of Chapter 4

In order to analyze the dependent variables (i.e. overall teacher efficacy, teacher efficacy for instructional strategies, teacher efficacy for classroom management, and teacher efficacy for student engagement), I utilized OLS multiple regression and regressed each dependent variable on the ten identified independent variables. In each case, I used regression with robust standard errors and robust regression. To evaluate whether the assumptions of OLS were met, I applied a series of regression diagnostics to examine the following: multicollinearity, homoscedasticity, and influential cases on variables and the model as a whole.

For all things being equal, the results indicate the following:

Overall teacher efficacy. The teachers who used teacher focused strategies, had more than five years of experience teaching students with SLD, and taught in schools where more than 50% of the students were economically disadvantaged showed higher

overall teacher efficacy than teachers who did not utilize such strategies, had five or fewer years of experience teaching students with SLD, and taught in schools where 50% or fewer of the students were economically disadvantaged.

Teacher efficacy for instructional strategies. The teachers who used teacher focused strategies and those who had more than five years of experience teaching students with SLD indicated higher teacher efficacy for instructional strategies than those teachers who did not utilize such strategies or had five or fewer years of experience teaching students with SLD.

Teacher efficacy for classroom management. The teachers who believed in including students with SLD in the general education classroom, used student focused strategies, and had minimal training in special education exhibited higher teacher efficacy for classroom management as opposed to teachers who did not believe students with SLD should be included in the classroom, did not implement such strategies, and had higher levels of training in special education.

Teacher efficacy for student engagement. The teachers who incorporated student focused strategies and taught in classrooms where more than 50% of the students were economically disadvantaged demonstrated higher teacher efficacy for student engagement than those teachers who did not implement such strategies and taught in classrooms where 50% or fewer of the students are economically disadvantaged.

Table 23 presents a summary of the significance and direction of the relationship between the dependent and independent variables.

Table 23

Summary Table of Significance and Direction of Relationship

Variables	Teacher Efficacy	Teacher Efficacy for Instructional Strategies	Teacher Efficacy for Classroom Management	Teacher Efficacy for Student Engagement
Number of Students with IEPs for SLD (iep_sld)				
Beliefs on Inclusion (include)			p = .019** (+)	
Teacher Focused Strategies (strat_teachfoc)	p = .043** (+)	p = .005*** (+)		
Student Focused Strategies (strat_studentfoc)			p = .066* (+)	p = .029** (+)
Experience with Students with SLD (exp_sld)	p = .031** (+)	p = .034** (+)		
Training in Special Education (train_sped)			p = .050** (+)	
Meeting with Special Educators - Collaboration (meet_sped)				
Principal Values and Supports Inclusion (prin_value)				
Economically Disadvantaged (econ_dis)	p = .033** (+)			p = .055* (+)
Classroom Support (cl_support)				
R^2	.52	.53	.49	.48
Adjusted R^2	.28	.29	.23	.23

Note. *,**,*** indicate significance at the p<.10, p<.05, p<.01 level, respectively. +/- indicates the direction of the coefficients.

The next and final chapter addresses the proposed research question and hypotheses, provides a summary of findings and recommendations, outlines limitations and delimitations of the study, suggests recommendations for future research, and ends with a summary and conclusions.

Chapter 5

DISCUSSION

This study sought to gain insight and clarification as to what elements may influence teacher efficacy for secondary general education teachers supporting students with SLD in an inclusive secondary classroom. Teacher beliefs about inclusion, classroom support, teacher training, teacher collaboration, administrative support, teacher's instructional repertoire, the number of students with IEPs for SLD, the number of years of experiences teachers had teaching students with SLD, and the economic status of the students were all considered. By examining the results of this study, school district personnel, school administrators, school consultants, general educators, special educators, and paraprofessionals may work together to better ensure that efforts are put into place to support general education teachers. By doing so, school districts have the opportunity to effectively enrich teacher development which will in turn lead to effective inclusion for students with SLD in the secondary general education classroom.

This chapter addresses the proposed research question and hypotheses, provides a summary of findings and recommendations, outlines the limitations and delimitations of the study, suggests recommendations for future research, and ends with a summary and conclusions.

Research Question and Hypotheses

This study focused on one research question and proposed four hypotheses as stated in the first chapter. Therefore, this section addresses the research question and hypotheses based upon the results reported in the fourth chapter.

Research Question

The research question asks the following: What variables affect teacher efficacy for secondary general education teachers supporting students diagnosed with SLD? For this exploratory study, 71 school district superintendents in the south-central region of Pennsylvania were contacted to participate in this study which included 74 high schools. Twenty-two school districts agreed to participate comprising of 24 high schools. Forty-six general education teachers completed the survey with 28 Algebra I and 18 English teachers who teach at the ninth grade level.

Teacher efficacy involves a belief or judgment as to whether or not the teacher or individual has the necessary capabilities to render desired outcomes of student learning and engagement, even among those students who may be unmotivated or difficult (Gibson & Dembo, 1984; Gotshall & Stefanou, 2011; Tschannen-Moran & Woolfolk Hoy, 2001). To adequately measure the dependent variable, teacher efficacy, this study utilized a survey by Tschannen-Moran and Woolfolk Hoy (2001) called Teachers' Sense of Efficacy Scale (TSES). Based on the results in chapter four, teacher efficacy exists as a multidimensional construct. A 12-item scale illustrates four dependent variables as indicated in questions four through seven of the survey (Appendix A). The first dependent variable consists of (1) *teacher efficacy* in its totality which entails teacher efficacy in the following three dimensions: teacher efficacy for instructional strategies, teacher efficacy for classroom management, and teacher efficacy for student engagement. Since teacher efficacy breaks down into three dimensions, the following variables were generated by summing the survey items for each respondent for each dimension: (2) *teacher efficacy for instructional strategies*, which consists of five items (crafting good

questions, using a variety of assessment strategies, providing alternative explanations when students are confused, assisting families in helping their children in school, and implementing alternative strategies), (3) *teacher efficacy for classroom management*, which contains four items (controlling disruptive behavior, assisting students to follow classroom rules, addressing disruptive or noisy students, and establishing a classroom management system), and (4) *teacher efficacy for student engagement*, which encompasses three items (motivating students, encouraging students to believe they can do well in school, and helping students value learning).

Findings from this study indicate that implementing teacher focused strategies, experience with teaching students with SLD, and teaching in economically disadvantaged classrooms were significant in predicting overall teacher efficacy. In addition, using teacher focused strategies and experience with students with SLD were significant for teacher efficacy for instructional strategies. Moreover, additional findings demonstrated that beliefs on inclusion, implementing student focused strategies, and training in special education significantly affected teacher efficacy for classroom management. Finally, implementing student focused strategies and teaching in economically disadvantaged classrooms were significant for teacher efficacy for student engagement.

Hypotheses

Four hypotheses were proposed in the first chapter and are addressed in this section.

Hypothesis 1. A teacher's belief on inclusion has a direct relationship to teacher efficacy. As indicated in chapter 2, Buell et al. (1999) reported a correlation between acceptance of the inclusion idea and teachers' sense of competency. According to the

findings of this study a positive significant relationship exists between a teacher's belief on inclusion and teacher efficacy for classroom management. While a direct relationship exists, this relationship exists with a specified dimension of teacher efficacy for classroom management.

Hypothesis 2. A teacher's level of training in special education has a direct relationship to teacher efficacy. The research on inclusion indicates that general education teachers feel they are not adequately prepared to teach students with disabilities (de Bettencourt, 1999; Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Karge, Lasky, McCabe, & Robb, 1995; Kearney & Durand, 1992; Welch, 1996). In addition, the literature indicates there is a direct positive relationship between supporting adult learning and increasing student achievement (Moller & Pankake, 2006; Wagner, 2007). However, Murname & Willett (2011) found that traditional professional development days had very little influence on teacher practice or student performance. Based on the outcomes of this study, minimal training exhibited a positive significant relationship to teacher efficacy for classroom management. However, the relationship existed with minimal training. In certain respects, this outcome coincides with the literature that perhaps a minimal amount of special education training influences teacher efficacy for classroom management, but the higher level of special education training, particularly at the graduate level, had a lower predicted means than minimal training or Act 48 training delivered by local educational agencies or in accordance with Pennsylvania's credit hours for professional development. The fact that minimal training exhibited positive significant outcomes versus graduate level training in special education

supports Murname & Willett (2011)'s work that perhaps certain types of professional development have very little influence over teacher practice.

Hypothesis 3. A teacher's instructional repertoire and use of instructional strategies has a direct relationship to teacher efficacy. The usage of effective instructional practices in the classroom consistently remains one of the most cited findings associated with successful inclusion (Lipsky & Gartner, 1996b; Schaffner & Buswell, 1996; Scruggs & Mastropieri, 1994). The instructional repertoire for this study branched out into two areas: teacher focused strategies and student focused strategies. The use of teacher focused strategies exhibited a positive significant relationship with overall teacher efficacy and teacher efficacy for instructional strategies. Additionally, the use of student focused strategies demonstrated a positive significant relationship to teacher efficacy for classroom management and teacher efficacy for student engagement. Therefore, a teacher's instructional repertoire as measured in the case as the implementation of certain types of strategies indicated significance for overall teacher efficacy and across all three dimensions of teacher efficacy. Hence this finding aligns with the existing research as instructional practice remains one of the most consistently cited conditions associated with successful inclusion.

Hypothesis 4. A teacher's experience working with students with SLD has a direct relationship to teacher efficacy. Several researchers found that the extent of teaching experience positively correlated with personal teacher efficacy and negatively with general efficacy beliefs (Allinder, 1995; Coladarci & Breton, 1997; Hoy and Woolfolk, 1993; Wertheim & Yona, 2002). This study indicated teachers with more than five years of experience teaching students with SLD demonstrated higher overall teacher

efficacy and teacher efficacy for instructional strategies. Hence, this study leans toward the positively correlated studies with personal teacher efficacy.

Summary of Findings and Recommendations

As Coladarci (1992) found, teacher efficacy, when compared with such factors as income and school climate, became the strongest predictor of a teacher's commitment to the teaching profession. In addition, when the classroom environment involves teaching students with SLD, teacher efficacy becomes an important variable (Brady & Woolfson, 2008). These findings coupled with the findings from this study illustrate that teacher efficacy plays an important role in teaching. Therefore, this section highlights and discusses the key findings and provides recommendations to teachers, administrators, instructional coaches, district personnel, and other individuals who may benefit from this research.

Overall teacher efficacy. The following two elements exhibited a positive significant relationship to overall teacher efficacy. First, teachers who implemented teacher focused strategies in their classroom had higher teacher efficacy than those who did not. Teacher focused strategies comprise of Marzano et al. (2001) and Marzano (2007)'s research on high yielding instructional strategies that increased student achievement. Specifically, the teacher focused strategies included strategies initiated by the teacher and included the following: (1) setting learning objectives for students, (2) providing feedback to students, (3) presenting and asking the students to provide similarities and differences presented in the content material, and (4) providing recognition and reinforcing students' efforts in the classroom. Based on this finding, a recommendation for teachers would be to implement these strategies as much as possible.

It could be the case that teachers are not familiar with such strategies; therefore, instructional coaches in schools or district personnel responsible for professional development may want to investigate these strategies and provide training in this area.

Second, the teachers who had more than five years of experience teaching students with SLD had higher overall teacher efficacy compared to teachers who had five or fewer years of experience teaching students with SLD. A recommendation based on this outcome is for administrators who may assign teachers to work with specific students or guidance counselors and special education directors who may assign students to certain teachers to consider student placement. When looking at student placement and scheduling, it would be important to consider teachers who have more than five years of experience teaching students with SLD. If more experienced teachers are not always available to support the caseload of such students, perhaps the experienced teachers could be mentors to newer or inexperienced teachers and provide opportunities for new or inexperienced teachers to observe classrooms with more experienced teachers.

Teacher efficacy for instructional strategies. Teacher efficacy for instructional strategies had similar findings to overall teacher efficacy. The teachers who used teacher focused strategies (as mentioned above) in their classrooms and had more than five years of experience teaching students with SLD indicated higher teacher efficacy for instructional strategies than those teachers who did not utilize such strategies or had five or fewer years of experience teaching students with SLD. Therefore, the same recommendations would hold true as indicated earlier in order for teachers to have high teacher efficacy for instructional strategies. Teacher efficacy for instructional strategies consists of (1) crafting good questions, (2) using a variety of assessment strategies, (3)

providing alternative explanations when students are confused, (4) assisting families in helping their children in school, and (5) implementing alternative strategies.

Teacher efficacy for classroom management. Teacher efficacy for classroom management entails (1) controlling disruptive behavior, (2) assisting students to follow classroom rules, (3) addressing disruptive or noisy students, and (4) establishing a classroom management system. Different findings evolved for teacher efficacy for classroom management. First, the teachers who believed in including students with SLD in the general education classroom had a higher teacher efficacy for classroom management than those teachers who did not believe in including students with SLD. This finding is important for administrators and human resource personnel to consider when hiring teachers. When interviewing teachers for a position, asking them what their beliefs about inclusion becomes relevant. By inquiring if they believe students with SLD belong in the classroom, that belief may influence their teacher efficacy in classroom management or how they support students with SLD particularly as it pertains to classroom discipline.

Second, teachers who implemented student focused strategies had a higher teacher efficacy for classroom management than those teachers who did not. The student focused strategies differ from teacher focused strategies. Student focused strategies engage students and comprise of the following elements: (1) tracking student progress with scoring scales or rubrics, (2) building vocabulary by participating in activities around vocabulary, (3) engaging in interactive games around the content area, (4) summarizing the content that is presented in a concise way, and (5) using nonlinguistic representations (e.g., graphic organizers, physical models, pictures, etc.). This finding

indicates recommending teachers to become familiar with these strategies and implementing them because this would likely help to engage students in the classroom. In addition, professional development for teachers could revolve around student focused strategies; therefore, this finding is pertinent to instructional coaches in school districts or district level personnel who determine the type of professional development teachers receive.

Finally, teachers who had minimal level of training in special education exhibited higher teacher efficacy of classroom management as opposed to teachers who had higher levels of training in special education from the graduate level to Act 48 training. Act 48 training refers to training that meets the criteria to receive professional development credit hours in Pennsylvania in order to retain teacher certification. In addition, minimal training as defined in this study is at least one undergraduate graduate course to no formalized training regarding special education. This outcome might suggest that the more teachers knew about special education, the more they perceived themselves as being inadequate to meet all of the students' needs, particularly supporting students with SLD. As a result, their perceived teacher efficacy for classroom management was not as high as expected. On the other hand, this finding provides a key recommendation to pre-service providers and universities or school personnel who provide teacher training. Extensive training in special education may not be the way to support teachers. Rather, providing training and professional development that focuses on how to best support students or utilizing teacher focused and student focused might serve teachers better to support students with SLD.

Teacher efficacy for student engagement. A similar finding for teacher efficacy for student engagement surfaced as with teacher efficacy for classroom management. Teacher efficacy for student engagement encompasses the following: (1) motivating students, (2) encouraging students to believe they can do well in school, and (3) helping students value learning. This finding indicated that teachers who implemented student focused strategies (as outlined in the above section) had higher teacher efficacy for student engagement than those teacher who did not implement student focused strategies. This finding is statistically significant but it also make sense that the more teachers used student focused or strategies to engage students, their teacher efficacy in student engagement would be higher than those teachers who did not. Again, a recommendation for teachers, instructional coaches, or district personnel in charge of professional development would be to introduce student focused strategies to teachers in training or continue to reinforce the usage of such strategies if they are already in place.

All of the above findings align with the proposed hypotheses. One other independent variable, economically disadvantaged, was included as a control variable and found significant in this study. Teachers who taught in classroom settings where more than 50% of the students were economically disadvantaged showed higher overall teacher efficacy and higher teacher efficacy for student engagement than teachers who taught in classroom settings where 50% or fewer of the students were economically disadvantaged. This finding was unexpected because the literature indicates that Garcia (2004) and Hoover-Dempsey, Bassler, and Brissie (1992) did not find a significant correlation between the proportion of students receiving free or reduced-price lunch and teacher self-efficacy.

The rationale behind this latest finding might suggest that teachers in this setting receive more types of supports to assist students than those teachers in other settings. Schools in Pennsylvania receive Title I funding from the U.S. Department of Education based on the needs of the students. This funding provides resources and substantial opportunities for professional development for teachers in high-poverty schools.

Overall, these findings provide great promise and suggestions for various stakeholders who wish to enhance teacher efficacy.

Limitations and Delimitations

After completing this study, the following limitations and delimitations surfaced. The first limitation of the study pertains to the size of the sample. This study focused on only 22 school districts in Pennsylvania yielding just 46 survey respondents. With 500 school districts in Pennsylvania alone, a larger population would have provided more data and possibly different outcomes. However, while this study may be small in scale, it still offers some insight with practical significance as it takes a larger difference to have significance in a smaller sample versus a larger sample. In sum, this limited section of participants is not representative of all educators thereby reducing the generalizability of the outcomes, but it does provide some preliminary findings which a larger study may draw from and use.

Along these same lines, a primary delimitation of this study pertained to securing permission from each superintendent to survey teachers in each district. Out of the 71 school district superintendents that were asked to invite teachers to participate in this study, only 22 superintendents complied. In addition, due to the need for IRB approval from each superintendent, retrieving permission turned out to be a lengthy process and

added another layer to accessing teachers to participate in this study. A study conducted through a teacher-based association (e.g., Pennsylvania State Education Association, Pennsylvania Council of Teachers of Mathematics, or the Pennsylvania Council of Teachers of English Language Arts) would require only one approval from the agency to contact all teachers. This approach would most likely have produced a larger and more diverse survey response set.

The timing of the survey was somewhat limiting. The survey administration fell at the end of the school year when secondary teachers are preparing students for finals, fulfilling extensive grading requirements, and completing the amass of end of the school responsibilities. Therefore, administering the survey in February or March (after teachers have had students for at least one semester and after the first semester finals) might encourage more participation due to better timing in the school year.

Recommendations for Future Research

Suggestions for future research materialized from the study's scope, findings, and literature review. Building on this exploratory investigation, a more in-depth study would offer more opportunities to explore teacher efficacy. By administering the survey to a much larger number of general education high school teachers who teach English at the ninth grade level and in Algebra I would provide a more diverse survey response. Then a comparison of the results of this study to further studies would provide further understanding of what variables may influence teacher efficacy for high school general education supporting students with SLD.

The findings from the study indicated that teachers who taught in classrooms where more than 50% of the students were economically disadvantaged showed higher

levels of overall teacher efficacy and teacher efficacy for student engagement than teachers who taught in classroom where 50% or fewer of the students were economically disadvantaged. A more in-depth study with schools of various economic levels would likely prove useful and intriguing with respect to seeing if a trend of higher levels of teacher efficacy exists in classrooms where more than half of the students are economically disadvantaged.

In the literature review in the second chapter, two studies were noted with regards to teacher training in special education. First, researchers found an association between teacher preparation and training in the area of special education with more positive attitudes toward inclusion (King & Edmunds, 2001; McLeskey et al., 2001). In a qualitative study, Liston (2004) interviewed 10 general educators and 10 special educators teaching at the high school level. Even though most of the interviewees were experienced educators, every participant emphasized the importance of continued professional development. The interviews showed a need for on-going professional development regarding inclusive and special education issues.

This study found that minimal training yielded higher teacher efficacy results than graduate training. Minimal training as defined in this study is at least one undergraduate graduate course to no formalized training regarding special education. Perhaps conducting a mixed study using quantitative and qualitative measures could be enlightening and more informative. The quantitative aspects of a mixed study could continue to survey teachers to see if different levels of training yielded the same results as this study, but the qualitative aspects of a mixed study would incorporate teacher voice. The teachers being interviewed would have the opportunity to specify the types of

training and professional development that they deem important in order to support students with SLD which may not be captured through survey data.

Summary and Conclusions

Due to the legal mandates of special education laws and accountability measures attached to standards-based reform policies, general education teachers teach in ever-changing and demanding environments. The combination of a fluctuating environment, the students they teach, the school where they teach, and the content they must teach increases the classroom and learning complexities for teachers. Therefore, teacher efficacy is at risk of being compromised. One of the expanding impingements on teachers involves enhanced complexities due to inclusion. However, if inroads for teachers supporting students with SLD were identified and determined to positively influence teacher efficacy, then perhaps teacher efficacy could be positively maintained irrespective of these circumstances. As the previous literature indicated, individuals who maintain high efficacy beliefs tend to visualize success scenarios that provide positive guides and supports for performance (Bandura, 1993). These individuals are engaged and foster a sense of fulfillment (Bandura, 1997). In addition, highly efficacious individuals may not always attain certain outcomes, but they will continue to try and intensify their efforts in order to impact change or attain a desired result (Bandura, 1997). Therefore, maintaining high teacher efficacy would be an important component for schools to pay attention to and monitor.

While a considerable amount of research exists on teacher efficacy, few researchers have explored teacher efficacy at the secondary level in an inclusive classroom. The findings from this study indicate that implementing teacher focused

strategies, experience with teaching students with SLD, and teaching in economically disadvantaged classrooms were significant in predicting overall teacher efficacy. In addition, teacher focused strategies and experience with students with SLD were also significant for teacher efficacy for instructional strategies. Implementing student focused strategies and teaching in economically disadvantaged classrooms were similarly significant for teacher efficacy for student engagement. Finally, additional findings demonstrated that beliefs on inclusion, implementing student focused strategies, and training in special education significantly affected teacher efficacy for classroom management. By isolating elements that significantly relate to teacher efficacy and the implementation of effective inclusion, school districts and personnel can better plan and prepare general education high school teachers to support students with SLD in the general education classroom.

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Appendix A

Survey Instrument

Directions: This survey is designed to help us gain a better understanding of the kinds of things that are challenging for teachers in their school activities. Some questions will be asked using the following acronyms:

IEP -- Individualized Education Plans
SLD -- Specified Learning Disability (SLD)
Note: SLD also refers to LD or Learning Disability.

Q1: The following information pertains to a survey on teacher efficacy. Please read and click the button at the bottom of this section to indicate your interest in participating. The purpose of this study is designed to help us gain a better understanding of the kinds of things that are challenging for teachers in their school activities. Specifically, this study looks at teacher efficacy for general education teachers who support students with Individualized Education Plans (IEPs) for a specific learning disability (SLD) or a learning disability (LD). The survey is being conducted by Laura C. Moran, M.A., as part of a dissertation under the direction John A. Anderson, Ph.D. If you accept, you will be directed to an online survey, which will take approximately 15 minutes to complete. You were selected to participate in this study because you are a general education high school teacher who teaches 9th grade English or Algebra I. Teacher participation in this study is voluntary and the information collected will remain anonymous. If the results of this study become public, no information that would identify you will be included. Only the primary researcher will have access to the study data, which will be stored on a secured computer, accessible only by an authorized password. If you participate, you are free to answer all, some or none of the questions on the survey. You may withdraw at any time while taking the survey by closing your browser. If you have questions about the study or study procedures, please contact the project personnel at the address and phone number shown below. John A. Anderson, Ph.D. Professor and ALS Doctoral Coordinator Department of Sociology Dixon University Center, South Hall, Rm. 105 2986 North Second Street Harrisburg, PA 17110 717.720.4064 Please note that this project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724-357-7730). If you have questions about this survey or experience technical difficulties while taking the survey, please contact Laura Moran at (724) 601-0517 or l.c.moran@iup.edu. Submission of the survey implies that you have read this information and that you consent to participate.

- ❍ I have read the information above and would LIKE to participate.
- ❍ I do NOT agree to the above conditions.

Q2: Do you have any classes with students with IEPs for a Specific Learning Disability (SLD) or a Learning Disability (LD)?

- ❍ Yes
- ❍ No

Q3: I teach _____.

- ❍ English for 9th graders
- ❍ Algebra I
- ❍ None of the above.

Q4: Considering the general education English class for 9th graders that has the MOST students with IEPs for SLD, please answer the following questions.

	Nothing	----------	Very Little	----------	Some Influence	----------	Quite A Bit	----------	A Great Deal
How much can you do to control disruptive behavior in the classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to motivate students who show low interest in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get students to believe they can do well in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to help your students value learning?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you craft good questions for your students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get children to follow classroom rules?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to calm a student who is disruptive or noisy	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you establish a classroom management system with each group of students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you use a variety of assessment strategies?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you provide an alternative explanation or example when students are confused?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you assist families in helping their children do well in school?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you implement alternative strategies in your classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q5: Considering the general education English class for 9th graders that has the LEAST number of students with IEPs, please answer the following questions.

	Nothing	----------	Very Little	----------	Some Influence	----------	Quite A Bit	----------	A Great Deal
How much can you do to control disruptive behavior in the classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to motivate students who show low interest in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get students to believe they can do well in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to help your students value learning?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you craft good questions for your students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get children to follow classroom rules?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to calm a student who is disruptive or noisy	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you establish a classroom management system with each group of students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you use a variety of assessment strategies?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you provide an alternative explanation or example when students are confused?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you assist families in helping their children do well in school?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you implement alternative strategies in your classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q6: Considering the general education Algebra I class that has the MOST students with IEPs for SLD, please answer the following questions.

	Nothing	----------	Very Little	----------	Some Influence	----------	Quite A Bit	----------	A Great Deal
How much can you do to control disruptive behavior in the classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to motivate students who show low interest in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get students to believe they can do well in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to help your students value learning?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you craft good questions for your students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get children to follow classroom rules?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to calm a student who is disruptive or noisy?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you establish a classroom management system with each group of students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you use a variety of assessment strategies?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you provide an alternative explanation or example when students are confused?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you assist families in helping their children do well in school?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you implement alternative strategies in your classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q7: Considering the general education Algebra I class that has the LEAST number of students with IEPs, please answer the following questions.

	Nothing	----------	Very Little	----------	Some Influence	----------	Quite A Bit	----------	A Great Deal
How much can you do to control disruptive behavior in the classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to motivate students who show low interest in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get students to believe they can do well in school work?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to help your students value learning?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you craft good questions for your students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to get children to follow classroom rules?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you do to calm a student who is disruptive or noisy?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you establish a classroom management system with each group of students?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you use a variety of assessment strategies?	❍	❍	❍	❍	❍	❍	❍	❍	❍

To what extent can you provide an alternative explanation or example when students are confused?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How much can you assist families in helping their children do well in school?	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you implement alternative strategies in your classroom?	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q8: Consider just the general education English class for 9th graders that has the MOST students with IEPs for SLD. How many students do you have with IEPs for SLD in that class? (Use zero if you previously indicated no students with IEPs for SLD or LD.)

- ❍ 0
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 or more

Q9: Consider just the general education English class for 9th graders that has the MOST students with IEPs for SLD. How many students do you have with IEPs for another disability other than SLD?

- ❍ 0
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 or more

Q10: Consider just the general education English class for 9th graders that has the MOST students with IEPs for SLD. How many TOTAL students do you have in the class (students with and without IEPs)?

- ❍ 10 or less
- ❍ 11
- ❍ 12
- ❍ 13
- ❍ 14
- ❍ 15
- ❍ 16
- ❍ 17
- ❍ 18
- ❍ 19
- ❍ 20
- ❍ 21
- ❍ 22
- ❍ 23
- ❍ 24
- ❍ 25
- ❍ 26
- ❍ 27
- ❍ 28
- ❍ 29
- ❍ 30
- ❍ 31
- ❍ 32
- ❍ 33
- ❍ 34
- ❍ 35
- ❍ 36
- ❍ 37
- ❍ 38
- ❍ 39
- ❍ 40
- ❍ 41 or more

Q11: How many periods of English for 9th graders do you teach?

- ❍ at least 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7 or more

Q12: The length of my class period for English for 9th graders is _____.

- ❍ 45 min. or less
- ❍ 46-60 min.
- ❍ 61-75 min.
- ❍ 76-90 min.
- ❍ 91 min. or more

Q13: Consider just the general education Algebra I class that has the MOST students with IEPs for SLD. How many students do you have with IEPs for SLD in that class? (Use zero if you previously indicated no students with IEPs for SLD.)

- ❍ 0
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 or more

Q14: Consider just the general education Algebra I class for 9th that has the MOST students with IEPs for SLD. How many students do you have with IEPs for another disability other than SLD?

- ❍ 0
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 or more

Q15: Consider just the general education Algebra I class that has the MOST students with IEPs for SLD. How many TOTAL students do you have in the class (students with and without IEPs)?

- ❍ 10 or less
- ❍ 11
- ❍ 12
- ❍ 13
- ❍ 14
- ❍ 15
- ❍ 16
- ❍ 17
- ❍ 18
- ❍ 19
- ❍ 20
- ❍ 21
- ❍ 22
- ❍ 23
- ❍ 24
- ❍ 25
- ❍ 26
- ❍ 27
- ❍ 28
- ❍ 29
- ❍ 30
- ❍ 31
- ❍ 32
- ❍ 33
- ❍ 34
- ❍ 35
- ❍ 36
- ❍ 37
- ❍ 38
- ❍ 39
- ❍ 40
- ❍ 41 or more

Q16: How many periods of Algebra I do you teach?

- ❍ at least 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7 or more

Q17: The length of my class period for Algebra I is _____.

- ❍ 45 min. or less
- ❍ 46-60 min.
- ❍ 61-75 min.
- ❍ 76-90 min.
- ❍ 91 min. or more

Q18: The Algebra I class that has the MOST students with IEPs for SLD comprises of students from the following grade levels. (Please check all that apply).

- ❑ 9th grade
- ❑ 10th grade
- ❑ 11th grade
- ❑ 12th grade

Q19: There's a trend to include students with IEPs for SLD in the general education classroom. Do you agree with this policy?

- ❍ Strongly Agree
- ❍ Agree
- ❍ Neither Agree nor Disagree
- ❍ Disagree
- ❍ Strongly Disagree

Q20: How important is it to you to have additional support in the classroom when supporting students with IEPs for SLD?

- ❍ Extremely Important
- ❍ Very Important
- ❍ Neither Important nor Unimportant
- ❍ Very Unimportant
- ❍ Not at all Important

Q21: I have received training with regards to the current special education laws within the _____

- ❍ last 2 years.
- ❍ last 4 years or more
- ❍ I have not received training on special education laws.

Q22: Other than information about special education laws, what is your experience with formalized training with regards to supporting students with disabilities? Please check any that apply.

- ❑ I had a least 1 undergraduate course regarding special education.
- ❑ I had a least one graduate course regarding special education.
- ❑ I have attended Act 48 in-service training regarding special education within the last 2 years.
- ❑ I do not have any formalized training regarding special education.

Q23: At the beginning of the 2013-14 school year, I met at least once with the special education teacher(s) concerning students with an IEP for SLD.

- ❍ Yes
- ❍ No

Q24: How often do you collaborate and meet with the following teachers?

	Not At All	Quarterly	Monthly	Weekly	Daily
Special Education Teacher	❍	❍	❍	❍	❍
Teachers within my department	❍	❍	❍	❍	❍
Teachers outside of my department or subject area	❍	❍	❍	❍	❍

Q25: I co-teach with a special education teacher.

❍ Yes
❍ No

Q26: I would describe my co-teaching experience with a special education teacher as _____.

❍ very effective
❍ effective
❍ neither effective nor ineffective
❍ ineffective
❍ very ineffective
❍ I do not co-teach with a special education teacher.

Q27: The administrators provide time for collaboration for general education teachers and special education teachers.

- ❍ Daily
- ❍ Weekly
- ❍ Monthly
- ❍ Quarterly
- ❍ Not at all

Q28: My principal articulates the positive value of including students with IEPs for SLD in the general education classroom.

- ❍ Very Often
- ❍ Often
- ❍ Sometimes
- ❍ Rarely
- ❍ Never

Q29: How often do you use or incorporate the following strategies or practices in your classroom?

	Never	Rarely	Sometimes	Often	Very Often
Track student progress with scoring scales or rubrics	❍	❍	❍	❍	❍
Set objectives	❍	❍	❍	❍	❍
Provide feedback	❍	❍	❍	❍	❍
Build vocabulary	❍	❍	❍	❍	❍
Identify similarities and differences	❍	❍	❍	❍	❍
Engage students with interactive games	❍	❍	❍	❍	❍
Students summarize	❍	❍	❍	❍	❍
Students take notes	❍	❍	❍	❍	❍
Use nonlinguistic presentations	❍	❍	❍	❍	❍

Incorporate cooperative learning groups	❍	❍	❍	❍	❍
Reinforce effort and provide recognition	❍	❍	❍	❍	❍
Use of graphic organizers and advanced organizers	❍	❍	❍	❍	❍

Q30: I am a _____.

❍ Female
❍ Male

Q31: My certification is in _____.

❍ English or English Language Arts
❍ Mathematics
❍ Other (please specify) _____

Q32: I also have certification in special education.

❍ Yes
❍ No

Q33: The highest level of education I have completed is _____.

❍ a 4-year college degree (BA, BS)
❍ some additional graduate classes
❍ a Master's degree
❍ a Doctoral degree

Q34: Are you a new teacher (teaching for less than 1 year)?

- ❍ Yes
- ❍ No

Q35: How many years of experience do you have teaching?

- ❍ Less than 1 year
- ❍ 1-5 years
- ❍ 6-10 years
- ❍ 11-15 years
- ❍ 16-20 years
- ❍ 21-25 years
- ❍ 26-30 years
- ❍ 31-35 years
- ❍ 36 years or more

Q36: Have you had any experience in the past teaching students with IEPs for SLD?

- ❍ This is my first year of experience teaching students with IEPs for SLD.
- ❍ During the last school year (2012-13)
- ❍ During the past 2 years
- ❍ During the past 3 years
- ❍ During the past 4 years
- ❍ During the past 5 years
- ❍ More than 5 years

Q37: I would characterize my school as _____.

- ❍ Suburban
- ❍ Urban
- ❍ Rural
- ❍ Don't Know

Q38: For students in your classroom, estimate the percentage of students who are economically disadvantaged.

- ❍ 1-25%
- ❍ 26-50%
- ❍ 51-75%
- ❍ 76-100%

Appendix B

Communication with Superintendents

Dear (Superintendent's Name),

The (Name of School District) has been selected to participate in a research study entitled: *Teacher Efficacy for Secondary General Education Teachers Supporting Students with Specific Learning Disabilities (SLD) in Inclusive Classrooms.* This study is being conducted toward fulfillment of a dissertation by Laura C. Moran and will be completed in conjunction with Indiana University of Pennsylvania under the direction of John A. Anderson, Ph.D. as the dissertation committee chair. In addition, the Pennsylvania Training and Technical Assistance Network (PaTTAN) supports this research project.

The study involves sending an electronic survey to high school English teachers who teach 9th grade English classes and Algebra I teachers. Teacher participation in this study is voluntary and the information collected will remain completely anonymous. A detailed description of the research project and consent form is attached. To give the district's consent to voluntarily participate in this research project, please sign the attached consent form, scan it, and email it back the email address below on or before (place date due).

Laura Moran

EMAIL ADDRESS

As part of participating in this study, a summary of the research findings will be sent to the school district upon completion of the dissertation.

Sincerely,
Laura C. Moran
Ph.D. Doctoral Candidate
Indiana University of PA

(Place Date)

High school English teachers who teach 9th grade English classes and Algebra I teachers are invited to participate in a research study entitled: *Teacher Efficacy for Secondary General Education Teachers Supporting Students with Specific Learning Disabilities (SLD) in Inclusive Classrooms.* This study is being conducted toward fulfillment of a dissertation by Laura C. Moran and will be completed in conjunction with Indiana University of Pennsylvania under the direction of John A. Anderson, Ph.D. as the dissertation committee chair.

While a considerable amount of research exists on teacher efficacy, few researchers have explored teacher efficacy at the secondary level in an inclusive classroom. Since teachers face many challenges in the classroom, several variables may impact a general education teacher's efficacy; particularly when working with students with SLD. This survey research study examines what elements, if any, affect the efficacy of high school general education teachers when supporting students with identified SLD in inclusive classrooms.

If the district agrees to participate, the researcher will request a district contact who will provide the email addresses of high school general education teachers who teach 9th grade English and Algebra I classes. The participants will be asked to respond to an electronic survey about their perceptions of teacher efficacy while teaching in an inclusive classroom. This will take approximately 15 minutes of their time. There are no costs for participating in this study. There are no benefits to the district or teachers other than to further research on this topic.

The information collected during this study will remain anonymous and no teacher, school, or district identifying information will be used in any reporting of results or in any discussion of data collected. Teacher responses will be considered only in combination with those from other participants. The project personnel listed as investigators are the only individuals who will have access to the survey questions and responses. The responses will be coded immediately upon receipt and remain anonymous so that no one can identify any participant relative to individual responses. All survey data will remain the property of the primary investigator and will be maintained in a secure location under her control at all times. The information obtained in this study may be published in scientific journals or presented at meetings or conferences, but the identity of the teachers and school districts will be anonymous.

Teacher participation in this study is voluntary. They may choose not to take part in this study, or if they decide to take part, they can change their minds later by withdrawing at any time by contacting any of the numbers provided below. They will not be penalized in any way for withdrawing or not answering the survey.

If you have questions about the study or study procedures, please contact the project personnel at the addresses and phone numbers shown below. If you have questions about the rights of the study participants or the treatment of teachers as a research participant, you can contact the following persons listed below or the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects at CONTACT NUMBER.

Laura C. Moran
Ph.D. Candidate
CONTACT ADDRESS and PHONE NUMBER

John A. Anderson, Ph.D.
Professor and ALS Doctoral Coordinator
Department of Sociology
CONTACT ADDRESS and PHONE NUMBER

To give the district's consent to voluntarily participate in this research project, please use district letterhead and sign and complete the attached consent form, scan it, and email it back to the email address below on or before (place date due).

Your time is appreciated and I look forward to receiving the signed consent form. This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects.

Sincerely,

Laura C. Moran
Ph.D. Doctoral Candidate
Indiana University of Pennsylvania

(SCHOOL LETTERHEAD)

Research Study: *Teacher Efficacy for Secondary General Education Teachers Supporting Students with Specific Learning Disabilities (SLD) in Inclusive Classrooms.*

Consent of the School District:

On behalf of the _____ School District, I have read, understood, and consent to supporting this research project as outlined in the Informed Consent Cover Letter.

_____ _____ _____

Superintendent (please print) Signature Date

Or District-Level Administrator

District Contact/s to Provide Teacher Email Addresses to the Researcher:

Name: _____

Role: _____

Email Address: _____

Appendix C

Communication with Teachers

Thank you for being part of this study. Your input is extremely valuable to me and the profession.

Do you think you have sufficient support in teaching students in an inclusive classroom? Would you like to help identify which aspects of teaching students with IEPs for a specific learning disability (SLD) or learning disability (LD) relate to teacher efficacy? Here is your chance to participate in a survey that asks teachers questions with regards to teacher efficacy in inclusive high school classrooms.

This study is being conducted toward fulfillment of a dissertation by Laura C. Moran and will be completed in conjunction with Indiana University of Pennsylvania under the direction of John A. Anderson, Ph.D. as the dissertation committee chair. In addition, your district superintendent supports this research project as does the Pennsylvania Training and Technical Assistance Network (PaTTAN).

Teacher participation in this study is voluntary and the information collected will remain anonymous. **Please help us by taking a moment to complete a survey that takes approximately 15 minutes. A consent question to participate will appear at the beginning of the survey.**

Follow this link to the Survey:
(link to survey)

Or copy and paste the URL below into your internet browser:
(link to survey)

If you have questions about this survey or experience technical difficulties while taking the survey, please contact Laura Moran at NUMBER or EMAIL.

Thank you in advance for your participation.

Best regards,
Laura C. Moran
Ph.D. Doctoral Candidate at IUP

(EMAIL REMINDER)

Your input is critical with regards to teacher efficacy in inclusive high school classrooms. Recently, you should have received an email with a survey link. Although your participation is solicited, it is strictly voluntary and all responses will remain anonymous.

If you have already completed the survey, thank you! If not, please take a few moments to complete a survey that takes approximately 15 minutes.

(survey link to here)

If by some chance you did not receive the informed consent email, please email me at EMAIL or call me at CONTACT NUMBER.

Thank you for your participation,

Laura C. Moran
Doctoral Candidate
Indiana University of Pennsylvania