

EXAMINING THE IMPACT OF SPECIAL EDUCATION TEACHER ATTRITION ON
STUDENT PERFORMANCE: A CAUSAL-COMPARATIVE STUDY

by

Kiandra Jones

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The purpose of this quantitative, causal-comparative study was to determine if there was a difference between the achievement of Georgia special education students on the Ninth Grade Literature and American Literature Georgia Milestones Test in school districts with high and low special education teacher (SET) attrition rates. This study provided quantifiable data that measured the impact of teacher burnout on student achievement. This research further supported the literature in this field by documenting the consequences of increasing teacher turnover rates. Participants in this study included Georgia Milestones student achievement data from approximately 180 Georgia school districts from 2019–2022. The state’s SET attrition data accounts for approximately 114,800 teachers. By providing quantifiable data reflecting the impact of teacher burnout on student achievement, the literature documenting the consequences of growing teacher attrition rates was supported. Two independent samples *t*-tests were conducted to determine if there was a difference between student achievement scores and school districts with high or low teacher attrition rates. The researcher determined that there was no significant difference between Georgia Literature Milestones student achievement scores and SET rates between school districts with high and low attrition rates. Results from this study may also assist leaders by providing a different perspective and strategic approach when seeking to improve Georgia Milestones student achievement data.

Keywords: attrition, prosocial classroom, student achievement, students with disabilities, burnout

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List of Abbreviations

Elementary and Secondary Education Act (ESEA)

Free appropriate public education (FAPE)

Free and reduced-price lunch (FRL)

Georgia Department of Education (GaDOE)

General education teacher (GET)

Individualized Education Program (IEP)

Individuals with Disabilities Education Act (IDEA)

No Child Left Behind Act (NCLB)

Social and emotional competence (SEC)

Special education teacher (SET)

Students with disabilities (SWD)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative, causal-comparative study was to determine if there is a difference between the achievement of Georgia special education students on the Ninth Grade Literature and American Literature Georgia Milestones Tests in school districts with high and low teacher attrition. Chapter 1 provides background on the issues of general education teacher (GET) and special education teacher (SET) attrition in the United States. The background includes an overview of the theoretical framework for this study: the prosocial classroom model. The problem statement examines the scope of recent literature on this topic. The purpose of this study is followed by the significance of the current study. Finally, the research questions are presented, and definitions relevant to this study are provided.

Background

Increasing teacher turnover threatens the quality of the education system (Billingsley & Bettini, 2019). Educators with great potential are being pushed out or simply leaving the field of education, feeling overwhelmed by professional expectations (Bettini et al., 2020). To put this in perspective, the overall teacher turnover rate in the United States was 16% in 2012–2013, with 8% of teachers leaving the profession and 8% moving to other schools, a rate far higher than the 3%–4% turnover rate in school systems in other high-performing countries (Thomas & Hammond, 2017). Teacher turnover was highest in 2021–2022 in urban districts, high-poverty districts, and districts serving predominantly students of color (about 12–14%). At the same time, principal turnover was highest (approximately 21–23%) in high-poverty and rural districts (Diliberti & Schwartz, 2023).

Given the reported turnover rates, it can be argued that teachers are dissatisfied. As a result, administrators are desperately hiring individuals who are not qualified or certified to fill vacancies (Thomas & Hammond, 2017). This teacher shortage becomes even more problematic when considering the needs of SWD and their federal protections, which require schools to accommodate their needs and provide a free and appropriate education (FAPE). Leadership at all levels must consider the direct, negative impact this epidemic is having on students' social-emotional and academic learning (Thomas & Hammond, 2017).

When teachers are overworked, morale is low, turnover rates increase, and ultimately, the classroom suffers. Approximately 90% of the annual demand for teachers nationwide occurs when teachers leave the profession, with two-thirds of teachers leaving for reasons other than retirement (Thomas & Hammond, 2017). Retention refers to keeping or retaining teachers, whereas teacher turnover refers to qualified teachers leaving the profession for reasons other than reaching retirement age. Teacher attrition is often referred to as teacher turnover, which refers to voluntary departures, such as retirements and resignations, and does not include involuntary departures, such as layoffs (Diliberti & Schwartz, 2023).

According to a recent study of teacher retention intentions, teachers with more resources, such as administrative support, collegial support, instructional materials, and experience, had greater intentions to stay in their schools. In contrast, teachers with greater job demands, such as time spent working, more student problems, and higher school poverty, had lower intentions to stay. In addition, administrative support is more important for early-career teachers than for late-career teachers (Bettini et al., 2020). As teachers continue to leave the profession, school leaders need to consider the severity of this trend and its impact on school culture and success.

Historical Overview

Since the passage of the Education for All Handicapped Children Act of 1975, parents, researchers, policymakers, and others concerned about the academic achievement of students with disabilities (SWD) have debated what defines “access” to education (Gilmour et al., 2018). In the process of passing education legislation at the national level, the United States has developed strategic legislation aimed at creating public policy to prevent potential discrimination against SWD. The reauthorization of the Elementary and Secondary Education Act (ESEA) as the No Child Left Behind Act of 2001 (NCLB) expanded standards-based reform, using ambitious standards and accountability as levers to improve outcomes for all students, especially those from traditionally disadvantaged backgrounds (Gilmour et al., 2018). Subgroups were categorized by race, economic disadvantage, and disability status. Mandates were issued for schools to receive continued federal funding; 95% of students in each subgroup, including SWD, were required to both participate in state assessments and make progress in closing the achievement gap between them and students who were not in those subgroups (Gilmour et al., 2018). As the government worked to ensure that SWD were served in the most inclusive and appropriate instructional settings, the job description for SETs increased. As a result, professionals began to leave the field at an alarming rate.

The percentage of teachers leaving the profession has increased significantly over the past 20 years. Rates have risen from 5.1% of public school teachers leaving the profession in 1992 to 8.4% in 2005 (Thomas & Hammond, 2017). The 3% increase in attrition rates means that approximately 90,000 additional teachers need to be hired each year across the United States. According to Thomas & Hammond (2017), in 2013, the education profession had a national attrition rate of about 8% per year.

Research has also shown that the number of teachers leaving the profession each year accounts for nearly 90% of the annual teacher shortage in special education. In 2016, 49 states reported a shortage of SETs, and enrollment in teacher preparation programs was lower than at any point since the National Center for Education Statistics (NCES, 2016) began collecting these data (Billingsley & Bettini, 2019). Boe et al. (2008) reported that while special educators and general educators left the teaching profession at similar rates, special educators transferred to other schools at a higher rate than general educators (10.2% and 7.4%, respectively; Billingsley & Bettini, 2019). In 2021–2022, teacher turnover was highest nationally in urban districts, with a rate of 14%, the majority of which serve predominantly students of color, and in high-poverty districts, where teacher attrition was 12% (Diliberti & Schwartz, 2023).

Research has attributed this phenomenon to the instructional demands of special educators, the needs of students, and the management of goals and services outlined in their students' individualized education plans (Billingsley & Bettini, 2019). The job description of a SET requires coordinating services for their students, collaborating with general educators and related service providers, supervising paraprofessionals, and working with students' parents. Outside of the classroom, special educators are also responsible for managing IEP development and meetings and ensuring that all aspects of the students' programs are in compliance with the legal requirements of IDEA (Billingsley & Bettini, 2019). Currently, there is no national standard job description for SETS, so responsibilities and compensation may vary. Research has suggested that turnover of SETs may be due to inadequate preparation, too many SETs leaving each year, difficult working conditions related to lack of administrative support, lack of collaboration, and excessive paperwork (Thomas & Hammond, 2017). Qualitative studies

examining the relationship between role issues and attrition found that in a large-scale study in Florida, stress was one of the strongest predictors of turnover among SETs (Billingsley, 2004).

As SETs endure the social-emotional challenges of their role, they have an impressionable audience watching and absorbing their feelings—students, especially SWD. Shen et al. (2015) discussed Maslach and Leiter's (1999) working model of teacher burnout. This model suggests that teacher burnout contributes to both teacher and student behaviors and experiences. As teacher burnout increases, both classroom preparation and engagement in classroom activities decrease, while student criticism increases (Shen et al., 2015). In response, students are likely to change their perceptions of the teacher, their feelings toward the teacher, and their behavior in the classroom. As a result, students' sense of efficacy in school often decreases. In addition, teacher burnout reduces students' intrinsic motivation, which can affect learning and engagement.

Society-at-Large

In 2017, the U.S. Department of Education reported that 46 states were experiencing a drastic shortage of SETs (Hester et al., 2020). Attrition rates were 50% higher in Title I schools, which serve lower-income students. Turnover rates were also 70% higher for teachers in schools serving the highest concentrations of students of color (Thomas & Hammond, 2017). Principal turnover was also significant in high-poverty districts (23%), three-quarters of which were rural districts. Districts with the highest principal turnover in 2021–2022 (i.e., high-poverty and rural districts) also experienced the greatest increase in principal turnover over time, widening the gap between rural and high-poverty districts and their counterparts (Diliberti & Schwartz, 2023).

The greatest impact of teacher turnover occurs in the classroom. Schools with high turnover rates also suffer major losses in their overall performance ratings as long-term

improvement plans become more difficult to implement. In addition to the negative impact on education, high teacher turnover also has a negative financial impact on districts. Research has estimated that each teacher who leaves a district can cost approximately \$20,000 (Thomas & Hammond, 2017). According to Billingsley (2004), approximately 50% of SETs leave the profession within the first 5 years, costing the U.S. Department of Education approximately \$90 million annually (Hester et al., 2020). This is lost funding that could be used for technology in the classroom or various school improvement initiatives.

Teacher turnover is a growing concern in the state of Georgia. In a recent survey conducted by the Professional Association of Georgia Educators (PAGE) in 2022, 50% of the 4,600 participating teachers indicated that they would not recommend a career in education. In addition, approximately 31% of all educators surveyed indicated that it was unlikely or very unlikely that they would remain in education for another 5 years. In response to these findings, Georgia State Superintendent Richard Woods has formed a task force of educators from different regions of the state to address the factors contributing to teacher burnout in hopes of reducing the state's growing attrition rate (Georgia Department of Education [GaDOE], 2022).

After reviewing data and research, this task force identified five areas of focus: assessment, preserving and protecting time, pressure/unrealistic expectations, teacher voice and professional growth, and mental health and wellness (GaDOE, 2022). SET attrition is an area that needs active intervention and support. According to Georgia teacher shortage data collected in 2018 and 2019, there were 3,400 unfilled SET positions (Low, 2023). According to new teacher data, Georgia hired 1,235 new SETs between 2018 and 2020 but lost about the same number each year (Low, 2023). In terms of SET retention efforts, GaDOE was the recipient of a 2020 grant from the U.S. Department of Education's Office of Special Education Programs. This

grant awards the state up to \$500,000 per year for 5 years to promote the retention of SETs and early intervention providers (Low, 2023).

There are concerns about the impact on the quality of public education, as the trend of teacher attrition is projected to exceed the estimated supply of teachers. García and Weiss (2019) reported that attrition rates increased from approximately 20,000 in 2012–2013 to 64,000 teachers in 2015–2016 and to over 110,000 in 2017–2018. The teacher shortage was projected to more than quadruple in just 5 years, and the gap remained at the 2017–2018 level thereafter. Teacher turnover increased by 4 percentage points above pre-pandemic levels, reaching 10% nationwide by the end of the 2021–2022 school year. Principal turnover also increased, reaching 16% nationwide by the 2022–2023 school year (Diliberti & Schwartz, 2023).

Theoretical Background

This study was framed by the theoretical model of the prosocial classroom. This model investigates the effects of teacher burnout on student academic achievement and behavior performance, positing that teachers' social and emotional competencies and well-being support their ability to create and sustain learning environments associated with desired student academic and behavioral outcomes (Jennings & Min, 2023). When teachers lack the resources to effectively manage social and emotional challenges within the context of their school and classroom, children exhibit lower levels of task-related behavior and achievement (Marzano et al., 2003). Jennings and Greenberg (2009) introduced the mediating model of the prosocial classroom, which establishes social and emotional competence (SEC) and teacher well-being as an organizational framework that can be examined in relation to student and classroom outcomes. This model was developed to demonstrate the impact of teacher SEC on classroom management, relationships, and climate.

The prosocial classroom model views teacher influence in several ways (Jennings & Greenberg, 2009):

- Teacher SEC is an important contributor to the development of supportive teacher-student relationships.
- Teachers with higher SEC are likely to demonstrate more effective classroom management, which allows them to use their emotional expressions to promote enthusiasm and enjoyment of learning, as well as to guide and manage student behavior.
- Teachers with higher SEC will implement the social and emotional curriculum more effectively because they are ideal role models of the desired social and emotional behavior.

Jennings and Greenberg (2009) suggested that there is a transactional relationship between the three aspects of this model and the outcome of a healthy classroom climate that contributes to students' social, emotional, and academic outcomes.

This theory informed this research by providing direct factors that contribute to teacher turnover. It is imperative that school leaders and policymakers take a close look at motivational and hygiene factors as they relate to education and teacher dissatisfaction. Billingsley (2017) reported that 25% of those who left an urban district cited “inadequate support from central administration” as a source of dissatisfaction.

Psychologists of social interdependence theory assume that people are primarily concerned with developing an ordered and meaningful view of their world by perceiving events as an integrated whole rather than as an addition of parts or properties (Johnson & Johnson, 2005). This idea states that a person’s ability to achieve their goals can be positively or

negatively affected by their social interactions, relationships, and actions of others. When considering the impact and consequences that teacher attrition has on the success of SWD, one must consider the nature of the relationships and connections that develop between students and teachers. Johnson and Johnson (2005) claimed that interdependence exists only when more than one person or entity is involved, and the persons or entities influence each other (i.e., a change in one person's state causes a change in the state of another).

There are two types of social interdependence: positive, when individuals' actions promote the achievement of common goals, and negative, when individuals' actions hinder the achievement of others' goals (Johnson & Johnson, 2005). Shimizu et al. (2021) added that social interdependence exists when individuals' outcomes are influenced by their own and others' actions, and they divide the process of structuring positive and negative interdependence into three categories: outcome, means, and boundary. Interdependence includes resources, roles, and task interdependence. Resources are used by group members, some of which are used as shared property. In this study, resources are considered instructional resources used by teachers and students. Boundary interdependence is based on abrupt discontinuities between individuals and thus includes identity and environment (Shimizu et al., 2021). As teachers and students establish roles and norms, the change of a teacher can lead to abrupt changes in routine for students. Positive interdependence is essential for successful collaborative learning because positive interdependent collaboration leads to more frequent use of higher-level arguments, more interpersonal relationships, and greater social support.

The literature suggests that SETs leave the field with negative feelings of being overwhelmed and unprepared. Social interdependence theory states that teachers' actions and attitudes affect students' attitudes and approaches to education and their ability to achieve their

goals.

Problem Statement

Each year, 17%–29% of SET teaching positions become vacant, largely due to attrition (Mason-Williams et al., 2019). Teacher effectiveness decreases when they change roles in a school, and underserved students are more likely to be assigned to teachers who have changed positions (Billingsley & Bettini, 2019). SET turnover is particularly problematic because it exacerbates shortages, forcing many districts to hire unqualified personnel and requiring that limited resources be used for recruitment and induction rather than longer-term district initiatives (Billingsley & Bettini, 2019). As the supply of certified SETs decreases, national education legislation has increased the demand for evidence of academic progress for SWD.

The reauthorization of IDEA in 2004 reinforced the importance of assessing and reporting SWD outcomes by mandating that SWD be included in state assessments and requiring states to report the performance of these students in comparison to nondisabled peers (Gilmour et al., 2019). While school leaders struggle to find and retain qualified teachers, SWD suffer, especially in high-poverty schools, making it less likely that SWD living in poverty will be taught by highly qualified SETs (Billingsley & Bettini, 2019). Many researchers have looked at the factors that contribute to SET attrition.

In their study on predicting SETs' intent to stay, Bettini et al. (2020) found that teacher attrition was academically and financially costly. Studies have consistently found that attrition negatively predicts student achievement and that the money invested in preparing, hiring, and inducting teachers is lost when they leave (Bettini et al., 2020). Nationally, the cost of teacher turnover is nearly \$2.2 billion annually (Mason-Williams et al., 2019). However, these costs fall disproportionately on high-poverty districts, which spend more than twice as much per school

per year to replace teachers in low-poverty districts (Bettini et al., 2020). Many researchers have focused on the factors that contribute to SET attrition. However, Billingsley and Bettini (2019) pointed out that no studies have examined the consequences of SET attrition and its impact on student achievement.

According to research by Billingsley and Bettini (2019), the overall attrition rate for SETs was slightly higher than for teachers overall: 17.1% of SETs left their school in 2012–2013, including 10.5% who transferred to another school and 6.6% who left the teaching profession. The same school data showed that attrition for SETs was second only to English language development teachers and was 46% higher than for elementary school teachers. Given the increasing attrition rate of SET teachers, Billingsley and Bettini (2019) called for further studies to investigate the direct impact of SET attrition on SWD. The problem is that the literature has not yet fully explored how attrition affects the achievement of SWD.

Purpose Statement

The purpose of this quantitative, causal-comparative study was to determine if there was a difference between the achievement of Georgia special education students on the American Literature Milestones Test in Grades 9 and 11 in school districts with high and low teacher attrition. The independent variable was the teacher attrition rate reported for each district for the 2019–2020, 2020–2021, and 2021–2022 school years. In this study, teacher attrition is defined as a component of teacher turnover in which SETs leave the profession and/or change fields (Kelchtermans, 2017). State teacher turnover rates were provided by the GaDOE. A school with an attrition rate of 5% is considered stagnant; an attrition rate of 6% to 8% is considered moderate; and a rate above 10% is considered detrimental to public school effectiveness (Yu et al., 2023).

The dependent variable was the achievement data of special education students from the Ninth Grade Literature Georgia Milestones Test and the 11th Grade American Literature Georgia Milestones Test. Student achievement is defined as reaching and/or maintaining the proficient level on the Georgia Milestones Assessment (GaDOE, 2023). Georgia public schools require students to take the Georgia Milestones Assessment in Literature in the ninth and 11th grades. Student assessment data were collected by the Georgia Governor's Office of Student Achievement.

Significance of the Study

Studies have consistently found that teacher turnover has a negative impact on student achievement and that the money invested in preparing, hiring, and inducting teachers is lost when they leave (Hester et al., 2020). Total attrition rates are highest in the South (16.7%) and lowest in the Northeast (10.3%), where states tend to offer higher salaries, support smaller class sizes, and invest more in education (Thomas & Hammond, 2017). As mentioned earlier, the economic impact of teacher turnover disproportionately affects high-poverty districts, which spend more than twice as much per school per year to replace teachers in low-poverty districts (Bettini et al., 2020). The subjects where teacher turnover is highest are math, science, special education, English language development, and foreign languages (Thomas & Hammond, 2017). Further research has found that teacher attrition decreases student learning and engagement, which negatively impacts student achievement and reduces intrinsic motivation (Hester et al., 2020).

Oliveira et al. (2021) discussed the social and emotional impact of teacher burnout, suggesting that it is a problem with worldwide prevalence and negative personal, organizational, and social effects, such as mental health concerns, decreased job performance, and turnover.

Socially and emotionally competent teachers set the tone in the classroom by developing supportive and encouraging relationships with their students. Therefore, teachers who suffer from burnout due to poor environmental factors have great potential to impact their students' attitudes and performance.

Classrooms with warm teacher-child relationships promote deep learning and positive social and emotional development in students, but when teachers poorly manage the social and emotional demands of teaching, both academic achievement and student behavior suffer (Schonert-Reichl, 2017). Mentoring improves retention and working conditions for new general educators, but there is less evidence of this relationship for special educators (Billingsley & Bettini, 2019). Most special educators have mentors, but the mentors may not be available at the same school or teach in the same area, making it difficult for them to have a significant impact on their mentees (Billingsley & Bettini, 2019).

As SETs work to serve SWD, they must also be mindful of the atmosphere they create, as well as their energy and attitude. As SET attrition rates increase nationally, it is critical that the impact of SETs on student achievement be thoroughly evaluated to gain a holistic perspective on this phenomenon. Empirical studies show that teacher burnout has personal and interpersonal effects. However, there is little published quantitative evidence of an adverse relationship between teacher burnout and desirable student characteristics (e.g., autonomous motivation) or teacher behaviors (e.g., motivational support for students; Shen et al., 2015).

Providing quantifiable data reflecting the impact of teacher burnout on student achievement will further support the literature documenting the consequences of increasing teacher turnover rates. This research can inform school leaders and legislators of the need to ensure that teachers receive adequate SEC support to effectively manage their classrooms and

create a safe, positive learning environment for SWD. The results of this study may also help school leaders by providing a different perspective and strategic approach as they seek to improve Georgia Milestones' student achievement data.

Research Questions

RQ1: Is there a difference in special education students' achievement scores on the Ninth Grade Literature Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?

RQ2: Is there a difference in special education students' achievement scores on the American Literature Georgia Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?

Definitions

1. *Administrator* - Administrators are primarily principals, assistant principals, or head teachers responsible for daily operations, managing school personnel, and serving as the main liaison between the individual school and the district (Hester et al., 2020).
2. *Retention* - Retention refers to retaining or keeping teachers (Kelchtermans, 2017).
3. *Special education teachers* (SETs) - In the United States, SETs are responsible for teaching SWD and providing necessary services (Hester et al., 2020).
4. *Teacher attrition* - Teacher attrition refers to qualified teachers leaving the profession for reasons other than reaching retirement age, often referred to as "teacher turnover" (Kelchtermans, 2017).

CHAPTER TWO: LITERATURE REVIEW

Overview

A systematic literature review was conducted to examine the impact of special education teacher (SET) turnover on student achievement and to suggest strategies principals can use to retain SETs. This chapter reviews the current literature on the topic of the study. The first section presents the theories relevant to teacher attrition, adult learning, the prosocial classroom theoretical model, and social interdependence theory, followed by a summary of the current literature on teacher attrition in general education and special education, preservice teacher training, and how teachers' actions affect student achievement. Finally, the literature on strategies that school leaders should implement in an effort to retain SETs is reviewed. The end of the chapter identifies the gap in the literature that justifies the need for the present study.

Theoretical Framework

Teacher turnover rates are 50% higher in Title I schools serving lower-income students. Attrition rates are also 70% higher for teachers in schools with the largest percentage of students of color (Thomas & Hammond, 2017). Many researchers in the field have focused on the factors that contribute to SET attrition. However, there are no studies that have looked at the consequences of SET attrition and the impact on the students, the students' families, and the teachers with whom they worked, as well as the impact of attrition on the achievement of SWD (Billingsley & Bettini, 2019). Several theories have been used to explore the causes, solutions, and effects of SET attrition. The theories described in this literature review are included to provide an explanation for the impact of teacher attrition on student achievement.

Jennings and Greenberg (2009) emphasized the importance of teachers' competence in SEL skills and well-being to their ability to develop healthy teacher-student relationships,

effectively manage classrooms, and implement interventions for students' social and emotional learning (Rodriguez et al., 2020). Teachers' competency in the SEL (SEC) domains has been shown to help them build supportive relationships with students and create a healthy classroom climate that ultimately promotes students' social and emotional learning and desired academic outcomes (Rodriguez et al., 2020). The prosocial classroom model suggests that teachers' SEC plays a critical role in creating and maintaining a classroom where students feel safe, connected, and engaged in learning (Jennings et al., 2021). Furthermore, the model suggests that these competencies support teachers' ability to manage the demands of teaching and prevent burnout.

The model emphasizes the impact that teachers' emotion regulation skills, professional health, and personal well-being have on students' well-being through both modeling and social-interactive processes (Braun et al., 2020). Thus, the model assumes that teachers who possess social and emotional skills and exhibit high levels of professional health and well-being enable their students to emulate these qualities and also experience them directly in their interactions with the teacher (Braun et al., 2020). Teachers' SEC and well-being contribute to the development and maintenance of supportive teacher-student relationships, effective classroom management, and successful implementation of SEL programs that promote a supportive classroom climate and desired student academic, social, and behavioral outcomes (Jennings et al., 2021).

Jennings and Greenberg (2009) argued that SEC is contextual and that the classroom is a particularly complex and challenging social and emotional context (Jennings et al., 2021). The environment requires teachers to effectively monitor and regulate students' emotional states and social interactions while delivering instruction, often under strict time constraints. In addition, they must also monitor their own emotional states and expressions. Often, teachers must spend

most of the day in the classroom with their students, have few breaks, and have no privacy to regulate their emotions (Jennings et al., 2021). Therefore, in order to cultivate and maintain an optimal learning environment, teachers must develop SEC that matches their unique role in the classroom. While the specific factors that constitute SEC are still being further elaborated, a growing body of research based on the prosocial classroom model has shown that mindfulness- and compassion-based interventions are effective in promoting teachers' SEC.

Research has shown that leadership styles can have a profound impact on the social mindset of a group (Basran et al., 2019). Teachers are seen as leaders in their schools and classrooms. Leaders who primarily use prosocial strategies create a safe, low-stress environment and build a sense of connectedness that transfers to subordinates. Prosocial leadership requires specific SECs rooted in the caring motivation system, which includes awareness of others' distress, intentional and empathetic empathy, self-regulation, and a wise focus on the prevention and alleviation of distress (Jennings et al., 2021).

Teachers are vulnerable to the negative effects of stress, and its association with increasing burnout and decreasing teacher effectiveness is well researched (Jennings et al., 2021). The consequences of teacher stress include high levels of burnout, decreased teacher self-efficacy, and increased teacher turnover. However, prosocial theorists believe that teachers who understand their role as prosocial leaders and have the SEC to manage the emotional demands, as well as the skills to engage in a prosocial leadership style, are well positioned to transform their teacher-student interactions to create a prosocial classroom. Among the domains of teacher well-being—positive emotions, engagement, relationships, and achievement—positive emotions appear to be most important in predicting teacher job satisfaction. Similarly, teachers who feel

joy while teaching are more likely to report that they understand their students' academic difficulties and devote more time to teaching (Poulou et al., 2021).

Related Literature

There are several factors to consider when evaluating why SETs and GETs leave the profession or change roles. The literature on the following factors discussed in this section includes administrative support, teacher confidence and emotional intelligence, school culture, and teacher preparation initiatives. There are significant consequences when teachers leave education or change jobs. These consequences affect all school stakeholders, student behavior and achievement, and families in the community. In addition to exploring the literature on teacher attrition, this section examines the impact of teacher attrition on students, including the impact of SET attrition on SWD.

Teacher Retention and Attrition

Teacher attrition refers to teachers who leave the profession for reasons other than retirement. This phenomenon is also known as teacher turnover. Approximately 90% of the nation's annual need for teachers occurs when teachers leave the profession, with two-thirds of teachers leaving for reasons other than retirement (Thomas & Hammond, 2017). Retention refers to the retention or staying of teachers. According to a recent study on teachers' intentions to stay, teachers with stronger resources, such as administrative support, collegial support, instructional materials, and experience, had higher intentions to stay at their schools; teachers with greater job demands, such as more work hours, more student problems, and higher school poverty, had lower intentions to stay at their schools. Administrative support was also more important for early-career teachers than for late-career teachers (Bettini et al., 2020). As more teachers leave the profession, school leaders need to consider the severity of this trend and its impact on school

culture and invest in evidence-based strategies that have been shown to retain effective teachers.

The Impact of Teacher Attrition

Research shows that teacher attrition has an impact that goes beyond the classroom. Kelchtermans (2017) examined several effects of teacher attrition. The sociological or institutional impact of teacher attrition refers to governments' efforts to create a large and qualified teaching force. Thomas and Hammond (2017) estimated that the cost of each teacher who leaves an urban school district is more than \$20,000 to meet this need. Teacher attrition represents a loss of investment that requires additional administrative overhead, such as managing paperwork and introducing and socializing teachers to a new work environment (Kelchtermans, 2017).

Hiring and training new teachers is also financially costly; Milanowski and Odden (2007) found that the attrition of a first-year teacher costs an urban district between \$9,000 and \$23,000 (Bettini et al., 2017). Teachers of math, science, special education, English language development, and foreign languages are more likely to leave their school or profession than teachers of other subject areas (Thomas & Hammond, 2017). Many argue that teacher attrition affects the student learning environment by reducing continuity of instruction and negatively impacting learning and development (Kelchtermans, 2017). As education leaders strive to reduce the rapidly increasing rate of teacher attrition, they must first consider the factors that lead teachers to consider changing roles.

Factors Contributing to Teacher Turnover

According to a 2012 Schools and Staffing Survey and the 2013 Follow-Up Survey of Teachers, the most frequently cited reasons for teacher dissatisfaction were dissatisfaction with testing and accountability pressures, lack of support from administrators, dissatisfaction with

teaching careers, including lack of advancement opportunities, and dissatisfaction with working conditions. These types of dissatisfaction were cited by 55% of those who left the profession and 66% of those who left their school to go to another school (Thomas & Hammond, 2017).

Billingsley (2007) reported that 25% of those who left an urban district indicated that “inadequate support from central administration” was a source of dissatisfaction; 8% indicated that this was the most important source of dissatisfaction, more than the proportion of those who indicated that they left due to dissatisfaction with school leaders (Billingsley & Bettini, 2019).

School leaders should be aware of the extent of their direct influence if teachers intend to stay. The results of Bettini et al.'s (2020) qualitative study that focused on teachers' intent to stay indicate that administrative support fully moderated the relationship between school FRL and intent to stay, such that there was no relationship between FRL and intent to stay when teachers reported greater administrative support, suggesting that administrative support may be an important lever for increasing intent to stay in high-poverty schools. While school administrators are faced with the task of managing their workload and the emotions of newly hired teachers, they must always be cognizant of their impact on teacher retention. The literature suggests that efforts to reduce teacher attrition begin at the hiring stage.

Aguilar (2018) discussed the importance of leaders considering emotional intelligence and resilience when considering candidates, as well as when training new teachers. The Mind the Gap Framework is Aguilar's guide for training teacher-leaders on strategies for hiring and identifying teachers' levels of emotional intelligence in order to retain effective teachers. This framework focuses on the following six gaps between an individual's desired ability and their current ability to accomplish a task or goal.

- Cultural competence: the ability to understand, appreciate, and interact with people from cultures or belief systems different from one's own; the ability to navigate cross-cultural differences.
- Emotional intelligence: the ability to be aware of, manage, and express one's own emotions; the ability to recognize, empathize with, and manage other people's emotions.
- Capacity: the time and resources to do something. This can also refer to emotional and physical capacity.
- Will: desire, intrinsic motivation, passion, or commitment. This usually has an emotional tone.
- Skill: the ability to execute the technical elements of a task. This can refer to the application of knowledge.
- Knowledge: the theoretical or practical understanding of a subject. This can also refer to information.

In order to retain teachers, it is wise for school leaders to offer professional development that focuses on these potential gaps, providing strategies for closing the gaps while cultivating space for emotionally intelligent and resilient teachers.

As school leaders work to find teachers to fill vacancies, they are often forced to place uncertified, underqualified teachers in the classroom. Teacher preparation is a key variable in teacher attrition. Thomas and Hammond (2017) found that teachers who enter the profession through alternative certification pathways have, on average, less coursework and student teaching than those who are prepared through traditional programs and are 25% more likely to leave their schools and the profession, even after controlling for student, school, and teaching conditions. Research suggests that a growing number of teachers leave the profession during

their first 3 years on the job (Carr et al., 2017). Local education agencies must consider programs that prepare nontraditional teachers while continuing to educate current teachers.

In an effort to retain effective educators, teacher residencies have gained popularity. These are contemporary adaptations of the Master of Arts in Teaching programs that were developed in the 1960s and 1970s, an era that also faced historic teacher shortages (Guha et al., 2017). Studies of teacher residency programs have shown high retention rates among residents. Statistics have shown that even after several years in education, typically 80–90% of residents remain in the same district after 3 years and 70%–80% after 5 years (Guha et al., 2018). Districts also invest in mentoring, coaching, and self-monitoring programs for new hires. However, it is critical that local schools complement these programs by considering and addressing the individual needs of their teachers (Carr et al., 2017).

Another important aspect to consider when recruiting new teachers is the route to certification, as this can also have an impact on attrition. Mitani et al. (2022) empirically examined the relationship between types of teacher preparation programs (TPPs) and teacher attrition, as well as initial teacher turnover, using detailed longitudinal administrative data on TPP types from 2004 to 2011 in Texas. This study also examined the differences in attrition and turnover rates among alternative certification programs (ACPs) and highlighted the types of ACPs that exhibit attrition patterns.

After analyzing teacher employment and certification data provided by state and district education agencies, the findings were consistent with previous studies regarding attrition rates for ACPs as a group. Differences in attrition between different types of nontraditional certification programs (TCPs) are important for stakeholder decision-making. There were significant differences in attrition and turnover rates between the reference group and non-TCP

teachers. Non-TCP teachers were generally less likely to leave the profession and district than the reference group, at least in the first 4 years. Mitani et al. (2022) suggested that their findings could be useful for developing strategic hiring and recruitment activities, induction, and mentoring programs at the district and school levels and that state policymakers use the information to review current rules and regulations for ACPs.

Special Education Teacher Attrition

The professional demands placed on GETs can be overwhelming and emotionally challenging. SETs face these obstacles, but there are also a number of other unique demands that contribute to SETs moving into general education or leaving teaching altogether. Teacher attrition rates are 90% higher in schools that teach students of color than in the lowest quartile for math and science teachers, 80% higher for SETs, and 150% higher for alternatively certified teachers (Thomas & Hammond, 2017). Factors impacting SET retention include paperwork, case load, and administrative support.

SETs are tasked with the responsibilities of case managers, collaborative or co-teaching, and various independent teacher roles. Fatigue increases when they have to navigate the same school day as their general education colleagues. The case manager role requires rigorous administrative skills, including compliance with federal regulations for all SWD in their assigned caseload. This requires scheduling and facilitating Individualized Education Program (IEP) meetings, collecting data, monitoring student goals, and maintaining a relationship with the students on their list and their families. Billingsley (2007) surveyed 99 special educators who left an urban district within 3 years and found that 24% indicated that paperwork was a major reason for their decision. In fact, paperwork was the third most common reason for leaving the district. In the same study, Billingsley (2007) found that 33% of SETs who left a large urban district cited

heavy workload as a major reason for leaving, more than any other factor (Billingsley & Bettini, 2019). Paperwork in Special Education (2002) also found that, according to a recent report, the typical SET spent 5 hours per week filling out forms and completing administrative tasks, the same amount of time as preparing lessons (Billingsley, 2004).

Gilmour et al. (2022) examined how roles, responsibilities, preparation, and support relate to SETs' attrition to determine which aspects influence their career decisions. More specifically, the researchers focused on how SETs' roles have changed over time and the extent to which these variables are related to attrition. Data were drawn from the Schools and Staffing Survey (SASS) and the National Teacher Principal Survey (NTPS) and collected by the NCES. Participants included more than 30,000 public school teachers in each wave and consisted of state and nationally representative, independent samples of schools and teachers in the United States.

Variables that accounted for SETs' roles and responsibilities included service delivery, school type, hours worked, classes taught, subject taught, student behavior, and other teacher responsibilities. The results showed that attrition decreased between 2000 and 2012, decreasing by 4.34 for SETs who changed schools and 0.29% for SETs who left the field. Gilmour et al. (2022) found that some variables describing SETs' roles and responsibilities were associated with attrition, but the associations were not significant when preparation and support and teacher and school characteristics were taken into account. Overall, more SETs remained in their schools over time; those who reported greater collaboration with teachers were less likely to change schools, and those who reported greater administrative support were less likely to leave teaching.

While much of the attrition research focuses on SETs' reasons for leaving their current roles, Scott et al. (2021) examined the personal and environmental factors surrounding SETs'

persistence in their careers, which could help to promote novel and effective SET retention strategies. This study extended previous research on SET motivation and retention by examining SET persistence and incorporating some new predictors that have not been considered in previous research (e.g., satisfaction with intrinsic pay motivation). The researchers used Bandura's (1997) SCT concept, which assumes that much of human behavior, motivation, and, ultimately, decision-making are due to the expected outcomes of a particular course of action. The researchers' focus on the question of why some SETs persist, and others do not lies at the heart of this dynamic interplay between factors and the individuals' self-reflections on these factors and their own self-efficacy.

A random sample of participants who responded to the Special Education Teacher Persistence in Teaching Survey (SETPTS) was used, specifically, individuals who identified themselves as SETs from a data set of SETs in a mid-Atlantic region of the United States compiled by the first author (Scott et al., 2021). The results showed that the SETs' decision to remain in the profession was unrelated to personal and environmental factors and their interactions. These findings provide further evidence that teacher persistence is related to several factors identified by previous researchers, such as a positive work and learning climate and strong administrative support. In addition, compensation was found to be related to persistence. Scott et al. (2021) found that the persistence of SETs does not depend on a single predictor but rather on the interaction between environmental and personal (intrinsic) factors.

While SETs struggle to meet their professional expectations, the literature suggests that many of them are not supported by school leadership. There is a lack of administrative support, as SETs feel that they are not given extra time to complete paperwork or plan lessons. Bettini et al. (2020) found that early-career teachers were more likely to leave school because they tended

to work in an environment that they perceived as less supportive or challenging. The school culture promoted by the school administration also has an impact on SET attrition. Educators try to ensure that SWD are placed in the most inclusive academic environment possible. The literature indicates that there are school cultures led by the administration in which SETs and SWD are treated as inferior to their general education peers. This culture makes it difficult for SETs to collaborate in general education settings. According to Billingsley (2004), SETs who have difficulty implementing an inclusive program due to inadequate support systems or resistance from GETs may also find their work unfulfilling and look elsewhere.

The Impact of Retention and Attrition

School leaders should be aware of the extent to which they have a direct impact on teachers' intentions to stay. The results of Bettini et al.'s (2020) qualitative study focusing on teachers' intention to stay indicated that administrative support fully moderated the relationship between free and reduced school lunch (FRL) and intention to stay. There was no association between FRL and intent when teachers reported greater administrative support, suggesting that administrative support may be a key leverage point for increasing retention in high-poverty schools. While school administrators are faced with the task of managing their workloads and the emotions of new hires, they must always be cognizant of their influence on teacher retention.

The Impact of Prosocial Behaviors on Student-Teacher Relationships

Several studies look at the various ways in which an educator's awareness and use of prosocial skills affect students. Oberle et al. (2020) examined the relationship between elementary school teacher burnout and students' perceptions of teachers' SEC. Approximately 670 students were surveyed regarding their perceptions of their teachers' SEC, and about 35 teachers self-reported their current level of burnout at work. Multilevel analysis revealed that

higher levels of reported teacher burnout were related to lower levels of student-rated teacher SEC, underscoring the relationship between teacher burnout and SEC and the fact that students perceive their teachers' stress.

In addition to teachers' dispositions, students' environments outside of school also have an impact on prosocial behavior and academic achievement. Armstrong-Carter et al. (2021) investigated how the prosocial behavior of children in disadvantaged neighborhoods in Bradford in the United Kingdom affected academic risk. After 7 years of data collection, the researchers found that neighborhood socioeconomic status was positively associated with academic achievement for children with low levels of prosocial behavior but not for children with high levels of prosocial behavior. The researchers concluded that behavior can mitigate academic risk in early childhood.

Braun et al.'s (2020) study added to the research, suggesting that teachers' SEC level has a direct impact on students' disposition. Results indicated that when teachers used cognitive reappraisal (adjustment of negative thoughts), students reported low emotional distress. When teachers used expressive suppression, students reported a less positive outlook, and peers reported less prosocial behavior. Teachers' life satisfaction was associated with high levels of prosocial behavior.

Using an international population, Nalipay et al. (2022) investigated the ways in which teachers' personal and social characteristics can be used as predictors of teaching quality in terms of instructional clarity, classroom management, and cognitive activation. After a series of regression analyses, the researchers found that instrumental motivation predicted teaching clarity in the East and classroom management in both the East and the West. However, prosocial

motivation was a more consistent predictor of all indicators of instructional quality except classroom management in the West across cultures.

The Impact of Turnover on Students With Disabilities

In public schools, SWD have been identified and qualify for additional support. These students are assigned an SET who manages their IEP and monitors their progress toward their goals. Students have a right to be served by a certified SET who is trained to meet the unique needs of the students they teach. The attrition of SET is particularly problematic because it exacerbates the shortage, leaving many districts in the unfortunate position of having to hire unqualified personnel and requiring that limited resources be used for recruitment and induction rather than longer-term district initiatives (Billingsley & Bettini, 2019).

According to Thomas and Hammond's (2017) report, more than 30,000 SET positions were filled by uncertified teachers in any given year in the 1990s, and in 2000–2001, more than 47,000 (or 11%) of those who filled SET positions were not certified to teach in that subject area. The shortage of SETs affects the level of support students receive related to their identified disability. The turnover in SETs also negatively impacts student-teacher relationships, as students are often forced to familiarize themselves with the norms and expectations of a new teacher. The consequences of the shortage include inadequate educational experiences for students, lower levels of student achievement, and inadequate competency of graduates in the workplace (Billingsley, 2004).

Social Interdependence Theory

Psychologists of social interdependence theory suggest that people are primarily concerned with developing organized and meaningful views of their world by perceiving events as an integrated whole rather than as a summation of parts or properties (Johnson & Johnson,

2005). This notion asserts that people's ability to achieve their goals can be positively or negatively influenced by the social interactions, relationships, and actions of others. Johnson and Johnson (2005) asserted that interdependence only exists when more than one person or entity is involved, and the people or entities must affect each other in that a change in the state of one causes a change in the state of the others. When considering the impact and consequences of teacher attrition on the success of SWD, one must consider the nature of the relationships and connections developed between students and teachers.

Educators measure the success of SWD through comprehensive monitoring of progress toward academic, social, and behavioral goals. These students are assigned to a SET who works as their case manager. Effective case managers utilize intensive progress monitoring strategies to ensure that their students are meeting their goals. Over the course of the school year, students and their families will naturally develop close relationships with their case managers and other SETs. Social interdependence occurs when individuals' outcomes are influenced by the actions of others (Johnson & Johnson, 2005). There are two types of social interdependence: positive, when individuals' actions promote the achievement of shared goals, and negative when individuals' actions hinder the achievement of others' goals. The literature suggests that SETs leave the field with negative feelings because they feel overwhelmed and unprepared. Social interdependence theory suggests that teachers' actions and attitudes will have an impact on students' attitudes, their attitudes toward education, and their ability to achieve their goals because educators exude negative energy related to job dissatisfaction.

Impact of Student-Teacher Relationships

At-risk students are more likely to experience negative relationships with their teachers than their typically developing peers, making these students more vulnerable to school

maladjustment (Roorda et al., 2021). Student-teacher relationships play a large role in student success, as close relationships with teachers are associated with higher levels of engagement in learning tasks, while conflictual relationships with teachers appear to limit student engagement in school work. Positive or close student-teacher relationships are characterized by warmth, trust, and open communication. These factors provide students with a secure support system that allows them to explore the classroom environment and seek help when needed. However, students who experience high levels of conflict in their relationship with their teacher feel emotionally insecure and may therefore be less inclined to use the teacher as a resource (Roorda et al., 2021).

Furthermore, these relationships are thought to have a direct impact on student performance. According to the academic risk hypothesis, relationships with teachers are more influential in the school adjustment of at-risk students, as they have more to gain or lose from their relationship with their teacher (Roorda et al., 2021). For example, studies have found evidence that the quality of the student-teacher relationship has a greater impact on at-risk children, children with low socioeconomic status, or children with learning disabilities than on children who are not considered at-risk. Ethnic minority children can also be considered to be at increased risk of academic maladjustment, as they often underachieve in school compared to children from the ethnic majority.

According to Zee and de Bree (2017), the quality of students' relationships with their teachers plays a role in the development of their self-regulation skills and their later reading and math skills. The results of their study, which focused on the impact of student-teacher relationships on middle school students' self-regulation and achievement in basic reading and math skills, found that students' perceived closeness was positively associated with their task

orientation and metacognitive strategies. In contrast, a modest negative relationship was found between conflict and task orientation. However, this relational dimension did not appear to be connected to metacognitive strategies, suggesting that high levels of relational conflict do not necessarily hinder students' ability to focus their cognitions on goal attainment. Also inconsistent with the researchers' assumptions were the nonsignificant correlations of students' relationship perceptions and self-regulation with their reading and math skills.

Empirical research on the role of students' disabilities in the affective quality of student-teacher relationships has been largely inspired by extended attachment theory, which posits that warm and affectionate relationships between children and teachers can promote the child's sense of emotional security (Zee et al., 2020). Warm and emotionally secure student-teacher relationships are critical for children with disabilities, as these students typically have significant deficits or limitations in behavioral, social-emotional, or cognitive domains and often seek closeness with teachers when facing challenging situations in the classroom. According to Zee et al. (2020), SWD, including dyslexia, ASD, and ADHD, are often viewed by their teachers as less intelligent and more difficult to teach. This is concerning because teachers' perceptions can be adopted and adapted by other adults and students in the classroom.

Zee and Koomen (2019) based their research on 99 empirical studies, concluding that, on average, students show higher engagement in school when their relationships with teachers are characterized by positive qualities, such as closeness, and a general lack of negative qualities, such as conflict. Additionally, students who feel that their efforts and abilities are recognized by their teachers have been shown to be more eager to explore and learn and to have higher self-esteem and confidence in their ability to learn.

Institutional Impact of Teacher Attrition

Research shows that teacher attrition has an impact that goes beyond the classroom. Kelchtermans (2017) examined several effects of teacher attrition. The sociological or institutional impact of teacher turnover refers to governments' efforts to create a large and qualified teaching force. Teacher attrition represents a loss of investment that requires additional administrative work, such as managing paperwork, as well as introducing and socializing teachers to a new work environment (Kelchtermans, 2017). As leaders attempt to meet that demand, Thomas and Hammond (2017) estimated that the cost of replacing each teacher who leaves an urban school district is more than \$20,000.

Hiring and training new teachers is also financially costly; Milanowski and Odden (2007) found that first-year teacher attrition costs an urban district between \$9,000 and \$23,000 (Bettini et al., 2017). SETs, along with math, science, English, and foreign language teachers, are more likely to leave their schools or profession than teachers of other subject areas (Thomas & Hammond, 2017). Many argue that teacher turnover has a negative impact on the student learning environment because it reduces the continuity of instruction (Kelchtermans, 2017). As education leaders strive to reduce the rapidly increasing turnover of teachers, they must first consider the factors that lead teachers to consider changing roles.

Strategies to Reduce Teacher Attrition

The literature suggests that efforts to reduce teacher attrition begin at the recruitment stage. Aguilar (2018) has discussed the importance of considering emotional intelligence and resilience when leaders are considering candidates and training new teachers. Mind the Gap Framework is Aguilar's guide to teacher training that provides strategies for hiring new teachers and identifying teachers' levels of emotional intelligence to retain effective teachers. This

framework draws attention to the gap between a person's desired ability and their current ability to accomplish a task or goal.

Mind the Gap focuses on the following six gaps in a person's skills (Aguilar, 2018): cultural competence, emotional intelligence, capacity, will, ability, and knowledge. Cultural competence is the ability to understand, appreciate, and interact with people from cultures or belief systems other than one's own; it is the ability to manage cross-cultural differences. Emotional intelligence is the ability to be aware of, manage, and express one's emotions; it is the ability to recognize, empathize with, and deal with other people's emotions. Capacity is the time and resources required to do something; this can also be emotional and physical capacity. Will is the desire, intrinsic motivation, passion, or commitment. Will usually has an emotional tone. Skill is the ability to perform the technical elements of a task, which can be the application of knowledge. Knowledge is the theoretical or practical understanding of a subject; it can also be information. In order to retain teachers, it is advisable for school leadership to provide professional development that focuses on these potential gaps and offers strategies to fill the gaps while creating space for emotionally intelligent and resilient teachers.

As school leaders work to fill teacher vacancies, they are often forced to place uncertified, underqualified teachers in the classroom. Teacher preparation is a key variable in teacher attrition. Thomas and Hammond (2017) found that teachers who enter the profession through alternative certification pathways and have completed less coursework and student teaching on average than teachers prepared through traditional programs are 25% more likely to leave their schools and their profession, even after accounting for their students, schools, and teaching conditions. Research suggests that a growing number of teachers leave the profession

during their first 3 years on the job (Carr et al., 2017). Local education agencies need to consider programs that support nontraditional teachers while continuing the education of current teachers.

In an effort to retain effective teachers, the design of teacher residencies has gained popularity. This is a contemporary adaptation of the framework of Master of Arts in Teaching programs developed in the 1960s and 1970s, a time when there was also a historic teacher shortage (Guha et al., 2017). Studies of teacher residency programs have shown that student retention rates are high. Statistics have shown that even after several years in education, 80–90% of residents remain in the same district after 3 years and 70%–80% after 5 years (Guha et al., 2018). Districts also invest in mentoring, coaching, and self-monitoring programs for newly hired teachers. However, it is critical that local schools complement these programs by considering and addressing the individual needs of their teachers (Carr et al., 2017).

Teacher Self-Efficacy

Teachers' self-efficacy (TSE) can be defined as a self-related assessment of their abilities. TSE is considered a key factor for teachers' effective work in the classroom (Zee & Koomen, 2019). The literature suggests that teachers with a positive sense of self-efficacy toward their class are more likely to perceive difficult or low-achieving children as less challenging, to take more appropriate approaches to increasing their students' engagement and performance in class, and to do all they can to ensure that they succeed at difficult tasks. Although teacher efficacy is a motivational construct of teachers' self-perceptions of their competence rather than their actual level of competence, teacher efficacy has been found to have an impact on teachers' teaching effectiveness, persistence in failure situations, and the decision to stay in or leave the teaching profession (Zhang et al., 2018). According to Zee and Koomen

(2019), empirical research has shown that students who interact with self-efficacious teachers are likely to demonstrate higher levels of engagement in the classroom.

Because SWD are placed in the least restrictive, inclusive classroom setting, it is imperative that both SETs and GETs are confident in their abilities to serve this population. This cohesive relationship is critical to developing a positive learning environment for SWD and their peers in the general education classroom. The percentage of SWD placed in inclusive classrooms for the majority of the school day has increased from 34% in 199 to 58% (Zhang et al., 2018). In 2012, 62.1% of SWD spent 80% or more of the day in the regular classroom, 19.2% spent between 40% and 79% of the day, and 13.7% spent less than 40% of the day (Zhang et al., 2018). Between 13% and 44% of the variance in TSE can be explained by in-class variables, including students' academic level and their interest in their schoolwork (Zee & Koomen, 2019). Teachers are likely to develop differentiated sets of self-beliefs about their ability to work with individual children depending on student behavior in the classroom. These beliefs may have a negative impact on students whose behavior is a manifestation of their disability.

Efficacy in teaching SWD is critical to recruiting and retaining an adequate supply of teachers with high-quality teaching skills. Special education teaching is typically associated with high levels of stress and burnout. Therefore, teachers who feel more comfortable working with SWD are more likely to remain in the profession (Zhang et al., 2018). General education teachers who have higher efficacy in teaching SWD are more likely to accept SWD into their regular classrooms. In contrast, GETs who are less effective tend to remove SWD, resulting in biased referrals. These biases tend to be more pronounced for students from culturally and linguistically diverse backgrounds (Zhang et al., 2018). Allinder (1994) found that efficacy in teaching SWD was strongly correlated with instructional factors for SETs and consultants, concluding that

teacher efficacy in teaching SWD influenced the implementation of curriculum-based measures and achievement gains in mathematics (Zhang et al., 2018).

Professional Development

A teacher's perceived support from the school has a direct impact on their job satisfaction (Robinson et al., 2019). One critical area where teachers seek support is from leadership. Unfortunately, Kaff (2004) found that lack of administrative support was the most commonly cited cause of teachers feeling unsupported by their school environment, leading to higher levels of burnout (Robinson et al., 2019). This includes administrators who do not provide enough support for challenging student behavior, service delivery, and paperwork, as well as a lack of knowledge and experience in special education. According to Robinson et al. (2019), SETs who experience more support from their administrators are less stressed, more engaged in their classrooms and schools, and report higher levels of job satisfaction.

In addition to the lack of support from administrators, teachers indicated that they felt unsupported in collaborating with other teachers and disconnected from the school environment (Robinson et al., 2019). SETs often experience a sense of isolation from others at school because they lack meaningful opportunities to interact with colleagues. The literature on SET job satisfaction reports higher job satisfaction and retention when they feel supported by GETs and are provided with meaningful opportunities to collaborate. Despite this research, teachers report a lack of professional development opportunities and also note that the training provided in the past for special education was not useful. In order to produce effective educators and retain SETs, professional development for SETs should be aligned with program goals and introduce new evidence-based strategies.

Robinson et al.'s (2019) quantitative study addressed two main concerns in the literature gap on SET burnout: the relationship between teachers having meaningful professional development opportunities, feeling supported by their schools, and whether they plan to leave the field (i.e., job satisfaction), with links to burnout measured by emotional exhaustion, depersonalization, and personal accomplishment, while also analyzing the relationship between two sets of variables using canonical correlation analysis (CCA). The results of this study showed that the job satisfaction variables consisted of feeling supported by the school, leaving the field, and professional development opportunities. The variables related to job satisfaction were weaker in their dimensional structure than the burnout variables.

These results indicated two statistically significant canonical correlations between job satisfaction and the degree of burnout among teachers. The researchers concluded that there was a statistically significant relationship between teachers' burnout scores and job satisfaction (Robinson et al., 2019). This suggests that teachers who experience lower levels of job satisfaction are also likely to experience higher levels of burnout. In practice, this means that we need to improve teachers' job satisfaction if we want them to experience lower levels of burnout and stay in the classroom. This includes providing them with meaningful professional development opportunities and helping them feel supported by their school. The findings of this study strengthen the argument for a greater emphasis on retention strategies aimed at supporting SETs in the classroom. Through this analysis, educational programs and school districts, including administrators, can assess these interrelated variables to develop proactive strategies that increase job satisfaction and thus decrease levels of burnout.

Lack of administrative support has been shown to strongly influence SETs' decision to leave the profession and is one of the strongest determinants of teachers' job satisfaction (Hester

et al., 2020). Studies have found that several demographic variables can predict teacher burnout and attrition, including age, gender, certification level, and years of teaching experience (Hester et al., 2020). In particular, young, inexperienced teachers are more likely to leave the profession than their tenured colleagues. According to Paquette and Reig (2016), 85% of trainee teachers stated that workload is a major cause of work-related stress (Hester et al., 2020). As previously mentioned, excessive paperwork is a leading cause of burnout and contributes to teacher attrition. This professional gap falls under workload when considering the amount of time SETs are away from their students and their work outside of school to meet legal requirements and deadlines. In order to combat SET attrition, school districts have been urged to offer comprehensive workshops that address time management, coping strategies, and relaxation techniques to resist feelings of burnout (Robinson et al., 2019).

In addition to the lack of professional development for SETs, access to resources is also cited as a factor influencing their decision to stay. Hester et al. (2020) conducted a qualitative study in which 366 SETs in public schools were asked to name the most stressful aspects of their work. The open-ended questions allowed the researchers to filter the responses until they were able to categorize the answers. Results indicated that participants identified a lack of resources provided by school leadership, including principals and central office staff. Participants cited resources related to instructional materials, technology, and professional development opportunities. Participants frequently described the lack of support and resources they receive from their schools, including administration, the district, and other teachers in the school, as a reason for leaving the field of special education. When discussing support and resources, participants referenced their salary, level of support, access to professional development opportunities, classroom materials, and the general school environment.

Administrative support continues to be an important factor contributing to teacher attrition, which may be indicative of the poor prevalence of administrator preparation programs (Bettini et al. 2015). Research continues to show that administrators need to understand special education laws and responsibilities, create positive working conditions (e.g., materials, planning time, and mentoring), and provide meaningful professional development opportunities (Hester et al., 2020). Hester et al.'s (2020) research suggests that professional development could be an effective, proactive intervention to address work-related stress and attrition in SETs by providing teachers with tools to reflect on their practice and improve teacher-student relationships in the classroom. Effective professional development opportunities are one possible means of supporting SETs while addressing additional stressors related to their work. Administration at the district and school level should consider providing training that allows teachers to identify the major stressors of their position and develop an action plan to reduce this overall stress, such as a self-directed stress management plan.

SETs expect the building management to give them guidance and create a manageable working environment. Teachers who remain in the profession are more likely to perceive their administrators and the overall school climate as supportive of their professional development (Grant, 2017). However, teachers who were not satisfied with the amount of support and feedback they received from administrators were less likely to stay in their current jobs, and many tended to leave the field of education altogether. SETs have reported experiencing increased levels of stress and burnout, citing issues related to the high demands of paperwork, which is a large factor in their decision to leave the profession. However, the availability of school-based mentorships, constructive feedback, or support systems is not great for SETs. This perceived lack of support causes more stress and the potential for burnout.

Grant's (2017) qualitative case study research design was used to describe the experiences of trainee SETs from their own perspective. The research included three themes: perceptions of administrative support, excessive paperwork, teacher burnout, and the likelihood of retention at the end of the school year. Participants in this study included two first-year SETs working in inclusion classrooms at the same local middle school. Both participants had a bachelor's degree, one in social work and the other in special education. The study utilized survey data and interview questions that were emailed to the two participating teachers. The survey contained closed-ended questions that focused on their perception of their need for support from administrators and/or mentors, their ability to complete paperwork, and their ability to effectively manage their student workload.

In addition to the survey, participants were asked to complete a questionnaire consisting of three open-ended questions and one suggestion that they felt would support the retention of prospective SETs. The outcome of this survey shared the participants' views on the leadership of the building, with both disagreeing that administrators supported them as first-year teachers. Additionally, both disagreed with the statement that administrators were sensitive to their needs, and both agreed that they felt isolated.

In further analysis of the survey and questionnaire results, other themes emerged that could be useful in developing comprehensive plans for first-year special educators, such as (a) poor co-teaching relationships, (b) ineffective co-teaching practices, (c) dealing with the adaptations and modifications of SWD in the mainstream classroom, (d) constant changes in special education policies and procedures that impact paperwork requirements and classroom practices, (e) co-planning with the mainstream teacher to create lesson plans for the different

grade levels of children in the inclusion classroom, and (f) inadequate preparation or training prior to initial classroom placement.

Analysis of the data suggests that first-year SETs feel isolated within the school and lack sufficient mentorship and administrative support. Grant (2017) suggested that early-career SETs would benefit from a higher level of support from mentors and administrators within the school if this support provided constructive feedback and suggestions to improve practice. To support this idea, participants suggested that schools should establish a mentoring program specifically geared toward the support and professional development of teachers new to the special education profession. Further analysis of the study results revealed that the relationship between SETs and GETs in the co-taught classroom was very strained and that co-taught practices were not used in a way that benefited the students in the classroom. In addition, professional development opportunities where SETs and GETs education teachers learn how to successfully implement co-teaching and inclusion would be beneficial to break down barriers that arise when working together.

Recent studies have suggested that the turnover of teachers in high-need settings is not due to problems related to the needs of their students but rather to high levels of stress and job dissatisfaction due to poor working conditions (Ansley et al., 2019). SET leaders need to familiarize themselves with the working conditions associated with job satisfaction and quality of work experiences and seek resources to support them. Higher levels of job satisfaction among teachers have been associated with other indicators of quality of work, such as lower job stress, higher teacher efficacy or belief in their abilities as teachers, positive interpersonal interactions at school, and stronger professional commitment. The aim of Ansley et al.'s (2019) study was to investigate perceptions of working conditions and quality of work experience among special

school teachers by answering the following research questions: How do teachers in a special education school rate their satisfaction with working conditions in terms of (a) school leadership, (b) workplace relationships, and (c) job design?

This study took place in the regional division of a statewide education program that provided a continuum of services to local school districts under IDEA (2004). The researchers administered a 43-item survey asking participants for information and asking them to respond with four Likert-scale items when it came to their perceptions of working conditions and the quality of their work experiences. The findings showed that the majority of teachers at the school were satisfied with their working conditions and experienced overall job satisfaction. Job satisfaction was related to perceived student achievement and was associated with working conditions. Those who reported lower job satisfaction and lower student achievement also expressed dissatisfaction with working conditions.

Ansley et al. (2019) suggested that SET leaders provide constructive feedback and evaluations to teachers to promote continued professional growth rather than jeopardizing the status of their jobs. These findings support the suggestion that work context is not only important to teachers but is also associated with student outcomes. In addition, job design was associated with overall job satisfaction but not at the same level of significance as perceptions of leadership and relationships. The survey results indicated that school leaders should pay attention to the job design of their teachers, particularly the conditions within their control.

Summary

Hiring and retaining quality teachers is a global education challenge as school leaders grapple with increasing teacher attrition. While the industry as a whole faces this dilemma, special education departments and the families they serve are disproportionately impacted by this

shortage as special education programs struggle to retain and recruit certified SETs. As a result, SWD suffer. They do not receive the high level of academic and social support they desperately need. The literature suggests that SETs are leaving their departments in search of more desirable working conditions in general education or leaving the field altogether.

Several factors contribute to high attrition rates, including inadequate preservice training, a repressive school culture, and an inability to cope with job demands. The literature suggests that GETs and students receive preferential treatment over SETs and students. While these teachers seek alternative employment opportunities, SWD suffer from losing specialists and staff who actively advocate for their rights and instructional support. In addition to the lack of support, the literature also suggests that teachers have innate biases and perspectives related to how students learn. These biases affect their level of effort and interactions with SWD. These views influence teachers' practices and philosophies regarding SWD.

Researchers suggest that school leaders reevaluate the way they hire and train all educators. The Mind the Gap framework suggests that educators focus on teacher candidates' emotional intelligence as an indicator of their ability to handle the demands of the profession. This framework also suggests that school leaders commit to the continuous professional development of staff. The quality of professional development is a recurring theme in the literature, suggesting that inadequate preservice preparation and a lack of in-service training are factors that contribute to teacher attrition. Malcolm Knowles et al.'s (2005) theory of adult learning, andragogy, examines effective teaching strategies for adult learners. Andragogy provides a framework for learning models designed to ensure that adult educators connect with adult learners. Both general education and SETs will benefit from restructured professional development initiatives.

Many researchers have investigated the factors that contribute to the turnover of SETs. However, few to no studies have examined the consequences of SET attrition, particularly those focusing on high school students enrolled in high-poverty or Title I schools. There is a need for researchers to study the impact of SET attrition on students, their families, and the teachers with whom they have worked while also focusing on the impact of this attrition on the achievement of SWD. Student success in special education is goal-oriented. Educators and families are required to measure and monitor student success by regularly reviewing students' academic, social, and/or behavioral goals. Social interdependence theory states that individuals' ability to achieve their goals can be positively or negatively affected by the social interactions, relationships, and actions of others. Thus, students are influenced by the actions and feelings of their teachers. Analyzing special education achievement data within high schools that suffer from excessive turnover of SETs allows for a better understanding of the direct impact that teacher attrition has on special education student achievement.

CHAPTER THREE: METHODS

Overview

The purpose of this quantitative, causal-comparative study was to determine if there was a difference between Georgia special education student achievement on the Ninth Grade Literature and American Literature Georgia Milestones Tests within Georgia public school districts with high and low teacher attrition. This chapter begins by presenting the design of the study, including complete definitions of all variables. The research questions and null hypothesis follow. The participants and setting, instrumentation, procedures, and data analysis plans are also detailed.

Design

This study used a quantitative, causal-comparative research design, a type of non-experimental, quantitative research in which the researcher compares two or more groups in relation to a cause or independent variable that has already occurred (Creswell & Creswell, 2018). Causal-comparative researchers seek to identify cause-and-effect relationships by creating groups of individuals in which the independent variable is present or absent and then determining whether the groups differ on the dependent variable. The key feature of causal-comparative research is that the independent variable is measured in categories (Gall et al., 2007).

This was the most appropriate design for this study, which compared high and low SET attrition rates with student standardized test scores for both Ninth Grade Literature and American Literature Georgia Milestones Tests. The independent variable was SET attrition rates. Teacher attrition refers to qualified teachers leaving the profession for reasons other than reaching retirement age, often referred to as “teacher turnover” (Kelchtermans, 2017). A school with an

attrition rate of 5% is considered stagnant; a 6%–8% attrition rate is considered moderate; and a rate above 10% is considered detrimental to public school effectiveness (Yu et al., 2023).

The dependent variable was student achievement. Student achievement is defined as meeting and/or maintaining the proficient learner achievement level on the Georgia Milestones Assessment (GaDOE, 2023). Data were collected from all Georgia school districts to determine attrition rates. Districts were categorized by their SET attrition rate: high, average, or low. The researcher sought to determine the effect of the independent variable on the dependent variable.

Research Questions

This study posed the following research questions:

RQ1: Is there a difference in special education students' achievement scores on the Ninth Grade Literature Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?

RQ2: Is there a difference in special education students' achievement scores on the American Literature Georgia Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?

Hypotheses

The null hypotheses for this study were as follows:

H₀1: There is no difference between special education students' achievement scores on the Ninth Grade Literature Milestones assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates.

H₀2: There is no difference between special education students' achievement scores on the American Literature Georgia Milestones Assessment between those who attend school

districts with high SET attrition rates and those who attend school districts with low SET attrition rates.

Participants and Setting

This section includes a description of the population, the participants, the sampling technique, and the sample size. It concludes with a description of the setting.

Population

Participants for the study were drawn from a random sample of high schools located in Georgia during the 2018–2019 school year. The researcher accessed student Georgia Milestones data from the public website, The Governor’s Office of Student Achievement. State teacher attrition data is reported by GaDOE. According to GaDOE (2023), the state’s total public school student population was 1,686,318. The ethnic breakdown included American Indian (0.2%), Asian (4.5%), Pacific Islander (0.1%), Black (36.51%), Hispanic (17.1%), White (37.4%), and Other (4.2%).

Of the reported population, 530,550 (31%) are high school students, and 204,004 (12.1%) are special education students. Georgia has 2,306 public schools in 219 school systems, with a total of 119,492 teachers (GaDOE, 2023). The sample consisted of 143 Title I schools, 80 non-Title 1 schools during the 2018–2019 academic year; 138 Title I schools, 84 non-Title 1 schools during the 2020–2021 academic year; 42 rural schools, 20 urban schools, and nine suburban schools.

Participants

For this study, the researcher sampled 68 school districts, which, according to Gall et al. (2007), exceeds the required minimum of 40 for an independent samples *t*-test when assuming a large effect size with a statistical power of 0.7 at the .05 alpha level. Student assessment data was

analyzed for all SWD who took the Ninth Grade Literature Milestones Assessment in 2019, as well as all SWD who took the American Literature Milestones Assessment in 2022. The sample population consisted of schools with special education students who had taken the Georgia Milestones Ninth Grade Literature and Composition as well as the Georgia Milestones American Literature and Composition (Eleventh Grade) assessment. School districts sampled included 143 Title I schools, 80 non-Title 1 schools during the 2018–2019 academic year, and 138 Title I schools and 84 non-Title 1 schools during the 2020–2021 academic year (GaDOE, 2023).

Georgia serves approximately 1,686,318 students, of whom approximately 204,004 are identified as SWD, and 946,931 students are eligible for free or reduced lunch. The student population in Georgia includes 530,550 high school students (United States Census Bureau, 2022). The graduation rate measures whether students leave high school in 4 or 5 years with a regular diploma. This component includes both four- and five-year adjusted cohort graduation rates and applies only to high schools (GaDOE, 2019). In 2019, the overall high school graduation rate in Georgia was 82.9%, and the graduation rate for SWD was 62.9% (GaDOE, 2019). In 2022, the state’s graduation rate was projected to be 84.7%, with a graduation rate for SWD of 72.45% (GaDOE, 2022).

Setting

Georgia’s state student assessment data and teacher attrition data were analyzed. Georgia has an approximate population of 10,913,150 (United States Census Bureau, 2022). The median household income is \$71,355, which is below the national median income of \$75,149 and \$3,700 above the state’s average median household income (United States Census Bureau, 2022). According to Thomas and Hammond (2017), the national average attrition rate for GETs was 8% in 2013.

Instrumentation

The purpose of the Georgia Milestones Assessment is to measure students' mastery of the knowledge and skills outlined in the state-adopted content standards in English language arts, mathematics, science, and social studies (GaDOE, 2021). End-of-course assessments are administered upon completion of the course, regardless of the grade level. These measures serve as the final assessment for the course and contribute a percentage of the student's final course grade. Georgia Milestones is primarily computer-administered and includes the following features (GaDOE, 2021):

- technology-enhanced items in all grades and courses,
- open-ended (constructed-response) items in English language arts in all grades and courses,
- a writing component (in response to passages read by students) at every grade level and course within the English language arts assessment,
- a reported Lexile score based on the English language arts assessment in all grades and courses, and
- estimated norm-referenced performance ranges for all grades and courses.

This tool has been used in numerous peer-reviewed studies. Mays-Truitt (2019) used this instrument to evaluate the ability of the Georgia Milestones Assessment to predict academic success between third and fifth grade English language arts readiness scores. Burke (2021) examined the multi-linear regression of the Georgia Milestones and English Proficiency Assessment Access 2.0 on Georgia's middle school English language learners, and Judkins-Graves (2018) examined the impact of the Georgia Milestones Assessment System on SWD.

GaDOE oversees the development of the Georgia Milestones Assessment System and adheres to the Standards for Educational and Psychological Testing (2014) as established by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME; GaDOE, 2018).

Validity evidence supporting the Georgia Milestones Assessment System is dependent upon how well the assessment instrument matches the intended content standards and how the score reports inform the various stakeholders about the students' performance (GaDOE, 2018). The Georgia Milestones Assessment System department undergoes a test development cycle, which requires that the test begin with the state's mandated content standards.

Once the purpose of the test is established, committees of educators are formed to review the content standards and establish which concepts, knowledge, and skills will be assessed and how they will be assessed. The results of this review produce key documents, including test specifications indicating which standards can and will be measured and how they will be represented on the assessment; the content domain specifications; the test blueprints; how specific standards or elements will be grouped into reporting categories; and test item specifications providing detail related to what kinds of items will be written. All activities are conducted by the department with the assessment contractor, with substantial involvement from curricular specialists and Georgia educators.

The content domain specifications are then converted into publicly posted documents known as the Georgia Milestones Assessment Guides, which enable stakeholders to access information related to the test's content and method of assessment. By attending carefully to each phase of the test development process, the GaDOE can ensure that the Georgia Milestones Assessment System consists of valid instruments for the use for which the department has

developed the test. The Georgia Milestones contractors produce documentation of each phase of the test development process and various pieces of evidence.

Georgia Milestones Ninth Grade Literature and Composition Assessment

The Ninth Grade Literature and Composition EOC test consists of selected-response tasks, technology-assisted tasks, constructed-response tasks, extended constructed-response tasks, and extended written-response tasks. In developing the tasks, emphasis was placed on the thinking skills required to answer the questions according to depth of knowledge (DOK). DOK is measured on a scale of 1 to 4 and refers to the level of cognitive demand (different types of thinking) required to complete a task or, in this case, an exam item (GaDOE, 2020b).

This assessment consists of a total of 51 items. According to GaDOE (2018), the Cronbach's alpha coefficient for the Ninth Grade Literature and Composition Assessment ranges from .89 to .91. The Ninth Grade Literature and Composition Assessment is scored using the following scale score range: beginning learners (220–474), developing learners (475–524), proficient learners (525–586), and distinguished learners (587–735). Students have up to 90 minutes to complete Section 1, which includes the writing prompt, and up to 80 minutes per section to complete Sections 2 and 3. The estimated total testing time for the Ninth Grade Literature and Composition EOC assessment ranges from approximately 125 to 250 minutes. Total test time describes the amount of time students have to complete the assessment. Section 1, writing, must be administered on a separate day from Sections 2 and 3; however, Sections 2 and 3 may be administered on the same day or across two consecutive days.

Georgia Milestones American Literature and Composition Assessment

The EOC exam in American Literature and Composition consists of selected-response tasks, technology-based tasks, constructed-response tasks, extended constructed-response tasks,

and extended written-response tasks (GaDOE, 2020a). Students typically take this exam in 11th grade. In developing the American Literature and Composition EOC exam items, emphasis was placed on the level of thinking required to answer the questions in terms of DOK. DOK is measured on a scale of 1 to 4 and refers to the level of cognitive demand (different types of thinking) required to complete a task. The American Literature and Composition EOC test consists of a total of 51 items.

According to GaDOE (2018), the Cronbach's alpha coefficient for the American Literature and Composition Assessment is between .87 and .90. The American Literature and Composition Assessment is scored using the following scale: beginning learners (190–474), developing learners (475–524), proficient learners (525–589), and distinguished learners (590–750). The test is administered in three sections. Students have up to 90 minutes to complete Section 1, the writing task, and up to 80 minutes per section to complete Sections 2 and 3 (GaDOE, 2020a). The estimated total time for the EOC exam in American Literature and Composition is between 125 and 250 minutes. Section 1 must be taken on a different day than Sections 2 and 3. Sections 2 and 3 may be administered on the same day or on two consecutive days, depending on the district's testing protocols for the EOC measures.

Procedure

Liberty University Institutional Review Board (IRB) approval was obtained prior to conducting this study. Approval from the GaDOE was not required as the data are publicly available online. When analyzing teacher turnover rates, Hanita et al. (2021) suggested using teacher-level frequency data on the number of leavers and stayers for each district and calculating the total number of leavers and stayers separately. Teacher attrition rates in Georgia from 2018–2022 were taken from GaDOE's Educator Pipeline Dashboard. A school with a

turnover rate of 5% is considered stagnant; 6-8% turnover rates are considered moderate; and rates exceeding 10% are considered detrimental to public school effectiveness (Yu et al., 2023). The researcher compared the average attrition rates for all school districts in the state of Georgia. GaDOE provides annual teacher attrition rate data. The attrition rates were calculated by subtracting the reported attrition rate from 100 for each reported school district. After calculating the attrition rates, districts were categorized as low, moderate, or high.

The researcher obtained data on student achievement on the Georgia Milestones from the Governor's Office of Student Achievement. This information can be found on the website's downloadable data page. This page provides Georgia Milestones data in Excel (CSV) format. Currently, Georgia Milestones test results are provided for the 2014–2015 through 2022–2023 school years. The researcher selected and downloaded the available data for the following school years: 2018–2019, 2019–2020, and 2020–2021. Identifying and personal student information is not disclosed in this data collection because the information is organized by the school district. The researcher filtered the data to include only the achievement score/status of SWD who took both exams per district. Student achievement levels on the Ninth Grade Literature Exam from 2019 were analyzed and compared to student achievement scores from the 2021 American Literature Exam (11th grade). Student achievement was compared to the state-reported teacher attrition rate for each district in the 2018–2019, 2019–2020, and 2020–2021 school years. Raw data were coded in Microsoft Excel and transferred to IBM SPSS Statistics software. When the data were not in use, they were stored on a password-protected external hard drive. Data will be retained for 5 years after the completion of this research study.

Data Analysis

Two independent samples *t*-tests were conducted to determine if there was a difference between student achievement scores and school districts with high and low teacher attrition rates. The use of the independent samples *t*-test in causal-comparative research depends on the following assumptions: the results form an interval or ratio scale, the results of the populations studied are normally distributed, there are no significant outliers, and the variances of the results are the same for the populations studied (Gall et al., 2007). Data screening was conducted for the variable, student Milestones Assessment scores from Georgia counties.

The data were sorted for each variable and examined for inconsistencies. Descriptive statistics were obtained on the dependent variable for each school. A box and whiskers plot was used to detect extreme outliers on the dependent variable. The independent samples *t*-test requires that the assumption of normality be met; normality was assessed using the Shapiro-Wilks test of normality. The assumption of homogeneity of variance was tested using Levene's test of equality of variances. The alpha level used for each statistical analysis technique is $\alpha = .05$. Effect size is an estimate of the magnitude of the difference, relationship, or effect in the population being studied (Gall et al., 2007), which was calculated using Cohen's *d*.

CHAPTER FOUR: FINDINGS

Overview

This quantitative, causal-comparative study aimed to determine if there was a difference between Georgia special education student achievement on the Ninth Grade Literature and American Literature Milestones Test within Georgia public school districts with high and low teacher attrition. An independent samples *t*-test was used to test the hypothesis. The findings section includes the research questions, null hypotheses, data screening, descriptive statistics, hypothesis testing, and results.

Research Questions and Null Hypotheses

RQ1: Is there a difference in special education students' achievement scores on the Ninth Grade Literature Milestones assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?

RQ2: Is there a difference in special education students' achievement scores on the American Literature Georgia Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?

H₀1: There is no difference between special education students' achievement scores on the Ninth Grade Literature Milestones assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates.

H₀2: There is no difference between special education students' achievement scores on the American Literature Georgia Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates.

Results

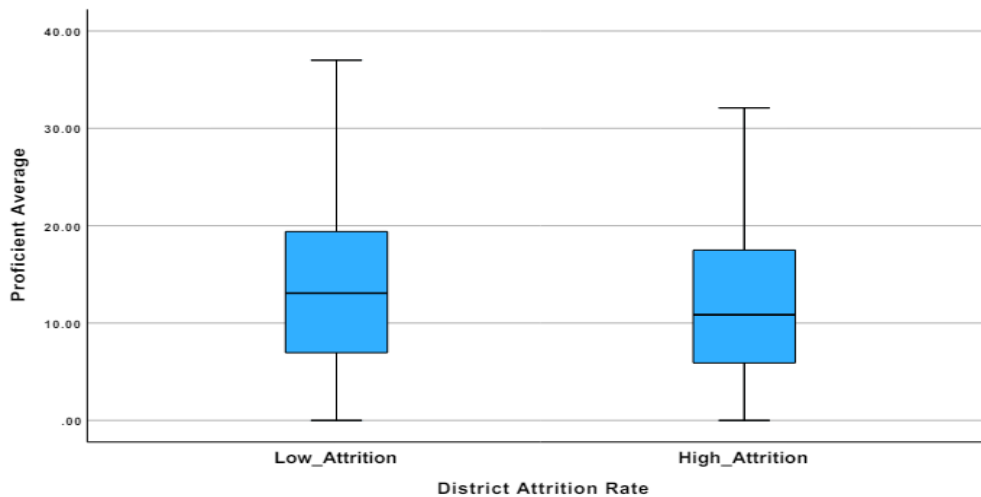
Null Hypothesis 1

Data Screening

Data screening was conducted on each group's dependent variable. The researcher sorted the data on each variable and scanned for inconsistencies. No data errors or inconsistencies were identified. Box and whisker plots were used to detect outliers on each dependent variable. No outliers were identified. See Figure 1 for box and whisker plots.

Figure 1

Box and Whisker Plots



Descriptive Statistics

Descriptive statistics were obtained on the dependent variable for each group. The sample consisted of 68 participants. Student achievement for the Ninth Grade Literature Georgia Milestones Assessment is categorized into four achievement level descriptors: beginning learner,

developing learner, proficient learner, and distinguished learner. Beginning learners do not yet demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in Georgia's content standards. Proficient learners demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in Georgia's content standards. Descriptive statistics can be found in Table 1.

Table 1

Descriptive Statistics

	District attrition rate	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Proficient average	Low_attrition	34	13.6420	9.00284	1.54397
	High_attrition	34	12.2358	7.89572	1.35410

Assumption Testing

The independent samples *t*-test requires that the assumption of normality be met. Normality was examined using Shapiro-Wilks. The assumption of normality was met with $p = .349$ ($> .05$). See Table 2 for tests of normality.

Table 2

Tests of Normality

	District attrition rate	Statistic	<i>df</i>	Sig	Statistic	<i>df</i>	Sig
Proficient average	Low_attrition	.107	34	.200	.965	34	.349
	High_attrition	.097	34	.200	.974	34	.577

The independent samples *t*-test requires that the assumption of homogeneity of variance be met. The assumption of homogeneity of variance was examined using Levene's test. The assumption of homogeneity of variance was met where $p = .488$. See Table 3 for Levene's test of equality of error variance.

Table 3

Levene's Test of Equality of Error Variance

	Levene's test for equality of variance		<i>t</i> -test for equality of mean	
	<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>
Proficient average	.487	.488	.685	66
Equal variances assumed				
Equal variances not assumed			.685	64.895

Results

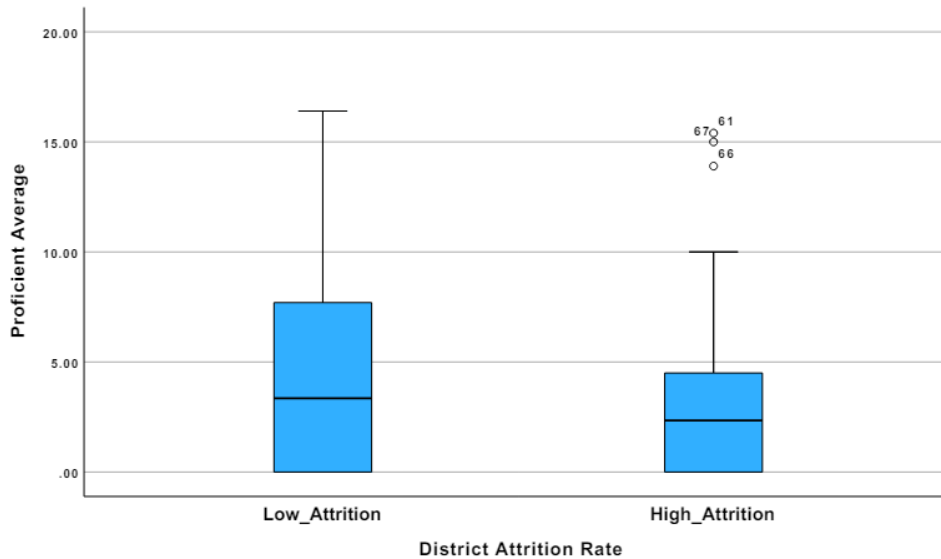
An independent sample *t*-test was conducted to determine if there was a difference in special education students' achievement scores on the Ninth Grade Literature Milestones Assessment between those attending school districts with high SET attrition rates and those attending school districts with low SET attrition rates. The independent variable was the SET attrition rate, and the dependent variable was student achievement on the Georgia Milestones Assessment. The researcher did not reject the null hypothesis at the 95% confidence level, where $t(66) = -17.75, p = .50$. Eta square was equal to ($\eta^2 = .001$). Eta square was calculated using the formula $\eta^2 = t^2/(t^2 + df)$. There was no statistical difference between districts with low attrition rates ($M = 13.642, SD = 1.543$) and high attrition rates ($M = 12.235, SD = 1.354$) high school students. See Table 4 for independent samples *t*-test results.

Table 4*Independent Samples t-test*

		95% CI					
		One-sided <i>p</i>	Two- sided <i>p</i>	Mean difference	Std. error difference	Lower	Upper
Proficient average	Equal variances assumed	.248	.496	1.40619	2.05364	-2.694	5.506
	Equal variances not assumed	.248	.496	1.40619	2.05364	-2.695	5.508

Null Hypothesis 2*Data Screening*

Data screening was conducted on each group's dependent variable. The researcher sorted the data on each variable and scanned for inconsistencies. No data errors or inconsistencies were found. Box and whisker plots were used to identify outliers on each dependent variable. No outliers were identified. See Figure 2 for box and whisker plots.

Figure 2*Box and Whisker Plots**Descriptive Statistics*

Descriptive statistics were obtained on the dependent variable for each group. The sample consisted of 68 participants. Student performance on the American Literature Georgia Milestones was categorized into four achievement levels: beginning learner, developing learner, proficient learner, and distinguished learner. Beginning learners do not yet demonstrate proficiency in the knowledge and skills required for this grade level/course of study as specified in Georgia's content standards. Proficient learners have mastered the knowledge and skills required at this grade level/course of study as specified in Georgia's content standards. Descriptive statistics are presented in Table 5.

Table 5*Descriptive Statistics*

	District attrition rate	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Proficient average	Low attrition	34	4.4285	5.08472	.87202
	High attrition	34	3.4592	4.47043	.76667

Assumption Testing

The independent samples *t*-test requires the assumption of normality. Normality was tested using Shapiro-Wilks. The assumption of normality was not met with $p = <.001 (< .05)$. See Table 6 for tests of normality. Although normality was not met, the researcher proceeded with the test because the sample sizes were equal, and non-normality does not significantly impact the Type I error rate (Laerd Statistics, 2015).

Table 6*Tests of Normality*

	District attrition rate	Statistic	<i>df</i>	<i>Sig</i>	Statistic	<i>df</i>	<i>Sig</i>
Proficient average	Low attrition	.249	34	<.001	.830	34	<.001
	High attrition	.220	34	<.001	.769	34	<.001

The independent samples *t*-test requires that the assumption of homogeneity of variance be met. The assumption of homogeneity of variance was examined using Levene's test. The assumption of homogeneity of variance was met, where $p = .225$. See Table 7 for Levene's test for equality of error variance.

Table 7*Levene's Test of Equality of Error Variance*

	Levene's test of equality of variance		<i>t</i> -test for equality of means	
	<i>F</i>	Sig.	<i>t</i>	<i>df</i>
Proficient average	1.501	.225	.835	66
Equal variances assumed				
Equal variances not assumed			.835	64.935

Results

An independent samples *t*-test was conducted to determine if there was a difference in the achievement scores of special education students' achievement scores on the American Literature Georgia Milestones Assessment between those attending school districts with high SET attrition rates and those attending school districts with low SET attrition rates. The independent variable was the SET attrition rate, and the dependent variable was student achievement on the Georgia Milestones Assessment. The researcher did not reject the null hypothesis at the 95% confidence level, where $t(66) = 55.11$, $p = .41$. The eta square was equal to ($\eta^2 = .010$). The effect size was small. Eta square was calculated using the formula $\eta^2 = t^2/(t^2 + df)$. There was no statistical difference between districts with low attrition rates ($M = 4.429$, $SD = 5.085$) and high attrition rates ($M = 3.459$, $SD = 4.470$) among high school students. See Table 8 for independent samples *t*-test results.

Table 8*Independent Samples t-test*

		95% CI					
		One- sided <i>p</i>	Two- sided <i>p</i>	Mean difference	Std. error difference	Lower	Upper
Proficient average	Equal variances assumed	.203	.407	.96932	1.16112	-1.349	3.288
	Equal variances not assumed	.203	.407	.96932	1.16112	-1.350	3.288

CHAPTER FIVE: CONCLUSIONS

Overview

Chapter 5 contains the discussion section of the dissertation, including an overview of the study and its purpose. This section also explores the conclusions of the study and the literature relevant to the study's results. The significance of the study is outlined in the implications section. This section also explains the additions to the body of knowledge and theory. The last two sections of this chapter address the limitations and the recommendations for future research. These sections allow the researcher to inform future researchers in this field.

Discussion

The purpose of this quantitative, causal-comparative study was to determine if there was a difference between the performance of Georgia special education students on the Georgia Milestones Tests of Ninth Grade Literature and American Literature in school districts with high and low teacher attrition. This section begins with the purpose of the study and a brief overview. This study compared Georgia school districts' SET attrition rates with the mean percentage of SWD scoring proficient on the Georgia Milestones Literature Assessments to determine if there was a significant difference in student achievement between school districts with low and high SET attrition rates. The percentage of student achievement for the school district's overall SET attrition rate and the content-specific SET attrition rate were calculated for each assessment. The data sample for this study included 180 school districts in Georgia; however, the final number of participants was reduced to 68 school districts due to the exclusion of incomplete data sets.

RQ1 asked, "Is there a difference in special education students' achievement scores on the Ninth Grade Literature Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?"

An independent samples *t*-test was conducted to determine if there was a difference in special education students' achievement scores on the Ninth Grade Literature Milestones assessment between those who attended school districts with high SET attrition rates and those who attended school districts with low SET attrition rates. The independent variable was the SET attrition rate, and the dependent variable was student achievement on the Georgia Milestones Assessment. The researcher did not reject the null hypothesis at the 95% confidence level, where $p = .50 (> .05)$. There was no statistical difference between districts with low attrition rates ($M = 13.642, SD = 1.543$) and high attrition rates ($M = 12.235, SD = 1.354$) for high school students.

While the results of the independent samples *t*-test are consistent with the researcher's null hypothesis, the implications are at odds with the results of previous research on the impact of teacher attrition on student achievement. Oberle et al. (2020) investigated a relationship between elementary school teacher burnout and student perceptions of teachers' SEC. In this study, approximately 670 students were asked about their perceptions of their teachers' SEC, and approximately 35 teachers self-reported that they were burned out at work (Oberle et al., 2020). The multilevel analyses revealed that higher levels of reported teacher burnout were related to lower levels of student-rated teacher SEC. This underscores the relationship between teacher burnout and SEC, as well as evidence that students perceive their teachers' stress.

Oberle et al.'s (2020) findings are inconsistent with the results of the present study, as they presented quantitative results depicting the influence of teacher SEC on student achievement. However, this study differs from the current study in that the participating students were not controlled for SWD, and the surveyed teachers were not controlled for SET. While that study focused on elements of burnout, the current study compared attrition rates affected by

burnout. It can be assumed that the teachers surveyed are still in their current roles and are not contributing to attrition rates.

Nalipay et al. (2022) investigated the ways in which personal and social characteristics of teachers can be used as predictors of the quality of teaching in terms of clarity of instruction, classroom management, and cognitive activation. After a series of regression analyses, the researchers found that instrumental motivation predicted instructional clarity in the East and classroom management in both the East and the West; however, prosocial motivation was a more consistent predictor of all indicators of instructional quality, except classroom management in the West, across cultures (Nalipay et al., 2022). This study draws on the same theoretical framework as the current study, the prosocial classroom model.

The results support the notion that the level of SEC a teacher possesses can predict an educator's competence and effectiveness in the classroom, in contrast to the results of the current study, which indicate that there is no significant relationship or difference in SWD achievement outcomes between school districts with high or low SET attrition rates. SET attrition also has a negative impact on existing student-teacher relationships, as students are often forced to adjust to the norms and expectations of a new teacher. The consequences of teacher shortages include inadequate educational experiences for students, lower levels of student achievement, and inadequate competency of graduates in the workplace (Billingsley, 2004).

RQ2 asked, "Is there a difference in special education students' achievement scores on the American Literature Georgia Milestones Assessment between those who attend school districts with high SET attrition rates and those who attend school districts with low SET attrition rates?"

An independent samples *t*-test was conducted to determine whether there was a difference between special education students' achievement scores on the American Literature Georgia Milestones Assessment between those attending school districts with high SET attrition rates and those attending school districts with low SET attrition rates. The independent variable was the SET attrition rate, and the dependent variable was student achievement on the Georgia Milestones Assessment. The researcher did not reject the null hypothesis at the 95% confidence level, where $p = .41 (> .05)$. There was no statistical difference between districts with low attrition rates ($M = 4.429, SD = 5.085$) and high attrition rates ($M = 3.459, SD = 4.470$) for high school students.

The results of the independent samples *t*-test are consistent with the researcher's hypothesis. However, the academic risk hypothesis suggests that relationships with teachers have a greater impact on the school adjustment of at-risk students because they have more to gain or lose from their relationship with their teacher (Roorda et al., 2021). Studies have found evidence that the quality of the student-teacher relationship has a greater impact on at-risk children, children with low socioeconomic status, or children with learning disabilities than on children who are not considered at-risk. Roorda et al.'s (2021) findings are related to the current study as it directly mentions the impact of teacher relationships and dispositions on SWD. Although the current study suggests that whether SETs remain in or leave their current role has no significant impact on students' academic achievement, Roorda et al. (2021) examined the social-emotional impact that teachers have on SWD's ability to adjust to the school environment.

Furthermore, according to Zee and de Bree (2017), the quality of relationships between students and teachers plays a role in the development of their self-regulation skills and their later reading and math skills. The results of their study, which focused on the impact of student-

teacher relationships on middle school students' self-regulation and achievement in basic reading and math skills, found that students' perceptions of closeness were positively associated with their task orientation and metacognitive strategies. Similar to the aforementioned study, the current study focuses on the impact of the teacher's role on student performance in reading and writing as assessed by the Georgia Literature Milestones Assessment. This study demonstrates the positive impact of the student-teacher relationship on student achievement. However, it does not control for SET and SWD participants as the current study does. The literature emphasized the extent to which the role of SETs differs from that of their GET counterparts. Thus, there are factors that contribute to burnout and attrition in SETs that do not occur in GETs. Therefore, it is imperative that more studies focus exclusively on the role and adversities of SETs.

Implications

The attrition and turnover rate of SETs is a cause for concern for local education authorities and all stakeholders. Between 17% and 29% of SET teacher posts become vacant each year, mainly due to attrition (Mason-Williams et al., 2019). SET teacher attrition is an area that needs to be actively addressed and supported. According to Georgia teacher shortage data collected in 2018 and 2019, there were 3,400 SET vacancies in the state. New teacher data indicates that Georgia hired 1,235 new SETs between 2018 and 2020 and lost about the same number of SETs each year (Low, 2023).

School leaders at all levels need to commit to interventions and strategies aimed at recruiting and retaining certified SETs with high levels of self-efficacy. The theory upon which this study draws is the prosocial classroom theoretical model, which examines the effects of teacher burnout on student academic and behavioral achievement and posits that teachers' social and emotional competencies and well-being support their ability to create and sustain learning

environments that are related to desired student academic and behavioral outcomes (Jennings & Min, 2023). As discussed in Chapter 2, the Mind the Gap framework provides guidance for school leaders regarding the effective recruitment and retention of teachers and examines the following six gaps in an individual's skills (Aguilar, 2018):

- Cultural competence: the ability to understand, appreciate, and interact with people from different cultures or belief systems different from one's own; the skill to navigate cross-cultural differences.
- Emotional intelligence: the ability to be aware of, manage, and express one's emotions; the ability to recognize, empathize with, and manage other people's emotions.
- Capacity: the time and resources to do something. It can also refer to emotional and physical capacity.
- Will: desire, intrinsic motivation, passion, or commitment, typically with an emotional tone.
- Skill: the ability to execute the technical elements of a task. It can be the application of knowledge.
- Knowledge: The theoretical or practical understanding of a subject, which can also refer to information.

In order to retain teachers, it is advisable that school leaders provide professional development that focuses on these potential gaps and provides strategies to close the gaps while creating space for emotionally intelligent and resilient teachers (Aguilar, 2018).

As SET attrition rates increase, Billingsley and Bettini (2019) stated that further studies are needed to investigate the direct impact of SET turnover on SWD. The problem is that the literature has not yet fully addressed how attrition affects the achievement of SWD. This study

aimed to add to the current literature on SET attrition by making a quantitative comparison between SET rates in Georgia and the achievement scores of SWD on the Georgia Milestones Assessment. Although the results of this study suggest that there was no significant difference between special education student achievement scores on the Georgia Milestones Assessments for Ninth Grade Literature and American Literature between those attending school districts with high rates of SET attrition and those attending school districts with low rates of SET attrition, the literature suggests that there is an invaluable relationship between students and teachers.

Because students and teachers influence each other, it is imperative that school leaders be proactive and supportive in addressing the gaps in SETs' perceptions of job satisfaction and provide ongoing professional development opportunities to build teacher capacity. A teacher's perceived level of school support directly impacts their job satisfaction (Robinson et al., 2019). In order to reach a point where teachers experience lower levels of burnout and remain in the classroom, there must be improved initiatives to increase their job satisfaction, including providing meaningful professional development opportunities and a sense of support from their school.

Limitations

This study had limitations that threatened both internal and external validity. In terms of population data, the researcher expected to have a complete data set for 180 school districts. This would mean that SET attrition rates and Milestones Assessment data would be available for each school district for the 2018–2019 and 2020–2021 school years. Unfortunately, a large number of data sets were missing. While SET attrition rates were produced for all school districts, there were significant gaps in the Milestones Assessment data reported by the GaDOE for all school districts. The list of school districts compiled by the researcher, which included all data sets,

contained 88 school districts, 54 districts with low SET attrition rates, and 34 districts with high SET attrition rates. However, because the independent samples *t*-test requires two equal groups, 34 were randomly selected from the 54 school districts with low attrition rates. This resulted in a final participant list of 68 (34 districts with high attrition rates and 34 districts with low attrition rates), which represents a population reduction of approximately 62%. Therefore, the results cannot be considered a true representation of the state of SWD's performance on each assessment.

In addition, the COVID-19 pandemic was considered a significant threat to external validity. The pandemic directly impacted students taking the Ninth Grade Literature Assessment in 2019, as well as those taking the American Literature Assessment in 2021. The pandemic forced an unprecedented change in instruction and classroom locations for all Georgia students. As schools closed, students were isolated and required to participate in virtual classes. While this transition was challenging for all students, educators, and stakeholders, it was especially challenging for SWD and SETs, who were forced to develop creative strategies to ensure that SWD received the services and instruction prescribed in their Individualized Education Program (IEP).

Educators noted several external factors that could impact students' overall achievement during this period, such as environmental factors in the home, access to resources such as devices that provide access to instruction and Internet service, social and emotional support, and the extent to which students' parents or guardians were committed to partnering with the school to ensure student engagement in virtual instruction. As for the Georgia Milestone Assessment, the state canceled the administration of all tests for the 2019–2020 school year. When students returned to the school building for the 2020–2021 school year, the literature assessment, had it

been administered as scheduled, would have been the American Literature Milestone. Therefore, there is concern that reported test scores may be skewed due to gaps in instructional quality during the COVID-19 pandemic.

Another risk to external validity was the inability to generalize SWD achievement. Students receiving special education services, if eligible, are categorized into 13 exceptionalities. These exceptionalities are determined by various factors, such as the student's current level of achievement, cognitive abilities, medical history, and psychological reports. Once eligible, IEPs are developed by a multidisciplinary team of experts to ensure that they are tailored to the student's specific needs. Therefore, it is difficult to generalize the achievement outcomes of all SWD without controlling for exceptionalities.

Recommendations for Future Research

The impact of SETs on the academic and social-emotional development of SWD cannot be disregarded. The overall job satisfaction of a SET impacts student achievement as well as school and district success. The literature suggests that school leaders need to focus on initiatives aimed at improving the overall working conditions of SETs. Effective initiatives include relevant, ongoing professional development, clear job expectations, and a school culture that prioritizes collaboration with GET. However, when it comes to budgeting and prioritizing funds to support these initiatives, there is a need for more quantitative data showing a direct relationship between SET attrition and student achievement.

Future studies should control subgroups or categorize SWD by commonalities such as IQ, primary exceptionality, and/or instructional setting. SETs should also be controlled for in a subgroup that directly relates to the student subgroup. For example, when examining the impact of SETs on the achievement of SWD with autism, the researcher should control for SETs who

teach students with autism in a self-contained classroom as well as students who are taught in a self-contained autism classroom. Although IDEA is a federal law, the setting should also be controlled by a region or district to ensure that the delivery of services to students is consistent for participants as well as the working conditions for SETs.

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