THE DIFFERENCE BETWEEN SCHOOL DISTRICTS WHICH EMPLOY CERTIFICATED SPECIAL EDUCATION ADMINISTRATION AND DISTRICTS WHICH DO NOT

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THE DIFFERENCE IN ACHIEVEMENT BETWEEN SCHOOL DISTRICTS THAT EMPLOY CERTIFICATED SPECIAL EDUCATION ADMINISTRATION AND DISTRICTS THAT DO NOT

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ABSTRACT

In 1975, Congress passed the original Education for All Handicapped Children Act. It was renewed in 1990, 1997, and 2004. During the first revision, the name was changed to the Individuals with Disabilities Education Act of 2004. This Act requires school districts that receive federal funding to provide a free appropriate public education, a term that originates in the Americans with Disabilities Act of 1990. Section 504 of this Act places specific requirements on access to education. The idea is that all persons are entitled to equal access to appropriate education.

The appropriateness of individual educational programs is subjective by nature. The purpose of this study was to determine whether a difference existed in student performance between the Missouri public school districts that employed a certificated, special education administrator and the districts that did not employ a certificated, special education administrator. A difference in performance would indicate that students were receiving a less appropriate education than in districts that did employ a certificated, special education administrator. Conversely, if the hypothesis were true that no difference existed between districts that employed a certificated, special education administrator and districts that did not employ such an administrator, the implications would be that districts should avoid this expenditure. The absence of differences in performance could also have implications for the effectiveness of preservice training for special education administrators. The researcher conducted an independent samples *t*-test of Missouri public school districts that employed a certificated, special education administrator and Missouri public school districts that did not employ a certificated, special education administrator. The researcher sought to compare the differences between achievement levels and post-secondary activities of students with disabilities. The researcher

compared the differences between the Missouri Assessment Program scores and the results of a post-secondary survey of student activities for Missouri public school districts that employed a certificated, special education director and districts that did not employ such an administrator. This study is significant to the body of education professional knowledge because the differences, or lack thereof, could guide Missouri school districts in how the districts choose to staff administrative positions. Additionally, the results of this study could have implications in determining whether districts provide educational opportunities that are deemed as appropriate education in the context of satisfying free appropriate public education. The educational governance should consider the results of this study when making policy, for it applies to the requirements for special education administration.

The findings of the research revealed that district s that did not employ a certificated Special Education Administrator performed comparable to districts that did employ a certificated Special Education Director. These findings reviled that districts that did not employ a certificated Special Education Administrator have not failed to provide FAPE solely based on access to a certificated Special Education Administrator.

CHAPTER ONE

INTRODUCTION

Special education administrators play a significant role in the success of students and, therefore, in the performance of a school district (Strong, 2019). The Office of Special Education and Rehabilitative Services (as cited in Boscardin, 2019) called for a five-tiered strategy of addressing deeply embedded and complex issues. These question systems do not (a) facilitate obvious improvement needs, (b) confront limiting structures that limit opportunities for individuals with disabilities, (c) change policies and practices that put the needs of the system over individual needs, or (d) change mindsets that preserve the status quo. In this study, the researcher examines whether the lack of certificated special education administrators is a limiting structure that limits opportunities for individuals with disabilities.

Theoretical Framework

In this study, the researcher sought to test Williams' (2005) starting gate theory, developed originally in 1962, and Fishkin's (2014) Theory of Opportunity Pluralism. Williams (2005) built the Start Gate Theory on Aristotle's (c. 384 B.C.-322 B.C.) concept of distributive justice. Aristotle theorized the benefit of treating persons with equality of need, or distributing benefits or goods to minimize inequalities. Williams (2005) built on Aristotle's theory that equality goes to the origin, and opportunity plays a significant role in equality. Williams used the illustration of a society that honors the hunter role. In this example, the farmers wanted the opportunity to rise to the hunter role. A fair and equitable contest was conducted. The farmers lacked any experience hunting, so the farmers were unsuccessful in rising in the societal hierarchy. If students were not

provided an equitable education from the start, it would then unreasonable to expect students to have an equal opportunity in the workforce (Williams & Hawthorn, 2008; Williams, 2005). Fishkin (2014) would call Williams' (2005) example a bottleneck. In Fishkin's (2014) Theory of Opportunity Pluralism, the author theorized that opportunities expand the plight of individuals so that the individual controls the directionality and results of his or her life to a higher degree than in the freedom offered by the void of opportunity.

Equal opportunity is a powerful concept. It is also a type of freedom to choose what a person does and what a person becomes. Fishkin (2014) explained how society limits or encourages opportunities. More remarkable than how to equalize opportunism, Fishkin advocated for an examination of societal structures that cause a limit to opportunity. Fishkin named the societal limit a bottleneck in reference to the small opening of a typical soda bottle. Fishkin's theoretical framework was appropriate to use for this study because the researcher sought to examine the difference in student performances when given access to appropriately certificated administration. With this theory, the researcher examined the societal limits of opportunity, and the difference in student achievements. If a significant difference exists, the societal limit of access to appropriately certified administration might be creating a bottleneck, and the school district might not be providing appropriate education (Fishkin, 2014).

Effective leadership indirectly affects district and student performance. School leadership has been shown to have a significant effect on instruction, climate, and outcomes. Although indirectly, the research has shown that leadership has a significant influence on student performance (Hallinger & Heck, 1998; Heck & Hallinger, 2005; Hitt

& Tucker, 2016). The concept of the effect of leadership on district, teacher, and student performance has been widely researched. Thus, it is widely accepted that administrators contribute to the performance of school districts, teachers, and students (Nappi, 2019). Nevertheless, access to appropriately certificated, special education administrators is not available to all students with individual education programs (IEPs; Honey, 2017).

Problem Statement

The Individuals with Disabilities Education Act (IDEA) of 2004, Section 301.101, required school districts to provide a free appropriate public education (FAPE; U.S. Department of Education, 2019a), a term that originates in the Americans with Disabilities Act of 1990 (Maguire, 2017; Yell & Bateman, 2017). Some school districts in Missouri employ certificated special education administrators, while other districts do not employ such an administrator. The difference in performance between districts is unknown. If school districts that employ a special education administrator would be found to have a significant difference in their student's academic success, it would be feasible to argue that a certificated special education administrator would be needed for districts to provide a FAPE. However, if no significant difference exists in student achievement, with or without a special education administrator, one would need to consider the quality or standards of preservice programming for certification.

The Missouri Department of Elementary and Secondary Education's (Missouri DESE's) Missouri Assessment Program (MAP) assesses the achievement of all students (Missouri DESE; n.d.c). The outcomes for students with disabilities are simply not satisfactory (Lockard, 2016). The Missouri DESE (n.d.b) reported that students with IEPs have 19.5% proficiency in English language arts (ELA), and 14.1% proficiency in

mathematics, compared to 49.2% proficiency in ELA and 42% proficiency in mathematics for nondisabled students. Special education administrators are pivotal in ensuring that students have equitable access to appropriate education (Tracy-Bronson, 2018). Therefore, this study was needed to determine whether a difference existed in the performance of students under the leadership of a certificated special education administrator and the performance of students who are not under the leadership of a certificated special education administrator.

Purpose of the Study

The purpose of this casual-comparative study was to test Williams' (2005) Start Gate Theory and Fishkin's (2014) Theory of Opportunity Pluralism. Therefore, in this study, the researcher compared the achievement of school districts that employed a certificated special education administrator to the achievement of school districts that did not employ such an administrator. Whether employing a certificated administrator made a difference in achievement would reflect the equality of opportunity because it would apply to the Start Gate Theory (Williams & Hawthorn, 2008) and Theory of Opportunity Pluralism (Fishkin, 2014).

One of the dependent variables of interest was student achievement. Student achievement was categorized as basic, basic, proficient, or advanced. Student achievement was generally defined as the percentage of students who scored in the top two categories, proficient or advanced, on the MAP in the areas of ELA and mathematics. The other dependent variable of interest was a post-secondary activity, which is generally defined as the percentage of students who are enrolled in post-secondary training or competitively employed, as reported on the Missouri DESE's

(n.d.b) graduation follow up survey as found in the Special Education Profile Report. The independent variable was whether the school district had employed a certificated, special education administrator, which would be defined as districts that the Missouri DESE reported as employing a certificated, special education administrator.

Research Question

1. What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019?
2. What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019?

Null Hypotheses

1. There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP ELA and mathematics achievement levels.

2. There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey.

Significance of the Study

The IDEA (2004) required a FAPE (Cowin, 2018; Trohanis, 2008). However, access to an appropriate education is plagued with disparities. Societal limits (e.g., parental participation, linguistic diversity, and socioeconomics) limited economic, cultural, and social capital limit equality (Moxley, 2016). Limitations negatively affect the access to appropriate education (Moxley, 2016). These societal structures that limit appropriate education could be identified as bottlenecks (Fishkin, 2014). The researcher hypothesized that there would be no significant difference between district performances with or without a certificated special education administrator. If the null hypothesis were to fail to be rejected, the study would then show whether using noncertificated special education administrators would be appropriate for the districts.

Delimitations

This study was delimited to the following factors:

1. Public school districts in Missouri.
2. Data reported for school years; 2015-2016, 2016-2017, 2017-2018, and 2018-2019.
3. The performance data, as reported by the Missouri DESE (n.d.b).
4. Students who have been identified as having an IEP.

5. MAP data as a measure of achievement.
6. The Missouri DESE (n.d.b) post-graduation survey results.
7. Districts outside of Missouri were not considered. The researcher believed Missouri data would be transferable to other states.
8. School districts with extremely small sample sizes were delimited because the Missouri DESE suppressed the data.

Limitations

This study is limited to the following factors:

1. The number of school districts in Missouri.
2. The accuracy of the Missouri DESE (n.d.b) published data.
3. Performance data that was published for school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019.
4. The reliability of the MAP as a measure of achievement.
5. The honest response of students on the post-graduation follow up survey.
6. The number of students without disabilities who had taken MAP.
7. The Missouri DESE (n.d.b) data that might not be transferable to other states.
8. Certifications other than Special Education Administrator were not considered
9. Administrator's years of experience were not considered

Assumptions

The researcher made the following assumptions:

1. The surveyed postgraduates would be truthful in their responses.
1. Administration preservice education contributes to student performance.

2. The participants of the study would be generalizable to other districts in Missouri.
3. The independent sample *t*-test would be a valid statistical analysis if the underlying assumptions were met for the *t* test.

Design Controls

This study was a causal comparative study of the difference between districts that employed a certificated, special education administrator and the districts that did not employ such an administrator. The researcher used an independent sample *t*-test to compare districts that employed a certificated special education administrator and districts that did not employ such an administrator. The data were examined for differences in the achievement of students. Achievement in districts in which a certificated, special education administrator was employed was compared to the achievement of districts that did not employ a certificated, special education administrator. The compared data were collected from students with disabilities who were assessed, using the MAP scores. The Missouri DESE (n.d.b) collected and provided the data with no influence from the researcher. The post-secondary activity of whether the student continued his or her education or whether he or she was competitively employed was compared in districts that employed a certificated, special education administrator against districts that did not employ such an administrator. Responses to the post-secondary activity were voluntary, and individual school districts reported them to the Missouri DESE.

The independent variable of this study was the certification of the special education administrator, for some districts employed certificated employees while other

districts did not employ them. This study could be generalized to compare school districts in other states because all states are responsible to provide a FAPE (Maguire, 2017; Yell & Bateman, 2017). The study was not experimental in nature. To avoid bias, the researcher used existing data from the MAP and post-secondary activity data from Special Education Profile Report (Missouri DESE, n.d.b). The researcher had no access, influence, or bias in the Missouri DESE data. The data that the Missouri DESE reported originated from individual school districts without researcher bias or influence. The Missouri DESE provided the scores. The determination of the certification of the district's special education administrator was ascertained from the data systems manager at the Missouri DESE. The data request provided the schools that employed a special education administrator and the districts that employed a certificated, special education administrator. The Missouri DESE established the procedural control for accuracy. Individual school districts uploaded during each October reporting cycle the data as they related to special education. The Missouri DESE then allowed the school district to review and certify the data as correct (Erwin, 2019).

Definition of Key Terms

Missouri Assessment Program. The MAP is a standardized state assessment that is aligned to state standards. The MAP is administered to all students in Grades 3-8 in the disciplines of ELA and mathematics. Science is assessed in Grades 5-8 (Missouri DESE, n.d.c).

Post-secondary activity. This activity was defined in this study as students who were identified in the Special Education Profile Report as students who are enrolled in higher education or other post-secondary education (PSE) or training program for at least

one complete term or competitively employed or in some other employment for 20 hours per week for at least 90 days (Missouri DESE, n.d.b).

Students with disabilities. These students were defined in this study as enrolled in Missouri's public schools and were identified as having one or more disability as defined by the Missouri DESE (n.d.b).

Certificated special education administrator. These administrators were defined in this study as those whom the Missouri DESE (n.d.a) reported through an educator data request (Appendix A).

Missouri public schools that employ a certificated, special education administrator. These schools were defined in this study as public school districts that the Missouri DESE (n.d.a) identified in the 2017-2018 statistics for Missouri public schools report as employing a certificated, special education administrator.

Summary

This research was based on the crucial theoretical frameworks from Williams (2005) and Fishkin (2014). Williams (2005) theorized that equality must be afforded at the onset of opportunity (Williams & Hawthorn, 2008). Fishkin (2014) theorized that societal structures must be examined for limiting structures. In the context of this study, these theories were applied to the differences in districts. Whether school districts employed a certificated special education administrator might or might not have caused a difference in student performance. Using certificated special education administrators is not implemented uniformly (Hebert & Miller, 1985). Most special education administrators have been promoted from personnel positions and hold deep knowledge regarding the assumptions, practices, and traditions, but they have limited professional

knowledge of educational leadership. This causes many special education administrators to lack the skills and knowledge to lead special education programs (Tracy-Bronson, 2018). Certificated administrators might be necessary for the appropriate education of students with disabilities. The current research on the difference between the achievements of students in districts that employ a certificated special education administrator and the districts that do not employ such an administrator was insufficient. This research was needed to test Williams' (2005) and Fishkin's (2014) theory of societal limits that cause bottlenecks and limits of opportunities for students with disabilities (Williams & Hawthorn, 2008). This research was also needed to determine whether a FAPE is provided for students with disabilities who are educated in a public school district when that district does not employ a certified, special education administrator.

This study is arranged in five chapters, a bibliography, and appendixes. Chapter 2 consists of the review of literature that is divided into the following main headings: Introduction, Background, Increased Education Contributes to Administrator's Performance, Leadership, Administrator Performance Contributes to District Performance, Administrator Performance Contributes to Teacher Performance, Administrator Performance Contributes to Student Performance, General Education Teachers, Special Education Administration, Special Education Administrator Contributes to Student Performance, Achievement of Students With Disabilities, Missouri Assessment Program, Post-secondary Activity, Court Rulings Concerning Provision of FAPE, and a summary. In Chapter 3, the researcher describes the methodology of this study, including the design and statistical analysis and a summary. In

Chapter 4, the researcher describes the findings, and in Chapter 5, the researcher describes the conclusions, recommendations, and implications for practice.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

Few places in today's world are void of some form of school institutions, yet many students fail to benefit from educational offerings (McCowan, 2013). Education is central in governmental rhetoric, and tremendous faith has been placed in the possibilities that education promises. Unfortunately, many people miss these extraordinary possibilities of learning because negligence, prejudice, and narrow-minded thinking accompany them (McCowan, 2013). Existing policies are well known as effective practices, yet they have not been fully implemented (Bryan & Burstein, 2004). Fifty-six percent of students with disabilities and 28% of all students have problems completing educational tasks (Bryan, Burstein, Stiles, Ergul, & Chao, 2007).

This review of the literature covers current research pertaining to leadership and the way in which the access or lack of access to leadership relates to Williams' (2005) Start Gate Theory and Fishkin's (2014) Theory of Opportunity Pluralism (Williams & Hawthorn, 2008; Williams, 2005). In this literature review, the researcher also addresses how leadership contributes to district performance, teacher performance, and student performance. This chapter concludes with reviews of the leadership within the special programs, and the way that special education leadership might contribute to the performance of students with disabilities.

Current research on the right to access education is limited because of the full acceptance that all students have the right to a FAPE. Historical research and federal law have settled on the view that education is an inherent right of all persons. The right to

education is not contingent on the disability status of a student. However, the nature, form, process, and experiences of education remain nebulous. The grounds for upholding these rights are far from resolved (McCowan, 2013). The theoretical framework is Williams' (2005) Start Gate Theory (where at the start of opportunity, all things should be equal), and Fishkin's (2014) Theory of Opportunity Pluralism (in which the theorist seeks to examine the possibility that organizational structures limit opportunity; Williams & Hawthorn, 2008). The areas of literature that the researcher intentionally did not report in this review were special education compliance of administering special education programs. Special Education compliance adheres to the required procedure and is not necessarily directly linked to student performance. This area is critical to special education, but it is sufficiently researched and is not directly related to the researcher's topic. The focus of this literature review is the administration of special education and the achievement of students with disabilities. For the purpose of this study, achievement refers to what a student knows and what a student does. Standardized assessments measure academic knowledge, and the student's activities after graduation indicate what he or she does with that knowledge after receiving a public education.

Background

The American educational system has not always provided an education that is meaningful or appropriate for all students. Williams (2005) wrote about how equality must begin with access to opportunity (Williams & Hawthorn, 2008). However, in the Education for All Handicapped Children Act of 1975, the U.S. Congress attempted to correct this downfall by requiring public school districts to provide appropriate education to students with disabilities. The Act was updated in 1990 and was renamed the IDEA

(2004). The IDEA was last renewed in 2004. The IDEA articulates six expectations in educating students with disabilities: (a) an individualized education program (IEP), (b) a least restrictive environment (LRE), (c) an appropriate evaluation, (d) parent and teacher involvement, (e) procedural safeguards, and (f) a FAPE. The IDEA does not have provisions for a school district to examine societal structures that limit opportunity (Cowin, 2018, Fishkin, 2014; Trohanis, 2008).

Individual education is a yearly educational programming for which the goals of individualized instruction and the amount of the individual instruction necessary to meet those goals are considered. An IEP begins with a report of the present level of educational and functional performance, and then it is used to address the needs identified in the present level of educational and functional performance. The multidisciplinary team writes the educational program and considers many other items of educational access (e.g., transportation, assisted technology, the location of the instruction, and the appropriateness of participation in physical education or extracurricular activities). The IDEA (2004) Subchapter II Section 1436.d and 1414.d has requirements (USDA, 2019c). In general, the IEP is a specialized educational curriculum that a multidisciplinary team developed; the team is composed of a general education teacher of the child, a special education teacher, a person who can interpret the results of standardized assessments, a representative of the local educational agency (LEA) and the parent or guardian of the student. This educational program is designed to provide a FAPE (Debbag, 2017; Dragoo & Library of Congress, C.R.S., 2018).

The IDEA (2004) also requires a student to be educated with the general student population of students to the maximum extent that is appropriate considering the unique

needs of the student. This mandate is referred to as the LRE. It means students with disabilities are educated with nondisabled students to the maximum extent appropriate. An LRE includes students with disabilities who are in care facilities, both private and public. Consideration of the individual needs of students must be applied before the removal of students with disabilities from the general population (Cowin, 2018). Consideration must also be given to the level of achievement in the general education environment when provided with supplemental aids and services. If satisfactory achievement cannot be obtained, even with supplemental aids and services, then inclusion to the maximum extent is likely not appropriate (Dragoo & Library of Congress, C.R.S., 2018; Underwood, 2018).

An appropriate evaluation requires that the evaluation meet the criteria established in the IDEA (2004) Subchapter II, Section 1414 (USDA, 2019c). In general, the evaluation should start with a request by the parent/guardian or LEA. After the referral, the evaluation must follow a predetermined state timeline, use multiple indicators for determining disability, and use a multiple disciplinary team, including parents (Dragoo & Library of Congress, C.R.S., 2018). Evaluations are to be conducted to determine if the student meets the criteria of a student with a disability. A variety of agencies may request an initial evaluation; however, parent consent is required to conduct the evaluation. Consent is required for the evaluation, as well as services and placement into special education. Parents and teachers are involved in the evaluation process and are required to attend meetings (Dragoo & Library of Congress, C.R.S., 2018).

Procedural safeguards are a group of regulations for conducting evaluations and creating IEPs. The procedural safeguards are articulated in a document provided to

parents. Providing parents with the procedural safeguards document ensures that the parents are informed of their rights. The procedural safeguards provide definitions for when and how the identification of a disability is conducted. These regulations include parental access to student records, parental notice of educational changes, communication in the parent's native language, the opportunity for mediation and complaint, provision of due process requirements, the state educational agency (SEA) model forms, discipline protections, and transfer of rights (Dragoo & Library of Congress, C.R.S., 2018; Missouri DESE, n.d.a).

The constitution of a FAPE has been debated in multiple court cases. The area of ambiguity has been defining appropriate education. In each case, the court has been required to interpret whether a district has met the burden of appropriate education. Appropriate education is dependent on the individual student and the student's disability. The LEA designs the appropriateness of an educational program in conjunction with parents. However, in times of disagreement regarding what constitutes appropriate education, the final determination is left to the LEA. The LEA then has the burden to provide a FAPE by ensuring the appropriate staffing of paraeducators, teachers, and administrators. School administrators have a profound impact on student achievement levels because they provide guidance and direction. This direction is particularly vital in times of change or reorganization. As an organization, the school district requires guidance in creating a positive learning environment in which teachers are supported and directed, for a school culture affects student outcomes (Mackey, 2016; Uysal & Sarier, 2018).

The school principal is no longer a traditional manager. Effective school administration recognizes the benefits of teacher professionalism and the need for autonomy. The school administrator has evolved into a leadership role. School leaders are critical in a productive school district and overall student achievement (Golmen, 2019; Nappi, 2019). School leaders must also recognize the impact of the school environment and its effect on achievement. Administrators must recognize the skills and weaknesses of teachers to be able to support and guide them to be effective (Mackey, 2016; Uysal & Sarier, 2018). Educational leadership—whether from the superintendent, principal, or any central office administrators—is a critical variable in running effective schools that meet policy-based educational targets (Barreau & McIntosh, 2020; Khumalo, 2019; Lick, Clauset, & Murphy, 2013; Rinehart, 2017).

Framing Leadership

Frames are schemas of understanding that allow consideration from differing points of view. Frames are mental windows, maps, or tools that leaders use to interpret, understand, or negotiate a situation. The leader develops conceptual maps to view and react to situations (Golmen, 2019; Bolman & Deal, 2008; Summey, 2017). The essence of framing leadership is to match situational clues with a well-structured response. Leaders communicate and set the example through framing experiences within the organizational vision (Golmen, 2019). Bolman and Deal (2008) identified four frames that included the structural frame, human resource frame, political frame, and symbolic frame.

The political frame allows leaders to view organizations as competitive spaces of scarce resources, opposing interests, and struggles for power and advantage. The

organization is a world where people set agendas, negotiate, bargain, compromise, and resolve conflicts through high creativity and innovation. Bolman and Deal (2008) used the relationship between the Federal Bureau of Investigation and the Central Intelligence Agency (CIA) to illustrate this point. The conflict between the agencies resulted from President Roosevelt's decision to provide foreign intelligence responsibility to William Donovan, head of the CIA Office of Strategic Services. Both agencies, the Federal Bureau of Investigation and the CIA, had friction for years as they fought for resources from Congress and the White House. This example demonstrates how policy, organizational structures, and resource allocation shape how an organization evolves.

The structural frame focuses on the architecture of the organization. Structure is the framework in which task are completed (Nappi, 2019). The structural approach is often represented in organizational chart hierarchies and procedures in an institution. The structural framework gives systems the challenge of designing, maintaining, and implementing basic tasks (Defoe, 2013). However, the leadership challenge is the structural frame that requires administrators to use power and authority to gain the adherence of policy (Bolman & Deal, 2008; Defoe, 2013; Summey, 2017). Training in the structural frame is focused on the completion of task rather than the development of employees (Silveira-Zaldivar & Curtis, 2019).

The human resource perspective emphasizes the need for leaders to understand people and their strengths and weakness. Administrators seek to develop the person (Nappi, 2019). The support at an individual level includes consideration of administrators who must understand the reasoning, emotion, desires, and fears of the organization's employees. The organization supports individual by involving and supporting the

employee's family (Sebastian, 2019). Through the human resource model, an administrator focuses on the contextualized fit between a person and the organization. The purpose of the human resource frame is to build a framework in which the employee and organization mutually benefit from the employment relationship. The image of leadership is to empower people then align organizational needs with human needs (Bolman & Deal, 2008; Defoe, 2013, Nappi, 2019).

The symbolic frame is culturally driven and concerned with meaning. The symbolic frame is sensitive to the history, back-story, and connotation of items and events. Often items have more value because of sentimental reasons than the actual value. Old high school buildings that were built in the thirties are still used today, but they are used not because they are efficient, but because they hold holds sentimental value to the stakeholders of the district. Some histories create a meaning that is often not congruent with the denotation of items or events. For-profit companies use the symbolic frame to market products. The creation of status symbols might increase buyer motivation as much as the actual product (Bolman & Deal, 2008; Summey, 2017).

Most special education administrators have come up through the ranks from a special education personnel job. This experience affords knowledge of assumptions, practices, and traditions of special education. Administrators who have only experiential credentialing have limited professionalized knowledge. These individuals lack skills in leadership or knowledge of the way to apply the frames of leadership (Tracy-Bronson, 2018). In this study, the researcher examines the differences between districts that employ a certificated special education administrator and districts that do not employ such an administrator. In this study, the researcher sought to discover whether a

difference existed and whether it affected equality at the inception of opportunity. The researcher sought to discover whether William's (2005, 2008) Start Gate Theory and Fishkin's (2014) Theory of Opportunity Pluralism would apply to the lack of certificated special education administrators.

Ethical Leadership

Ethical leadership includes the moral principles that an administrator or leader uses to express a sense of duty and obligation to the group. Effective leaders behave ethically and within ethical norms of the organization (Nappi, 2019). The values and beliefs of the moral right or wrong shape them. Specific vital components can be universally used to create ethical leadership across varied domains of an organization. These mechanisms should inhabit the moral compass of leaders to form the core of ethics (Hegarty & Moccia, 2018). Ethical leadership is based on a robust framework that sets rules that govern them in deciding on a specific situation (Hegarty & Moccia, 2018; Northouse, 2010). Some of the paradigms for the analysis of ethical behavior include the ethic of justice, the ethic of critique, the ethic of care, and the ethic of the profession (Shapiro & Gross, 2013).

The ethic of justice suggests that all procedures in decision making must adhere to the equal sovereignty of the people. Hegarty and Moccia (2018) insisted that, in workplaces, organizational justice is a factor in work attitudes and behaviors. Employees seek equality at work by comparing their performances and remuneration with those of others. Sometimes, a person might give up some of his or her rights for the good of the organization, but mediational relationships help navigate between the needs of the organization and the needs of the individual (Sebastian, 2019; Vogel, 2012). Special

education is seated deeply in the requirements of the IDEA (2004) to provide a FAPE (Strong, 2019). This is the ethic of justice. The bottom-line for legal principles and formal policies is rationality in judging people; the ethic of critique provides a critical view of legal parameters and formal policies. The ethic of justice emphasizes a commitment of human freedom, whereas the ethic of critique focuses on the ethical behaviors that address inequities among people (Shapiro & Gross 2013). The theoretical framework of Fishkin (2014) is seated in the ideology of the ethic of justice. If societal opportunities are limited to individuals, then the limit violates Fishkin's' (2014) Theory of Opportunity Pluralism and the ethic of justice (Shapiro & Gross, 2013).

The ethic of critique seeks to question the structures of the ethic of justice. Critique is used to question how society has silenced a demographic of people, in this case the special education population. Fishkin's (2014) Theory of Opportunity Pluralism is deeply seated in the ethic of critique. Opportunity Pluralism is used to question whether the structure of society has limited opportunity for some. This study applies the critique of Fishkin (2014) in the context of access to a certificated special education administrator (Shapiro & Gross, 2013; Sebastian, 2019).

The ethic of care stresses the need to nurture the emotional and moral development of people. Education is necessary for development of knowledge and morals. The ethic of care places people at the center of ethical decision making, and emphasizes relational attributes such as trust and self-efficacy (Sebastian, 2019; Vogel, 2012). In this study, the researcher sought to examine whether the lack of certificated special education administrators creates a societal limit.

In contrast, the ethic of profession integrates the three aforementioned paradigms to ensure that there is a commitment of principles. The ethic of profession was developed as organizations developed behavioral expectations that were imposed by participating in the organization. Williams's (2005) Start Gate Theory was applied to seek equal opportunity at the inception of opportunity (Williams & Hawthorn, 2008; Williams, 2005). "Do no harm" is a concept found in the IDEA (2004) that promotes educating children with disabilities in meaningful ways so that they become self-sufficient adults who can contribute to society (Barnard-Brak, Schmidt, & Almekdash, 2018). If a student is denied access to the ethic of profession as it applies to education, Fishkin's (2014) Theory of Opportunity Pluralism might be lacking (Shapiro & Gross, 2013).

Leadership Styles

Educational leadership—whether from the superintendent, the principal, or any central office administrators—is a critical variable in running effective schools that meet policy-based educational targets (Barreau & McIntosh, 2020; Khumalo, 2019; Lick et al., 2013; Rinehart, 2017). Leadership style effectiveness differs.

Transactional Leadership

The transactional leadership style is focused on motivating followers by providing rewards that are contingent on meeting given criteria. Transactional leadership is a give and take model of management (Golmen, 2019). Rewards must be earned. An employee must work hard to get excellent compensation. Conversely, poor performance will not achieve the preferred compensation (Cornman, 2017; Kilker, 1994). Transactional leaders set targets and communicate expectations of outcomes. In transactional leadership, feedback is used to let teams, groups, or subordinates to know their progress towards

achieving specific goals. However, such leaders might be keen on those who are not meeting performance standards (Nazim & Mahmood, 2016). Notably, transactional leaders are management-oriented as opposed to transformational leaders who are leadership-oriented.

Transformational Leadership

Transformational leadership focuses on shared visons and intentional change (Golmen, 2019). Transformational leadership is more desirable to sustain long-term change. Transformational leaders are known to boost morale within the culture and to encourage subordinates to work toward a collective objective (Cornman, 2017; Sime, 2019; Graham, Ziegert, & Capitano, 2013; Kilker, 1994). Transformational leaders not only seek to obtain organizational success, but also grow capacity within the employees. Certain personality traits (e.g., extraversion and agreeableness) are used to predict transformations in leadership. This type of leadership style serves as a model for positive individual-focused leadership because it insists on the motivation and development of followers. According to Flynn (2016), the transformational leader demonstrates behaviors that gain buy-in from subordinates. Transformational leadership differs from transactional leadership, for transactional leaders focus on rewards and benefits, not intrinsic values that are used by the transformational leader. The roles of a transformational leader are to assess a follower's motive, meet his or her needs, and treat him or her equally (Lamm, Sapp, & Lamm, 2016). In special education, transformational leaders lead by a collective consensus regarding professional responsibilities. Transformational leaders gain consensus on core beliefs like equal opportunity. Preference is given to values, accountability, and intrinsic motivation over bureaucratic

structure. This lends to teacher empowerment through teachers being members in the decision-making process (Balyer, Ozcan, & Yildiz, 2017; Carter, 2011; Hargreaves & Shirley, 2009). Transformational leadership is necessary to lead successfully special education departments, for shared leadership assists on preventing burnout of special education administration and fulfilling the expectation of team decisions during IEP development (Carter, 2011; Dahlstrom-Hakki & Alstad, 2019).

Change Leadership

Change leadership is focused on building school leaders' capacity to succeed in implementing initiatives or school reform. Lasting change happens when individuals have a clear understanding of self (Golmen, 2019). The leadership approach is based on the transformation leadership model such that, for one to change an institution's processes, one must begin with sharpening the capacities in different directions (Arokiasamy & Huam, 2017). Wagner et al. (2006) wrote that leaders must conceptualize why it is difficult for organizations to transform even when there is a compelling need to do so. Furthermore, leaders should understand why it is difficult for followers to accept change, even in circumstances that they intend to shift. Change leadership is a wakeup call to an educational system that was not initially designed to deliver the results that the current learners demand. The failure in the American education system is because of the misunderstanding of the nature of the education issues that the country faces. Therefore, change leadership requires that leaders lead change initiatives within an existing paradigm and, simultaneously, preserve effective systems. The No Child Left Behind (NCLB) Act of 2001 is one example of a change initiative that was meant to reinvent American public schools (Wagner et al., 2006). The case in point is that the NCLB Act

(2001) was left behind and was replaced with the Every Student Succeeds Act (ESSA) of 2015. The act allows for greater control and flexibility at the state and local levels, which has in turn evolved from initial implementation (Edgerton, 2019). The challenge of change leadership requires leaders to develop new skills at various levels and to work in unique ways to lead necessary organizational transformations (Wagner et al., 2006). As a key to successful leadership, special education administrators identify skillful change leadership to improve instructions for students with disabilities and to influence positive change for students (Hussey, 2019).

Administrator Performance Contributes to District Performance

Educational leadership—whether from the superintendent, the principal, or any central office administrators—is a critical variable in running effective schools that meet policy-based educational targets (Barreau & McIntosh, 2020; Khumalo, 2019; Lick et al., 2013; Rinehart, 2017). The administrative team's role is to facilitate faculty empowerment and community consensus (Barreau & McIntosh, 2020). In this context, school principals affect a school's effectiveness, and they affect, indirectly and with statistical significance, the achievement of students. Several researchers supported a leadership model that is comprised of two central aspects that contribute to overall institutional effectiveness (Barreau & McIntosh, 2020; Khumalo, 2019; Lick et al., 2013; Rinehart, 2017). The role of the administration is to affect the overall effectiveness of a school district; the role of leadership is to facilitate the process of developing the school's mission as defined by policy objectives. The main task of leadership is concerned with proposing objectives and ensuring that broader or higher-level policies are being met at the state and individual school level. Successful leaders must work with stakeholders to

affect the environment in such a way that it favors the attaining of goals and objectives (Lick et al., 2013). The primary fashion in which administrators achieve this influence is through their professional relationships and leadership of teachers (Barreau & McIntosh, 2020). Administrations' leadership of teachers as fundamental stakeholders affects the direct outcomes and results of the school district. Teacher commitment is one area that leadership influences. Today's educational institution's administrators who demonstrate transformational leadership practices increase the teacher commitment to the teaching profession, thus reducing turnover, which is known to impact overall district performance (Khumalo, 2019; Rinehart, 2017).

Leadership involvement in curriculum development and instruct8ion influences successful school outcomes. The relationship between school leadership and school performances is well documented. A high demand is placed on the school administrator to ensure that schools deliver quality curriculum to all students (Montecinos, Bush, & Aravena, 2018). The leader's involvement in curriculum development includes not only delineating material curriculum, but also making adaptations of the curriculum to the needs of a specific school environment. The preponderance of evidence suggests that educational administrators and leaders are the crucial variables in building effective schools (Heck & Halliger, 2005; Rinehart, 2017).

Administrator Performance Contributes to Teacher Performance

School administrators' behavior has a significant influence on teacher performance through the construction of a positive school climate conducive to meeting educational objectives. One of the primary channels of implementing positive school climate effectively is successfully managing teachers as one of the most critical

stakeholders. Previous research has shown that effective administrators support communication, trust, and respect among teachers, with behaviors that have a significant effect on teacher performance and satisfaction (Marcoulides & Heck, 1990; Van Beck, 2011). Wahlstrom and Louis (2018) indicated that a correlation exists between the effectiveness of teachers and the presence of strong and well-defined leadership; the factor of trust in leadership was also identified as playing a significant role. Wahlstrom and Louis (2018) noted that the quality of administrative leadership affects all levels of faculty and staff outcomes. Wahlstrom and Louis also identified staff confidence as an affected outcome.

Other research examined the role of administrator-stakeholder communications, noting that school administrators must be able to communicate effectively, particularly with stakeholders, to create learning environments where a teacher is encouraged to maintain a process of continued learning, which eventually benefits students and achieves educational objectives (Uysal & Sarier, 2018). Scholars proposed teacher self-efficacy as a teacher quality that is correlated to teacher performance Nir & Kranot, 2006; Vittek, 2015). Administration and school leadership were found to be related to positive teacher efficacy. Therefore, the leadership effect on teacher efficacy increased successful outcomes in teacher performance as well as their work satisfaction with their positions (Bandura, 1994, 1997; Nir & Kranot, 2006; Vittek, 2015). Balyer et al. (2017) and Çalik, Sezgin, Kavgaci, and Kilinç (2012) similarly found a direct correlation between administrative leadership and collective teacher efficacy. Another area in which administrators have a significant influence that directly affects teacher outcomes is in teacher retention decisions. These teacher retention decisions demonstrate that quality

administration can result in overall better retention, and subsequently improved teacher outcomes (Boyd, Grossman, & Ing, 2011; Zhang & Zeller, 2016).

Administrator Performance Contributes to Student Performance

Research has shown that the leadership of school administrators is second only to individual teachers when it comes to student achievement, a relation that was underscored in the previous section in which the researcher highlighted the multiple direct impacts that administrators have on teachers (Fullan, 2001; Marzano, Waters, & McNulty, 2005). The Boston School District brands itself as one of the Nation's best, large school districts; however, a recent decline in performance warranted a 10-year study from 2007 to 2017. The findings included that a contributing factor was change in school leadership. The Boston School District had five administrators between 2007-2017 (O'Keefe, King, Aldeman, 2019). According to Brown (2016), the accountability of school districts has increased in recent years, highlighting the general interest in gauging and evaluating school leader's performance through student outcomes. Balyer et al. (2017), Cobanoglu and Yurek (2018), Pierce (2019), and Hoy, Sweetland, and Smith (2002) demonstrated that school administrators' performance has a significant impact on the collective efficacy of individual schools within school districts. The principal is that of a fundamental link between district leadership and policy and the efficacy and quality of student learning, placing the principal in a position as a fulcrum between policy and practice (Leithwood & Jantzi, 2008).

This role of the principal is a multifaceted one that entails not only a direct application of policy, but also of leadership values. Gentilucci and Muto (2017) discussed the way—in addition to influencing outcomes by demonstrating leadership among

teachers—that principals can also have a direct impact through their interactions with students. In this manner, the principal's role goes beyond implementing institutional policies; it extends to direct interaction with and management of students by transmitting confidence and trust, which has repercussions on overall student academic achievement (Gentilucci & Muto, 2017).

One of the areas in which student outcomes have most clearly demonstrated the impact of the educational administrator is that of special education (McGrath, 2018). The role of the special education leader is not different regarding the impact on students; however, the methodology is significantly different from regular education curricula. In the case of special education, principals might feel unprepared for the leadership of special education programs, partly because of the specialized curricular knowledge required, and the legal guidelines that vary from state to state. Such programs are ordinarily subject to change per advances in applied special educational methodologies. In this sense, principals are at a disadvantage in procedures and guidelines of special programs. Even more importantly, principals are ill equipped to lead instruction that is designed for students with disabilities. Nevertheless, numerous researchers have sought to delineate guidelines and resources that are already implemented to orient principals in this respect (Balyer et al., 2017; Billingsley, McLeskey, & Crockett, 2017).

Another challenge of special education is that principals have difficulty evaluating special education teachers because special education instruction looks very different from general education classrooms; and an administrator's academic training and preparation only slightly touches upon special education (DiPaola & Walther-Thomas, 2003). To this extent, researchers have suggested that special education administrators could be useful

in providing techniques in assisting principals with teacher evaluations (Rinehart, 2017). Until now, research has indicated a continued, and concerted effort is needed on the part of principals to be attuned to the resources for special education as well as forms of early intervention that will affect the outcomes of students (Pulkkinen, Räikkönen, Pirttimaa, & Jahnukainen, 2019; Pulkkinen & Jahnukainen, 2016).

Certifications

The requirements for certification as an administrator of Special Education requires five criteria to have been met.

1. "The applicant shall request and obtain the recommendation of the designated certification official for a state-approved master's program or higher in educational leadership for the preparation of principals;
2. The applicant must possess or be eligible to possess a certificate of license to teach in an area of special education or student services;
3. The applicant must possess two (2) years of teaching experience in special education or student services;
4. Obtain a recommendation for certification from the designated official of a college/university approved by DESE; and
5. The applicant must achieve a score equal to or in excess of the qualifying score on the building-level administrator's assessment(s) as defined in the rules promulgated by the board. The official score report shall be submitted to DESE" (Missouri Secretary of State: Code of Regulations, 2020).

The certification process for administrators requires a minimum of a master's degree from an accredited university (DESE, 2020a) Missouri DESE has published five standards in which universities educate pre-service administrators and the administrator should show competency. Standard one requires an administrator to develop and implement a vision that guides the learning process of students. Standard two ensures the administrator is capable of leading teachers to develop curriculum that is viable and effective. This standard also requires the administrator to promote the professional development of teachers and staff. Standard three requires the administrator to be competent in management of the operation, including personnel and district resources. Standard four relates to the human frame (Bolman & Deal, 2008) element of professional relationships and ensuring equitable opportunity for student learning. Finally, Standard five centers around innovation. The administrator is expected to foster innovative growth in themselves, faculty and staff (DESE.2020d)

The certification of special education administrators includes the administrative process as well as additional certification. The Counsel for Exceptional Children (CEC) recommends 21 competencies that they deep essential for Special Education Administration to be proficient (Fan et al., 2019). Certification of special education administrators does not require additional certification assessments but does require recommendation of an accredited university. The certification program varies from university to university but requires additional course work specific to special education issues. Missouri State University requires 15 college hours that consist of nine hours of instruction, two hours of lab and four hours of practicum and internship experiences (Missouri State University, 2020)

Special Education Administration and General Education Teachers

The administrator of special services also assists the general education teachers in educating students with disabilities. However, barriers prevent effective inclusion practices. These barriers include (a) the difficulties of shared responsibilities of students with disabilities, (b) personality conflicts of the general and special education teachers as they work together, and (c) appropriate training in effective inclusion models (Griffith, Jones, Winship, & Howard, 2019). Griffith et al. (2019) concluded that administrators must be aware of the use of a variety of inclusion strategies. Although these barriers do exist, school administrators have a responsibility to create a positive learning environment (Ruppar, Roberts, & Olson, 2018). If not corrected, these barriers might create a societal limit to equal opportunity (Fishkin, 2014). In many situations, the general education classroom is considered the LRE. Therefore, support services are provided in the general education class. Many different methods are used to satisfy the burden on LRE. One method that is growing in popularity is coteaching. Coteaching is an educational environment that includes a general education teacher who is certificated in the content area and a special education teacher who is certificated to instruct students with disabilities (Alsarawi, 2019; Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010). In the coteaching model, the special education teacher is expected to have knowledge of the general education curriculum. The special education teacher is expected not only to be proficient in interventions and differentiation, but also to provide effective instruction of state standards (Friend et al., 2010; Goodrum, 2014; Murawski, 2017).

Meeting high educational expectations and providing LRE is difficult for the special education teacher and the general education teacher in an inclusive environment

(Silveira-Zaldivar & Curtis, 2019). The difficulty of inclusion and coteaching is rising along with the dramatic increase of students with disabilities that negatively affect social skills. Autism Spectrum Disorder has highlighted deficits in many life activities, including social skills (Locke, Anderson, Frederick, & Kasari, 2018; Marder & DeBettencourt, 2015). Social Skills deficits result in maladaptive behaviors at a significantly higher rate than their nondisabled peers do. Maladaptive behaviors include aggression, compulsive behaviors, tantrums, and even elopement. Self-injury impulsivity and other destructive and maladaptive behaviors are exhibited in nearly one-third of children with autism. This confounds the difficulty of inclusive environments (Dominick, Davis, Lainhart, Tager-Flusberg, & Folstein, 2007).

Training is also a barrier to inclusion. Many times, the lack of training or the unwillingness to be trained, create barriers to effective inclusion practices. Some teachers report that regular education teachers sometimes do not want interventions; they want the child to be out of their classroom (Silveira- Zaldivar & Curtis, 2019; Roberts, Ruppar, & Olson, 2018). Staff attitudes towards increased work and atypical students cause a deficit in provisions of LRE. General education teachers also reported the lack of effective administration as a barrier to inclusion, stating that a disconnection exists between administrators who make decisions regarding inclusive practices and the teachers who actually do the inclusion. Other staff members reported that their administrator was very supportive, and that their school had been very willing to make inclusion work (Silveira-Zaldivar & Curtis, 2019).

Administration of Special Education

Fan, Gallup, Bocanegra, Zhang, and Wu (2019) wrote, "The importance of special education leadership competencies cannot be overstated" (p. 55). Attention to the leadership of special education has recently increased (Crockett, Becker, & Quinn, 2009; Rinehart, 2017; Thompson, 2017). The oversight of special education programs often encompasses curriculum, related services, personnel, budgets, and coordinators. The knowledge base to support these programs is essential for effective administration. The Council for Exceptional Children (CEC) released professional preparation standards for administrators of special services. The CEC standards include implementing valid and reliable assessments, applying curricular content knowledge, overseeing services and student outcomes, pursuing research and inquiry, providing effective leadership, creating policy, demonstrating professional and ethical standards, and collaborating with appropriate stakeholders. These competencies have been identified as competencies required for the effective administration of special programs (Fan et al., 2019). Administrators and directors of special programs have the responsibility for providing a FAPE. The administrator is also a collaborator between general education and special education departments, which requires at least a basic knowledge of general education pedagogy. Training should provide directors with a comprehensive view of district curriculum and the delivery of educational services (Fan et al., 2019; Miller, 2018). Professional development should be available to increase the capacity of administrators. The administrators of special services are also accountable for recruiting, hiring, and retaining special education personnel. School administrators are critical in improving teachers' knowledge and increasing teacher efficacy (Billingsley, 2005).

The role of the administration of special services is complex. The administrator must guide the district in compliance with requirements established by the SEA and the federal laws regarding disabled persons, as described in the Americans with Disabilities Act (1990). In a comprehensive manner, the IDEA (2004) governs the processes that an administrator uses to accomplish his or her tasks; therefore, a deep understanding of this law is needed. In addition to the laws themselves, administrators must understand the court holdings and application of the laws as courts have sought to give rulings on what is FAPE. The interpretations and guidelines of what constitutes a FAPE change regularly; therefore, administrators must also remain current in the special education political theater. In addition to legal and compliance responsibilities, a special education administrator must also lead teachers in pedagogy and effective instruction to challenge and educate students (Summey, 2017).

Preservice training varies from state to state. In Missouri, public school districts are not required to employ a special education administrator. However, in Missouri's state plan for special education, the personnel qualifications do require certification for administrators of special education. To be certificated in special education administration, the candidate must possess a special education teaching certificate, have obtained a master's degree in the field of education, and complete a certification program from an approved educational institution (Missouri DESE, n.d.a). In addition to the preservice instruction, the CEC is a professional organization that provides guidance and direction to the provision of special education services. The CEC has published advanced preparation standards for special education administration. Fan et al. (2019) used these standards to examine the competencies for special education directors.

Effective administration requires skills beyond the classroom. Summey (2017) explored four themes necessary for effective special education administration. Theme 1 was that administrators should have students as their focus. The administrators should understand and address student needs and make adaptations to ensure success. Theme 2 was a collaborative effort that trains and empowers others to understand student needs, special education law, and procedures. Theme 3 was effective communication with families and stakeholders with the intent to build trusting relationships. Theme 4 was that effective administrators of special education should stay current with best practices to support students. One can remain current with best practices by participating in professional organizations and collaborating with other special education administrators (Summey, 2017).

Special Education Administration Contributes to Student Performance

Students with disabilities are receiving specialized instruction because they have a disability. Therefore, it is reasonable that students with disabilities score lower than their nondisabled peers do; however, some of the achievement gaps are a minimal 3.6 points while others are over 47 points. The variability of scores suggested that factors other than the students' disabilities have influenced the scores (Goodrum, 2014). The variation in scores might be because of the provision of services. In a study of Midwestern students, more than 200,000 students were receiving special education services. The variability in achievement might indicate that students have not received the same educational access (Goodrum, 2014).

Administrators must complete 21 primary responsibilities; however, only five of those responsibilities include curriculum and instruction. The curricular responsibilities

are (a) developing and implementing an administrative plan that supports the use of instructional and assistive technologies; (b) providing ongoing supervision of personnel working with individuals with exceptionalities; (c) advocating for and implementing procedures for the participation of individuals with exceptionalities in accountability systems; and (d) applying content knowledge of statistics, assessment, and evaluation for data-based decision making (Fan et al., 2019). Marzano et al. (2005) found that a strong focus on curriculum, assessment, and instructional practice affects the achievement of students. The special education administrators' impact on student performance is dependent on the level of the administrator's participation in teaching and learning (Fan et al., 2019).

Achievement

Measurements of achievement are an essential element for policymakers, educators, and the public. Reports of performance are available for multiple demographics. The Programme for International Student Assessment aims to assess international achievement in mathematics, reading, and science. However, the heterogeneity of backgrounds and cultures amplifies the fact that international educational systems are difficult to compare (Montt & Borgonovi, 2017). In the United States, the focus on school improvement and accountability is coupled with concerns about equitable access for all students (Urick, Wilson, Ford, Frick, & Wronowski, 2018). The National Center for Education Statistics (2020) produces the National Assessment of Educational Progress, whose results are published as the *Nation's Report Card*. Beginning in 1969, the National Center for Education Statistics has reported national academic performance on the National Assessment of Educational Progress for reading,

mathematics, writing, the arts, civics science, economics, geography, and American history (Koenig & Edley, 2017).

The NCLB Act (2001) required states to assess the achievement of all students. The assessment of students included the achievement assessments for students with disabilities. Performance indicators included the MAP and post-secondary activities. These accountability measures have increased the focus on student academic progress. Although these expectations were clear and well known, little was done to change the organizational structure or support to districts, so these expectations were mostly unmet (Yell, Shriner, & Katsiyannis, 2006). ESSA (2015) has replaced the NCLB Act (2001), causing questions to arise regarding whether the new legislation will continue to prioritize measurements of student achievement (Guirguis & Pankowski, 2017). After the NCLB Act (2001) was supplanted by ESSA (2015), the policymakers, researchers, and the public began to question standardized assessments as a valid indicator of school effectiveness. ESSA is relatively new in the scope of educational law. With the Act, Congress sought to identify the indicators of school districts' efforts to increase the students' understanding, inquiry, and reasoning skills. That is not to say that ESSA has abandoned assessments (Urick et al., 2018).

The academic performance of districts varies greatly (Spaniol, Shalev, Kossyvaki, & Mevorach, 2018). Administrators might be the variable in achievement differences (Goodrum, 2014). Although lower performance in comparison to nondisabled peers is to be expected, variances of special education achievement should be minimal. The function of specialized instruction is the acquisition of compensatory strategies. Effective special

education programs equip students to be successful in high-stakes testing (Kurz, Elliot, Behby & Smithson, 2010).

Fifty-six percent of students with disabilities and 28% of all students have problems completing educational tasks (Bryan et al., 2007). The lack of motivation and poor attitudes can be attributed to the lack of academic tenacity; for students with disabilities, problems can also be attributed to skill deficits, including attention span, memory, language, or organizational skills. However, student attributes are only part of the issue. The individual teacher almost solely governs task completion expectations, for only 35% of districts have established a homework policy. However, most of the existing policies are well known as effective practices, yet they have not been fully implemented (Bryan & Burstein, 2004).

Measuring performance with standardized assessments has often come under scrutiny. Most instruments are developed with little to no validation for a student with learning disorders, Attention Deficit Hyperactivity Disorder, or autism spectrum disorder (ASD; Dahlstrom-Hakki & Alstad, 2019). Assessing students for content knowledge is littered with the complexities of executive function and language skills. Although accommodations are sought to neutralize the impact of disability effect on content knowledge, the standards for educational and psychological testing recommended reconsidering of the validity of assessments (Kane, 2001). Standardized assessments are not going away; therefore, assessing the evaluation process and its potential difficulties for students with disabilities will continue (Dahlstrom-Hakki & Alstad, 2019).

Effective strategies for students with disabilities are essential in special education instruction. Although several researchers have identified many strategies as effective,

special education and general education teachers do not use them or underuse them (Burns & Ysseldyke, 2009; Gable, Tonelson, Sheth, Wilson, & park, 2012). Cook and Odom (2013) proposed that the reason for not implementing effective practices is administrative support and training. Teachers lack coaching and feedback regarding the best way to build effective practices within the classroom (Sweigart, Collins, Evanovich, & Cook, 2016).

Assessment Programs

Standardized assessments have a long history that is steeped with controversy and politics. In the United States, standardized testing began in 1845 when politician Horace Mann created his assessment to ensure that educational access and student learning would be equitable across content areas (Gershon, 2015). By 1917, more than 200 standardized assessments were used regularly across school districts and collegiate settings. The United States has a long reliance on standardized assessments from which to draw inferences regarding social structures. In the 1960s, standardized assessments were used to draw attention to disparities between segregated schools (Rosales, 2018). Since then, standardized testing has been used primarily to find differences in educational systems that provide inequalities of schooling (Gershon, 2015; Rosales, 2018; Shelton & Brooks, 2019).

The MAP was designed to ensure that all students have fair, equal, and significant access to obtain a high-quality education (Schmidt, 2011). Missouri designed a measure to assess how well students have acquired academic knowledge and skills with the expectations of Missouri Learning Standards. This information is used to diagnose individual performance, school building performance, and district performance. Missouri

assessment started with the Outstanding Schools Act of 1993. This legislation required Missouri to create a statewide system that would assess student performance. The NCLB Act (2001) increased the expectations for student assessments nationwide. Then, beginning in school year 2008-2009, Missouri implemented the End of Course exams. The latest evolution of assessment was in school year 2014-2015 when the assessments were administered electronically via an online platform.

The creation of the MAP, at least in part, was in response to *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983). Legislation around educational reform has affected every area of the education process. Assessment, curriculum design, instruction, and activities have experienced change since the introduction of performance-based assessments in 1993. However, one of the most significant areas that changed was the assessment tool. The Missouri Mastery Achievement Test was abandoned because it had solely multiple-choice items that were intended to assess competencies. The introduction of the MAP "married" the performance standards to the assessment tool. The focus changed from what students should know to what students can do. The MAP included constructed response items and performance events that had not been assessed in this manner previously. The change from knowledge to ability caused a change to the school curriculum from content knowledge to performance abilities (Husband & Hunt, 2015).

Post-secondary Activity

Ultimately, school districts should able to produce a student who can participate in a meaningful activity after graduation. PSE has been identified as the goal of 80% of individuals with disabilities (Malcolm & Roll, 2017). Therefore, the participation rate in

post-secondary activities has been chosen as an indicator of the provisions of appropriate public education. Holman (2017) studied preparedness for post-secondary opportunities in Texas. The connection between real-life experience and education has been the purpose of education. When one links real life to construct knowledge—and curriculum to real-life experiences—one increases interest, engagement, and retention (Loera, Nakamoto, Oh, & Rueda, 2013). Post-secondary activities are more likely to be of interest and increase engagement and retention. English as a second language student who focus on post-secondary activities have been found to benefit more than those who do not have the same focus.

There is a plethora of PSE options for individuals with varied skills and knowledge. Career and technical education (CTE) is one avenue by which students bridge the gap from education to a career path. Many have criticized the decrease in the rigor of mathematics and core content. Salopek (2007) found that 9,400 institutions are offering PSE through community colleges, technical schools, skill centers, and other CTE opportunities. Additionally, Handy and Braley (2012) found that nontraditional education (e.g., CTE programs) increased motivation and achievement in students.

Post-secondary programs for students with low incomes have challenges and barriers that are complex. Students of low, social economic status (SES) lack knowledge that educators assume that the majority of students in middle or high SES have. Low SES students lack understanding of entry-level knowledge, funding opportunities, and deadline expectations. This form of social capital is commonly understood knowledge that many students often lack (Childs, Finnie, & Mueller, 2018). The difficulty is in overcoming these structural barriers. Creating individual and collective efficacy in

students along with post-secondary accessibility is difficult (Bourke, Vanderveken, Ecker, Shearer, & Atkinson, 2019).

Beyond the struggles of low SES students, the struggles of students who are intellectually disabled present difficult obstacles. Post-secondary activities have focused on meaningful employment for this population. Effective post-secondary activities require thorough transition planning that includes education and training that is focused on employment (Ryan, Randall, Walters, & Morash-MacNeil, 2018). Effectively, to accomplish employment for students with intellectual disabilities, one must coordinate with multiple agencies, one of which is the students' housing agencies, for only 21% of individuals with intellectual disability live independently (Sanford et al., 2011). Educational programs for students with intellectual disabilities focus on providing employment instruction and academic knowledge. PSE programs have historically experienced poor outcomes. However, students with intellectual disabilities do have a greater rate of employment and higher income when they have attended a college PSE program. Employment for nonparticipants in PSE is reported at 32% versus 48% of students with intellectual disabilities who attend a PSE program (Ryan et al., 2018).

Students who have ASD after secondary schooling are at risk of poor employment outcomes in adulthood. Taylor and Seltzer (2010) found that repetitive and maladaptive behaviors slow after high school for students with ASD without intellectual disabilities. These maladaptive behaviors are likely to be related to the employment activities of young adults with ASD. Maladaptive behaviors also affect day-to-day activities, and researchers found evidence of a relationship between functional independence and social functioning for individuals with ASD (Malcolm & Roll, 2017; Taylor & Seltzer, 2010).

Malcolm and Roll (2017) and Taylor and Seltzer (2010) suggested that better transition programming in which educators explicitly taught functional and social behavior increased the likelihood of students with ASD to be employed or to be in a PSE program.

Students with disabilities have a host of obstacles that interfere with post-secondary outcomes. The transition to after high school is affected by the quality and availability of adequate supports for students with disabilities. The extent that supports are appropriate, timely, and meaningful is directly coordinated with the outcomes of students in PSE programs (Malcolm & Roll, 2017).

Free Appropriate Public Education

A FAPE is an entitlement under the IDEA (2004). This Act of Congress clearly requires LEAs to provide a FAPE to all students. However, the determination of what constitutes an appropriate education is subjective. Whether a district uses a certificated, special education administrator might or might not create a difference in equal access at the start gate of opportunity, and hiring such an administrator might or might not be a societal barrier to opportunity (Fishkin, 2014; Williams & Hawthorn, 2008).

The subjective nature of the law has left interpretations of appropriate education for the courts to decide. What exactly constitutes appropriate education has been debated in the courts since the inception of the law. However, for more than 30 years, the courts have used the holdings of *Board of Education v. Rowley* (1982), a case that went all the way to the U.S. Supreme Court. The decision was twofold. The first expectation of the school districts to satisfy an appropriate education was that the educational programming must be calculated. This ruling meant that the programming must be planned, and not merely provided. The second expectation of the school districts was that the

programming must be appropriate; the education must provide some educational benefit. This case set a precedent for all interpretations of whether school districts were providing an appropriate education. *Board of Education v. Rowley* (1982) set a low standard of expectation that would be referred to as "de Minimis" in future court cases, which means that the expectation of services was minimal. However, this case remained a precedent until 2017 when the court ruled on *Endrews F. v. Douglas County School District* (2017). Endrews argued that, indeed, school districts were required to provide more than mere de Minimis education.

In *Endrews F. v. Douglas County School District* (2017), the court stated that the standard for appropriate education required an educational program reasonably calculated to enable a child to make progress that would be appropriate in light of the child's circumstances. Although the court retained the reasonably calculated expectation, it also raised the expectation from a previous holding that education should be of benefit, to an expectation that the IEP is reasonably calculated for the student to make progress while taking into consideration the child's circumstances (Zirkel & Hetrick, 2017). Thus, the courts have again left interpretation of what is reasonably calculated and appropriate for subsequent court cases to decide.

School districts have the burden to provide services to students with disabilities (Strong, 2019). Access to appropriate education requires school personnel to have specialized training. The skills to provide education to students with disabilities include varied instructional strategies and proficiency in providing accommodations. In addition to skills used to teach exceptional children, an educator must have knowledge in assessments, due process, referrals, and at least a basic understanding of educational laws

that govern the entitlements of students (Juarez, 2015). Currently, the Missouri's SEA has not required specific education in the administration of special education (Missouri DESE, n.d.a).

Disabled persons experience a host of problems regarding their particular needs. Often their futures are jeopardized because of environments that disempower and marginalize them. In addition, many students lack the opportunity for advancement partially because of economic, cultural, and social limitations. Worldwide, education is viewed as the most promising path for individuals to realize a productive and satisfying life. However, challenges to accessing meaningful participation in education is confounded with poor academic performance and declining completion rates (Andrew, Rop, Ogola, & Wesonga, 2015).

Charter school's performance is under scrutiny as charter schools particularly have been found to discourage enrollment of students with disabilities (Barnard-Brak et al., 2018). Educational choice is often limited for students with disabilities to charter schools. However, charter schools have been known to discourage enrollment of disabled students. Educational choice is known to skew the statistical data of charter schools, making them appear to be performing at a higher rate than if they had enrolled a full distribution of students. If a district removes students with disabilities performance scores, the school would then naturally perform at a greater rate, when central tendency scores are used to evaluate school performance. Discouragement of enrollment to students with disabilities causes an invalid assessment of charter school performance when considering all students (Barnard-Brak et al., 2018).

School choice has resulted in little more than a facade for students with disabilities (Honey, 2017). The theory behind school choice or charter school systems is to create a competitive atmosphere where schools compete and improve practices. However, charter schools have influenced the selection of students, causing an inverted effect. Although not explicitly stated, charter schools communicate who is welcome and who is not welcome. These exclusionary practices have come under scrutiny recently as researchers have examined disproportionality rates in charter schools (Barnard-Brak et al., 2018; Honey, 2017; Marshall, 2017). Only 11 charter schools in the United States were found not to have a disproportionate rate of enrollment of students with disabilities (Barnard-Brak et al., 2018; Honey, 2017; Marshall, 2017).

Implementing the Administration of Special Education

There is a severe shortage of appropriately trained administrators of special education. Some states have rigorous, clearly defining competencies, while other states are vague about their competencies or have no guidelines at all. Therefore, a lack of needed, clearly defined competencies for preservice for special education administrators has affected the design of effective administration preparation programs in special education administration (Auletta, 2018). Compounding this issue is a growing trend of universities discontinuing special education administration programs for certification. Additionally, it is interesting that, no state has awarded a special education license to any person training for the position of superintendent. The shortage of administrators and the lack of quality credentialing present difficulties for districts that seek to employ a certificated, special education administrator (Boscardin, Weir & Kusek, 2010). The current situation has caused a lack of certificated, special education administrators

available in the workforce. This lack of guidance leaves teachers unsure of their abilities to implement IEPs (Debbag, 2017). However, the fact that states do not use a credentialing program suggests that a general education administration program might be sufficient to implement special education programs (Boscardin, 2007). Tracy-Bronson (2018) makes a valid argument that the problem is that schools are nonadaptable organizations that are charged with serving all students, but that they seldom do it. The lack of administrative training that is specific to students with disabilities creates an organization that complies with IDEA (2004) only by compliance indicators and never by implementing meaningful change. These organizational structures might cause limits in equally accessing meaningful opportunity (Fishkin, 2014; Williams & Hawthorn, 2008). Therefore, in this study, the researcher sought to examine whether employing a certificated, special education administrator would make a significant difference in opportunity as measured by student performance.

Summary

The school district administrators have an indirect but significant impact on student performance (Barreau & McIntosh, 2020; Khumalo, 2019; Lick et al., 2013; Rinehart, 2017). Nevertheless, certificated, special education administration is not an expectation for school districts in Missouri. Whether this satisfies the requirements of access to an education that is reasonably calculated to enable a child to make appropriate progress in light of the child's circumstance has yet to be ruled on by the courts. School administrators are essential in the proper outcomes for schools and, subsequently, access to a FAPE (Ruppar et al., 2018). The influence of administrators takes place primarily on two levels. Level 1 prescribes a working relationship with the leadership of teachers. The

fact that the teachers are the primary mediators who directly affect student success makes the principal-, director-, or administrator–teacher relationship essential and worthy of attention (Marcoulides & Heck, 1990; Van Beck, 2011). Ruppar et al. (2018) and Van Beck (2017) that the leadership qualities of administrators directly influence teacher retention. Teacher retention is known as an essential factor in school stability and student outcomes. It also can be even more critical for a school district with fewer financial resources (Boyd et al. 2011; Zhang & Zeller, 2016).

Level 2 of the impact between principals, directors, and administration is at the performance level of students. As administrators, principals, have a direct impact on student outcomes. The educational impact might occur because of the influence and effectiveness of teachers as primary mediators. Balyer et al. (2017) and Çalik et al. (2012) revealed that administrative decisions have an overall effect on the students' achievement. Principals can even have a direct influence on student outcomes deriving from their situational contact and influence on students in the academic setting. This effect also applies to students with disabilities. Special education serves an especially precarious demographic that is additionally vulnerable because of a lack of common curricular and methodological knowledge on the part of administrators (Griffith et al., 2019. The authors of current research (Ruppar et al., 2018; Friend et al., 2010; Goodrum, 2014; Murawski, 2017) have resoundingly concluded that leadership qualities in school administration, including special education administration, should be a priority to guarantee a FAPE for all students. Current literature on using noncertificated special education administrators, and it is an effect on student outcomes, is lacking. Thus, access

to special education administrators concerning satisfying a FAPE has yet to be researched.

Therefore, in this study, the researcher sought to test Williams (2005) Start Gate Theory and Fishkin's (2014) Theory of Opportunity Pluralism as they apply to special education. The researcher has sought to test the hypothesis that no statistically significant difference exists in the achievement of students with disabilities regarding student performance in districts with a certificated, special education administrator and districts without such an administrator, as measured by MAP ELA and mathematics achievement levels.

The methodology used to conduct this study is contained in Chapter 3. The methodology of this study included the selection and sampling of school districts used to test the null hypotheses and to answer the research questions. The design and setting used to conduct the procedures of the test were explained. In addition, Chapter 3 contains (a) the instruments that the Missouri DESE (n.d.b) used to collect achievement data, and (b) the assumptions and procedures that were associated with the independent samples *t*-test that was used to analyze the data. Chapter 4 includes the results of the study, as explained in Chapter 3. In Chapter 5, the researcher concludes the study and offers recommendations for further studies using the results and implications of this study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Introduction

In enacting the IDEA (2004), Congress sought to offer equal opportunities that only education could provide to all students (Underwood, 2018). The purpose of this casual-comparative study was to test the paired theories of William's (2005) Start Gate Theory and Fishkin's (2014) Theory of Opportunity Pluralism as it is applied to equal opportunity in education for students with disabilities. The researcher sought to answer the research questions included in this chapter. The research questions were tested is covered in the procedures section. The null hypotheses that drove this inquiry are reviewed as well. Chapter 3 also includes an explanation of the selection and sampling, and the reason that this sampling is reflective of educational opportunity. This justification was the reason that the selection of sampling was chosen to generate the sample population. In the instrumentation of the study, the researcher used a casual comparison, independent samples *t*-test to determine if a difference existed between districts that staffed the position of special education administrator and districts that did not. In the section of the research design, the researcher documented the casual comparison between the data of districts that used a certificated, special education administrator and the data of districts that did not. In the measurements of the psychometric characteristics section, the researcher documented the method of validating the data from the Missouri DESE (n.d.b). In the last section of Chapter 3, the researcher explains the statistical analysis that was used and the data that was analyzed.

Research Questions

1. What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years (SYs) 2015-2016, 2016-2017, 2017-2018, and 2018-2019?
2. What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019?

Null Hypotheses

1. There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by MAP ELA and mathematics achievement levels.
2. There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by the Missouri DESE (n.d.b) follow up survey.

Selection and Sampling

A total population sample of students with disabilities, whom Missouri public school districts assessed and reported, was used in this study. All of the students whom the Missouri DESE (n.d.b) reported on the Special Education Profile Report were represented in this study. The students who were not represented were those who attend schools that did not use MAP or did not report the results. Other students who were not represented in this study were students of districts that were so small that the Missouri DESE suppressed the student data. The total population sample was used because total sampling reduces the risk of omitting insights from members who were not included (Laerd Dissertation, 2012).

The student data for this study were acquired from the Missouri Comprehensive Data System (MCDS) to determine whether a difference in achievement existed between school districts that employed a certificated special education administrator and districts that did not employ such an administrator. The Missouri DESE (n.d.b) manages the MCDS, which in turn provides a report of special education performance called the Special Education Profile Report. In the Special Education Profile Report, Missouri DESE provided a variety of data reports that are accessible to the public. The researcher used the Missouri DESE (n.d.c) MAP data (p. 7) and post-secondary activity data (p. 12). Each district's data were compiled into an Excel document (Missouri DESE, n.d.b; Appendix B).

The Special Education Profile Report (Missouri DESE, n.d.b) shows the percentage of students in Grades 3-8 who have disabilities and who scored *proficient* or *advanced* on the MAP, assessment of achievement. This report is generated for each

public school district. This data is reported in categories of Grades 4-6, and then in a cumulative percentage of Grades 3-5 achievement levels. The data is also reported in categories of Grades 6-8, then in a cumulative of Grades 6-8 percentage of achievement in the top two levels. The data is also reported as a total of Grades 3-8 scores. All of these categories are labeled in the Special Education Profile Report. Much of the individual grade scores were suppressed because of their small cell size. Some of the cumulative data were suppressed in smaller districts. The selection of data resulted in the cumulative of all Grades 3-8 scores to reduce the number of districts that had data suppressed.

The Special Education Profile Report (Missouri DESE, n.d.b) shows the percentage of graduates and dropouts (a) who attended a 2-year or 4-year college and completed at least one term, (b) who attended a college, but did not complete one term, (c) who attended continuing education, but not a college, (d) who were employed competitively, but working at least 20 hours per week, (e) who worked, but less than 20 hours per week, or (f) who were in the military. This report is generated for each public-school district. The data were also reported as cumulative percentages in the categories of education and workforce participation. Finally, the Special Education Profile Report shows a total of these categories. The total of activities is labeled "All." The "All" category represented students with disabilities who were enrolled in higher education or other PSE or training program for at least one complete term, who were competitively employed, or who were in some other employment for 20 hours a week for at least 90 days. This category was chosen because with it the researcher was able to answer the research question and because it represented students who were accomplishing the desired outcomes.

A data request was submitted to the Missouri DESE (n.d.b) to determine the districts that employed a certificated, special education administrator. The Missouri DESE provided a Microsoft Excel spreadsheet that indicated in core data whether a district reported that it employed a special education administrator. The Missouri DESE also provided whether that administrator was appropriately certificated. These data were merged with the achievement data into a single, Excel document. The data were then entered into the Statistical Package for the Social Sciences (SPSS) for analysis of significance, using an independent sample *t* test.

Research Setting

This difference study was located in Missouri and used the indicators of performance of the MAP scores and post-secondary activities (Missouri DESE, n.d.b). There were 518 public school districts in Missouri. Only 252 of the administrator positions were filled with an administrator, and only 187 of the administrator positions ere appropriately certificated. In 2018, of the 518 school districts, only 160 districts employed a certificated, special education administrator. These 160 districts ranged from rural to urban to suburban. The MAP assessment data were used because they measured a student's knowledge of content. Assessment data could then determine the level of academic acquisition. Post-secondary activity data were used because they measured the effect of that knowledge as it was applied to students when they were out of high school. The data that were used came exclusively from Missouri public schools. The data were accessed from the Missouri DESE (n.d.b) website. The data were accessed post ex facto from the MAP assessments from school years 2016, 2017, 2018, and 2019. All of the data were open access data, meaning they were publicly accessible. The data were

electronic in form; therefore, the research setting was an online virtual environment. The academic data setting was entirely of students with disabilities, as was indicated in the Special Education Profile Report. The grades were Grades 3-8 students for academic data and graduated students for the post-secondary activity data. This data also included data from the MAP alternative assessment. Students who had not been identified as students with disabilities were not included in the Special Education Profile. The post-secondary activity was also derived from the Special Education Profile Report. These data points reflected students who had graduated from high school and who had responded regarding the academic or workforce activities in which they were involved.

Research Design

The purpose of this causal comparative study was to examine the difference in achievement levels of students with disabilities when those students were given access to a certificated, special education administrator in comparison with students who were not given access to a certificated, special education administrator. The causal comparative study was determined appropriate to compare the differences between districts. Causal comparative does not mean experimental, which is most appropriate because causal comparative is appropriate for comparison of two sets of data (Creswell & Cresswell, 2018). The researcher examined the difference in the achievement of students with disabilities, as reported on the Special Education Profile Report (Missouri DESE, n.d.b). The researcher also examined the difference in students who were actively enrolled in PSE or competitively employed. This difference study used data reported on the Special Education Profile Report regarding the MAP and the post-secondary activities report as measured achievement.

The data were accessed through the MCDS and through data that the Missouri DESE (n.d.b) provided in response to data requests. All of the data were accessed by the ex-post-facto method, which was appropriate because the researcher sought to examine the differences between previous performance indicators (Gay, Mills, & Airasian, 2009). The Missouri DESE (n.d.b) data that it provided in response to data requests identified each public school district in Missouri and identified whether it employed a certificated special education administrator. The data requests also provided whether the district's special education administrator had been appropriately certificated, as the Missouri DESE defines the certification.

The MCDS data was accessed electronically from existing public data. The MAP results were desegregated data from students with disabilities. Then the data were also desegregated by ELA and mathematics. The data of the total number of students, and the percentage of students who scored proficient or advanced, were represented in the "All" column. The data of the students who scored proficient or advanced represented participants from Grades 3-5 and Grades 6-8 combined for each discipline. This data did not represent science scores.

In a causal, comparative study, the percentage of students with disabilities who scored proficient or advanced in ELA and mathematics in the school years 2016, 2017, 2018, and 2019 in districts with a certificated, special education administrator was compared to the percentage of students with disabilities in districts without a certificated special education administrator. A quantitative, difference analysis was conducted of (a) the percentage of students with disabilities who were enrolled in higher education or another PSE or training program for at least one complete term or competitively

employed or in some other employment for 20 hours per week for at least 90 days during the school years 2016, 2017, 2018, and 2019 in districts with a certificated, special education administrator as compared to (b) the percentage of students with disabilities who were enrolled in higher education or another PSE or training program for at least one complete term or competitively employed or in some other employment for 20 hours per week for at least 90 days in districts without a certificated, special education administrator. An independent samples *t*-test was appropriate for this data analysis because it would provide a statistical analysis of the performance of school districts that employed a certificated, special education administrator and districts that did not employ such an administrator (Creswell, 2013).

This research selection was made to determine whether a significant difference existed in the achievement of students with disabilities. The difference or lack of difference would add to the knowledge base of how public schools employ administrators. The results of this study will add to the body of knowledge and literature regarding special education leadership. The quantitative analysis was conducted using an independent samples *t* test.

The research examined the difference in the achievement of students with disabilities, as reported on the Special Education Profile Report (Missouri DESE, n.d.b). The research also examined the difference in students who were actively enrolled in PSE or who were competitively employed. This difference study used data that was reported on the Special Education Profile Report regarding the MAP and post-secondary activities that are reported as measures of achievement (Missouri DESE, n.d.b).

Procedures

In accordance with Southwest Baptist University's expectations of protecting human participants in research, this study was submitted for review to the Research Review Board (RRB) for approval. The approval was using an ex-post-facto data collection of open access data from the Special Education Profile Report (Missouri DESE, n.d.b). The RRB approved the Missouri DESE data request and this study of differences in student achievement and post-secondary activities via the Missouri DESE Data Management System.

The districts that employ a certificated, special education administrator were ascertained by a data request from the Missouri DESE (n.d.b). The Missouri DESE provided an Excel worksheet that indicated in columns which districts employed a special education administrator and which districts did not employ such an administrator. Additionally, the Missouri DESE (n.d.b) indicated which districts employed a special education administrator, and the districts whose administrator was appropriately certificated. The Missouri DESE (n.d.b) Excel worksheet was modified to include columns for the number of students who scored in the top two categories (TTC) and the percentage of students who did not score in the TTC. A column was also added to show the percentage of students who were employed or continued in higher education. This process of adding columns was repeated in tabs for school years 2016, 2017, 2018, and 2019.

The data were compiled from the open access, Special Education Profile Report (Missouri DESE, n.d.b), and then they were entered into the Excel document. The data were accessed through the Missouri DESE Data Management System. The Special

Education Profile Report included the number and the total percentage of students who scored proficient or advanced. The data in the Special Education Profile Report allowed academic performance from Grades 3-8 to be compiled into one represented percentage for the ELA and mathematics disciplines. The data then represented a combined number of students and represented separately the percentage of students from Grades 3-8 who had disabilities and scored proficient. Then a percentage was obtained for the same set of students who scored advanced on the same assessment.

Each district's performance was individually reported. The researcher accessed the Special Education Profile Report (Missouri DESE, n.d.b) by accessing the report for each of the 518 school districts from the Missouri DESE website. The researcher entered in the performance indicators from the individual district profile report, into the Excel document that corresponds with the district and the corresponding year.

The data were entered into the SPSS to compare the performance of districts that employed a certificated, special education administrator against districts that did not employ such an administrator. This difference in analysis was repeated individually for school years 2016, 2017, 2018, and 2019. The researcher sought to determine whether a difference existed between districts. This question was repeated for each of the respective school years.

Instrumentation

Existing data that the Missouri DESE (n.d.b) provided publicly were chosen as a secondary source. These data were publicly available and did not require specific permission. Missouri has 518 public schools. Some districts employ more than one special education administrator. Some districts use multiple special education

administrators; therefore, the total number of special education administrator positions in Missouri is 610. These districts employ 252 special education administrators. However, only 186 of them are appropriately certified. The MCDS was used to access the Special Education Profile Report. The Special Education Profile Report was used to retrieve the percentage of students who scored in the TTC of performance in ELA and mathematics for students with an IEP. The Special Education Profile Report was also used to access the percentage of students who were in continuing education or who were competitively employed.

Achievement Data

Data Recognition Corporation (DRC) prepared the MAP assessments (Missouri DESE, n.d.c). Reliability is the consistency of test scores when administered as a parallel form of the same test. A test that has reliability is an assessment that produces scores that are expected to be stable. It was not feasible to administer multiple assessments, so DRC used internal consistency measures to ensure reliability. Internal consistency is a reliability process that estimates reliability from a single administration of the assessment. To ensure internal consistency, DRC used the overall standard of error of measurement, conditional standard error of measurement, and decision consistency of achievement level classifications for each MAP assessment.

Table 1 shows the Cronbach coefficient values. The DRC used these values to evaluate the reliability of the MAP assessment (Missouri DESE, n.d.c). The coefficient values indicated appropriate tolerances for reliability.

Table 1

MAP Reliability

Year	Subject	Grades	Coefficient
2016	ELA	3-8	0.90-0.92
2016	MTH	3-7	0.89-0.91
2016	MTH	8	0.84
2017	ELA	3-8	0.90-0.91
2017	MTH	3-7	0.90-0.91
2017	MTH	8	0.86
2018	ELA	3-8	0.89-0.92
2018	MTH	3-8	0.91-0.94
2019	ELA	3-5/7-8	0.88-0.92
2019	ELA	6	0.90-0.94
2019	MTH	3-8	0.90-0.93

In 2016, reliability from Cronbach's coefficient ranged from 0.90 to 0.92 for all ELA assessments. Mathematics ranged from 0.89 to 0.91 for all forms except Grade 8, in which the coefficient was 0.84. The results indicated an acceptable reliability coefficient (Missouri DESE, n.d.b). In 2017, reliability from Cronbach's coefficient ranged from 0.90 to 0.91 for all ELA assessments. Mathematics ranged from 0.90 to 0.91 for all forms except Grade 8, in which the coefficient was 0.86. The results indicated an acceptable reliability coefficient. In 2018, reliability from Cronbach's coefficient ranged from 0.89 to 0.92 for all ELA assessments. Mathematics ranged from 0.91 to 0.94 for all forms. The

results indicated an acceptable reliability coefficient. In 2019, reliability from Cronbach's coefficient, ranged from 0.88 to 0.92 for all ELA assessments except Grade 6, where coefficients ranged from 0.90 to 0.94. Mathematics ranged from 0.90 to 0.93 for all forms. The results indicated an acceptable reliability coefficient.

DRC used construct-related validity to ensure the MAP was valid. DRC used a six-step process to ensure the assessment measured what the test is designed to measure. The assessment was designed to measure the acquisition of knowledge and skills as they relate to the Missouri Learning Standards. Beginning with question specifications and continuing to administering the assessment, and then analyzing the results, DRC checked for validity to ensure that the results from the MAP assessments were valid (Missouri DESE, n.d.c).

This research is drawn partially on the percentage of students who scored proficient or advanced on the MAP (Missouri DESE, n.d.b). The MAP is divided into four categorical sections: below basic, basic, proficient, and advanced. The researcher used the percentage of students with disabilities who achieved proficient or advanced scores. A group of Missouri educators determined the levels. Educators considered the expectations for student performance in each achievement level, and then transformed those expectations into numeric cut points. Determining the cut points for each level was accomplished by dividing the committee participants into 12 groups. Each group was tasked with a single grade and content area. The individual groups determined what the scores represented below basic, basic, proficient, and advanced.

Scoring was performed using a technology-enhanced scoring process for which a rubric was created for each dichotomously scored item. Multiple-choice or multi-select

times were scored using a predefined answer key. Human scoring was used with constructed response items. Interrater reliability demonstrated at least 99% exact or adjacent agreement (Missouri DESE, n.d.c). In this study, the independent samples were school districts that employed a certificated, special education administrator and districts that did not employ such an administrator. The researcher set the level of significance at .05. The scoring of data could range from 0% (not reported) to 100% (all reported) as scoring in the TTC. Some districts were not reported because the Missouri DESE suppressed the data. A score of 0% could be achieved if no students met the criteria to score in the TTC. The TTC was recorded using Excel as a data management tool. The Missouri DESE data originated from an Excel worksheet. The researcher used the Excel worksheet to record indicator performance.

Post-secondary Activity Data

The Missouri DESE's (n.d.b) Special Education Profile Report was used to retrieve the percentage of students who were enrolled in higher education or other PSE or training program for at least one complete term or were competitively employed or in some other employment for 20 hours per week for at least 90 days.

Accuracy was ensured by using an ex-post-facto-designed study of the Missouri DESE's (n.d.c) open access data. These data were entered into the Missouri Core Data-MOSIS data collection system that records various school district information. MOSIS is an internal communication between the local school district and the Missouri DESE. Among the information recorded in core data is the credentialing of school employees, class offerings, and performance indicators. Individual school districts report data in six different cycles. Special education data is reported in the October cycle. Individual

districts are responsible for the quality, completeness, and timeliness of data; however, the Missouri DESE has specific reporting requirements for the data. After the districts enter data, the Missouri DESE requires districts to ensure the correctness of the data and to certify the accurateness of the data. Certification indicates that the districts have reviewed all of the submitted information and have verified the data's accuracy (Erwin, 2019).

Statistical Analysis

The data were cleaned to remove the school districts that were parochial, charter, or did not participate in the MAP. The schools for which the Missouri DESE did not provide a special education profile report were not used in this study. Only schools that participated in the MAP, and whose data were provided publicly in the Special Education Profile Report (Missouri DESE, n.d.b), were used for comparison. School districts that had a small sample size were omitted from this study. The Missouri DESE suppresses data that have small data sets. The districts whose data the Missouri DESE suppressed were not used in this study.

Table 2 shows the 13 areas of disabilities from the IDEA (2004). The number of students who identified as having a particular impairment is also displayed. The table reflects the students enrolled in public schools in Missouri. The data is reflective of only Kindergarten through Grade 12 (K-12).

Table 2

Disability Distribution

Categorical identification	Number of students	Percentage of students
Total students enrolled	881651	100
Total student with disabilities	119,029	13.50
Intellectual disability	9,230	1.05
Emotional disability	7,079	0.80
Language impairment	8,657	0.98
Sound system impairment	17,922	2.03
Orthopedic impairment	401	0.05
Specific learning disability	30,824	3.50
Other health impairment	25,845	2.93
Deaf and blind	29	0.00
Visually impaired	447	0.05
Multiple disabilities	1,396	0.16
Autism	12611	1.43
Traumatic brain injury	398	0.05
Young child with developmental disability	3,121	.35

The demographic area for this study was Missouri school districts. In Missouri schools, 881,641 students were enrolled in Grades K-12. In these grades, 119,029 students identified as having a disability as defined by the IDEA (2004). In Grades K-12, 9,230 students identified as intellectually disabled, 7,079 students reported as emotionally

disturbed, 8,657 students identified as having a language impairment, 17,922 students reported having a sound system impairment. Also in Grades K-12, 401students were orthopedically impaired. The largest population of students (30,824) had a specific learning disability, which was followed closely by 25,845 students who had some other health impairment. The number of students who were deaf and blind (29) was the smallest group. The second smallest group was composed of students who were visually impaired with 441 students identified with a visually impairment. Multiple disabilities were reported for 1,396 students, while Autism Spectrum Disorder included 12,611 (Missouri DESE, n.d.b).

The researcher selected an independent samples *t*-test to compare the differences between the mean performance of students with disabilities. The independent samples *t*-test was an appropriate measure to analyze differences in the means of normally distributed variables. With the *t* test, the researcher was able to answer whether a difference existed in student achievement. The researcher was also able to use the *t*-test to explore differences in the students' post-secondary activities (Pelham, 2013). With an independent sample *t* test, the researcher was able to compare differences in the mean dependent variables (achievement scores) against the grouping variables. In this study, the groupings were defined as districts that employed a certificated, special education administrator and districts that do not employ such an administrator. The assumption to meet the validity of this analysis was that the dependent variable would be on a continuous scale. The dependent variable was reported as a percentage. In Research Question 1, the dependent variable was the percentage of students that scored proficient or advanced on academic performance. In Research Question 2, the dependent variable

was the percentage of students who were involved in a post-secondary activity. Other assumptions were that the independent variables of school districts with or school districts without certificated, special education administrators would be independent of each other. Special education administration certification is exclusive to either appropriately certificated or not appropriately certificated personnel. The school districts report the certification status to the Missouri DESE (n.d.b) as appropriately certificated or not appropriately certificated (Erwin, 2019). There were no significant outliers, the achievement scores were normally distributed, and the scores had an equal spread (Pelham, 2013). The standard deviation for this study was calculated by the achievement of students in districts that employed certificated, special education administrators against the achievement data of student in districts that did not employ a certificated, special education administrator. Statistic test details that were reported include the difference between the means of the dependent variables. The SPSS also outputs the *p* value. The *p* value of less than 0.05 was set as the value for significance to reject the null hypotheses.

Conversely, a *p* value of greater than 0.05 was set as the value for failing to reject the null hypotheses. The alpha was set at 0.05 as a reasonable standard to reject the null hypothesis (Pelham, 2013). Cohen's *d* effect size was used to evaluate the effect size as a measurement of the magnitude of the impact of the independent variables. Cohen's *d* was calculated by dividing the difference of means by the average standard deviation. The effect size was reported as 0.2 for a small, 0.5 for a medium, and 0.8 for a large effect. (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013)

Southwest Baptist University's RRB approved an ex-post-facto data collection. The data collection included the MAP and post-secondary activity data that was published publicly in the Special Education Profile Report (Missouri DESE, n.d.b) for all 518 school districts located in Missouri. Additionally, data were provided about the district's special education administrator's certification, which was ascertained from the Missouri DESE data systems manager. The data request provided the number of schools that did not employ a special education administrator and the number of school districts that did employ a special education administrator, as well as districts that employ a certificated, special education administrator. Control for accuracy was established by using the data that the Missouri DESE provided publicly. A 4-year difference analysis, using MAP performance data of students with disabilities, was studied using an independent samples *t*-test. District performance was compared from districts that employed a certificated, special education administrator against districts that did not employ a certificated, special education administrator. District performance (on state assessments) of Grades 3-8 was analyzed to test the hypothesis that no statistically significant difference existed in the MAP TTC of performance in ELA and mathematics for students with an IEP in districts that employ a certificated, special education director, and in districts that did not employ such an administrator. A value of .05 was used to determine significance.

A difference analysis of post-secondary activity was conducted using an independent samples *t*-test. The mean differences between districts were analyzed to test the hypothesis that no difference existed in students who were enrolled in higher education or other PSE or training program for at least one complete term or who were

competitively employed or in some other employment for 20 hours per week for at least 90 days for students with an IEP in districts that employ a certificated, special education director, and in districts that did not employ such an administrator. A value of .05 was used to determine significance for each *t*-test. Each year was analyzed using an independent samples *t*-test.

An analysis of MAP achievement for Grades 3-8 was conducted to compare the mean scores of students with disabilities who achieved proficient or advanced ratings in districts who employed a certificated special education administrator against districts that did not employ a certificated, special education administrator. A difference analysis for Grades 3-8 was conducted for districts with a certificated, special education administrator to determine whether employing a certificated, special education administrators resulted in a difference in student achievement during school years 2016, 2017, 2018, and 2019. Each district's mean scores were compared to the mean scores of districts that did or did not employ a certificated, special education administrator. An independent samples *t*-test was used to analyze differences for each year in ELA and then again for mathematics achievement.

A quantitative difference analysis of post-secondary activity for high school graduates and dropouts was conducted. This analysis compared the mean scores of students who had disabilities and who were enrolled in higher education or other PSE or training program for at least one complete term or who were competitively employed or in some other employment for 20 hours per week for at least 90 days for students with an IEP in districts that employed a certificated, special education director, and districts that did not employ such a director. A difference analysis of post-secondary activity was

conducted for districts with a certificated, special education director to determine whether certificated, special education administrators resulted in a difference in student activity during SYs 2016, 2017, 2018 and 2019. Each district's mean scores were compared to the mean scores of districts that did or did not employ a certificated, special education administrator. In total, 12 *t*-tests were performed. Four *t*tests in ELA compared school districts' MAP achievement as the dependent variable for SYs 2016, 2017, 2018 and 2019. Then four separate *t*-tests in math for school years 2016, 2017, 2018, and 2019 were conducted to answer Research Question 1. Additionally, four *t*-tests were conducted for school years 2016, 2017, 2018, and 2019, using post-secondary activities as the dependent variable to answer Research Question 2.

Summary

The IDEA (2004) required public school districts to provide an appropriate education to students with disabilities. If a significant difference exists between districts that employed a certificated, special education administrator and districts that did not employ such an administrator, districts that did not employ a certificated, special education administrator might not then be satisfying their responsibility to provide a FAPE. This causal comparative difference study served the purpose of examining the differences of student achievement between the districts that employed a certificated, special education administer and the districts that did not employ such an administrator. In Chapter 3, the researcher that outlined the selection of data was of Missouri students whose performance data the Missouri DESE (n.d.b) publicly published. The sample was of all of the students who were reported. The Missouri DESE suppressed some data because of the small sample size. The data were acquired using publicly reported

performance indicators of the MAP achievement levels and post-secondary activity. The procedures followed for the study were explained in this chapter, as was the statistical instrument that was used to examine the differences in student performances. The analysis of the MAP performance and post-secondary activity were analyzed using an independent samples *t*-test to quantify significance at .05.

Chapter 4 moves from the explanation of processes in Chapter 3 to the results of the *t*-test and the findings of the study. The researcher discusses the limitations of this type of study and the limitation of the statistical instruments that were used. The research findings are applied to the research questions and the researcher seeks to explore the null hypotheses. Whether a difference exists between districts that employed a certificated, special education administrator and the districts that did not employ such an administrator are examined in light of the findings of the study.

CHAPTER FOUR

ANALYSIS OF THE DATA

Introduction

The purpose of this study was to examine whether a significant difference in the achievement of students with disabilities attending Missouri Public Schools existed when the schools employed a certificated special education administrator when compared to school districts not employing a certificated special education administrator. Free Appropriate Public Education (FAPE) is an entitlement to all students (Zirkel & Hetrick, 2017). If a difference in performance exists in public schools which employ a certificated special education administrator, compared to districts not, then Fishkin's theory (Fishkin, 2014) of Societal Limits causing Bottlenecks may apply employing a certificated special education administrator.

Chapter four, provided the organizations of results. The organization of results established how the data would be presented and how data is organized. The findings section follows the section, organization of results. The findings section presented the results of analytical tests. The limitation section addresses external issues that may invalidate the study. Data were obtained through DESE's data request system and uploaded into SPSS for analysis in an independent samples *t*-test. Inferential and descriptive statistics are presented in this chapter to answer the following research questions:

Research Questions

1. What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as

measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years (SYs) 2015-2016, 2016-2017, 2017-2018, and 2018-2019?

2. What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019?

The data collected were used to examine the null hypotheses:

Null Hypotheses

1. There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator when compared to districts without such an administrator, as measured by MAP ELA and mathematics achievement levels.
2. There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey.

The research questions were investigated by applying an independent samples *t*-test for each year and for each indicator including the academic scores from Missouri Achievement Program in the areas of English Language Arts and mathematics. Post-secondary data from the Special Education Profile were also an indicator.

Organization of Results

Research question one sought to analyze the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years (SYs) 2015-2016, 2016-2017, 2017-2018, and 2018-2019. The study includes data and results by each year with the testing of hypotheses organized by year as well.

The first hypothesis describing no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP ELA and mathematics achievement levels, was tested. Cohen's *d* was calculated for each achievement category. A summary of the data is presented for each year. Data gathered from each category was completed for each year: 2015-2016, 2016-2017, 2017-2018, and 2018-2019.

Research question two sought to analyze difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019

The second hypothesis describing no difference in the post-secondary success of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by post-secondary training or

competitive employment reported on the Missouri DESE's (n.d.b) follow up survey, was tested. Cohen's *d* was calculated for academic and post-secondary categories. A summary of the data is presented for each year: 2015-2016, 2016-2017, 2017-2018, and 2018-2019. The results are presented by year to answer the two primary research questions, and to test the null hypothesis.

School Year 2015-2016

RQ1a. What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years 2015-2016?

$H_0$1a There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by Missouri Assessment Program English Language Arts and mathematic achievement levels in the school year 2015-2016.

RQ2a. What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2015-2016?

$H_0$2a. There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by post-secondary training or competitive

employment reported on the Missouri DESE's (n.d.b) follow up survey in school year 2015-2016.

School Year 2016-2017

RQ1b. What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years 2016-2017?

$H_0$1b. There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by Missouri Assessment Program English Language Arts and achievement levels in the school year 2016-2017.

RQ2b. What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2016-2017?

$H_0$2b. There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school year 2016-2017.

School Year 2017-2018

RQ1c. What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years 2017-2018?

$H_0$1c. There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by Missouri Assessment Program English Language Arts and mathematics achievement levels in the school year 2017-2018.

RQ2c What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2017-2018?

$H_0$2c. There is no difference in the post-secondary success of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in the school year 2017-2018.

School Year 2018-2019

RQ1d What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years 2018-2019?

$H_0$1d. There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by Missouri Assessment Program English Language Arts and mathematics achievement levels in the school year 2018-2019.

RQ2d What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in the school years 2018-2019?

$H_0$2d. There is no difference in the post-secondary success of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school year 2018-2019.

The research questions and corresponding hypothesis were investigated by a quantitative analysis utilizing an independent samples *t*-test. An independent samples *t*-test was used to determine if a statistically significant difference exists between the

means in two independent groups of districts who employ a certificated special education administrator and districts which do not. Data was gathered for the following school years: 2015-2016, 2016-2017, 2017-2018 and 2018-2019.

The data request reflected data which was reported to the Missouri Department of Elementary and Secondary Education (DESE) by individual school districts and placed on DESE's data portal. Data were entered into Statistical Package for the Social Sciences (SPSS) to compare the means of the dependent variable. The dependent variable was the percentage of students with disabilities scoring proficient or advanced on the MAP assessment. The second dependent variable was the percentage of students with disabilities employed or continuing education after graduation.

Data Cleaning

Each public-school district reported to DESE whether or not the district employed a certificated special education administrator and if the administrator was appropriately certificated. Districts grouped as having a certificated special education administrator were labeled as "1," and districts not employing a certificated special education administrator were labeled as "0." Data was collected in Excel, then inputted into SPSS for analytics.

The Missouri Department of Elementary and Secondary Education (DESE) publishes the Special Education Profile, as an annual on line data base. The Special Education Profile, reports the number of students who scored proficient or advanced on the MAP assessment. The results for students with disabilities are reported in the Special Education Profile Report. The data from the Special Education Profile Report was entered into the researcher's Excel document with the corresponding school district. The

Missouri Department of Elementary and Secondary Education suppressed data from school districts having ten or fewer students in a category. School districts which had data suppressed were deleted from the data set.

Samples

The study utilized all Missouri public school districts having data not suppressed by DESE. The researcher requested the data from the school district the researcher is employed be deleted to minimized bias. Data was provided by DESE's data request system and was presented to the researcher in an Excel document. The total number of districts reporting data differed from year to year due to turnover in special education administrators and certification status.

Findings

The findings of the study are outlined below. The research questions are presented by year. There are three questions for each year. Findings are presented in achievement level in English Language Arts, mathematics, and post-secondary activity. Data was collected, organized and analyzed as planned.

Research question 1 (2015-2016)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts achievement levels in the school years 2015-2016?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and

districts without such an administrator, as measured by MAP ELA achievement levels in the school years 2015-2016.

Table 3 reflects the group statistics of the study. The table includes the number of participants and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores and standard error mean.

Table 3

Group Statistics for 2015-2016 Scores on ELA

	N	Mean	Std. Deviation	Std Error Mean
Certificated	121	29.7851	11.06282	1.00571
Non-certificated	162	33.1278	13.35598	1.04934

Table 4 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2015-2016 in the area of ELA. The data in Table 4 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 4

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.929	162	$p < .001$
Non-certificated	0.905	121	$p < .001$

Table 5 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference

between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level, in ELA scoring for the 2015-2016 school year.

Table 5

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient Advanced in English Language Arts for the School Year of 2015-2016.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-2.30	277.96	0.022	-3.34265	-6.20386	-0.48144

Of the 283 school districts with reportable data, 121 districts that employed a certificated special education administrator and 162 school districts did not employ a certificated special education administrator. An independent samples *t*-test was conducted to determine if differences in the percentage of students scoring proficient or advanced on the MAP assessment in the area of English Language Arts existed. The assumption of homogeneity of variances being violated, was assessed by Levene's test for equality of variances ($p = 0.017$). A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples *t*-test was robust enough to allow the test to continue. School districts which did not employ a certificated special education administrator had a higher percentage of students scoring proficient or advanced ($M = 33.13$, $SD = 13.36$)

than districts which did employ a certificated special education administrator (M = 29.79, SD =11.06), with a statistically significant difference, M = -3.34, 95% CI [-6.20, -0.48], $t(277.96) = -2.30$, $p = 0.022$. Therefore, the null hypothesis was rejected. Cohen's d was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 or larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's d was calculated at 0.02, which represents a very small effect size.

Research question 2 (2015-2016)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in mathematics achievement levels in the school years 2015-2016?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP mathematics achievement levels in the school year 2015-2016.

Table 6 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 6

Group Statistics for 2015-2016 MAP Data in Mathematics

	N	Mean	Std. Deviation	Std Error Mean
Certificated	96	19.4469	8.20294	.83721
Non-certificated	104	24.3096	12.27866	1.20402

Table 7 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2015-2016 in the area of mathematics. The data in Table 7 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 7

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.913	96	$p < 0.001$
Non-certificated	0.898	104	$p < 0.001$

Table 8 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level, in ELA scoring for the 2015-2016 school year.

Table 8

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient or Advanced in Mathematics for the School Year of 2015-2016.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-3.32	180.84	$p = 0.001$	-4.8627	-7.75637	-1.96911

Of the 200 districts having reportable data, 96 districts that employed a certificated special education administrator and 104 school districts did not employ certificated special education administrator. An independent samples *t*-test was run to determine if differences in the percentage of students scoring proficient or advanced on the MAP assessment in the area of Mathematics were present. The assumption of homogeneity of variances being violated, was assessed by Levene's test for equality of variances ($p = 0.005$). A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples *t*-test was robust enough to allow the test to continue. School districts which did not employ a certificated special education administrator had higher percentage of students scoring proficient or advanced ($M = 24.31$, $SD = 12.28$) than districts which did employ a certificated special education administrator ($M = 19.45$, $SD = 8.20$), with a statistically significant difference, $M = -4.86$, 95% CI [-7.76, -1.97], $t(180.84) = -3.32$, $p = 0.001$.Therefore, the null hypothesis was rejected. Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger demonstrates a large effect size (Creswell,

& Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.04, which represents a very small effect size.

Research question 3 (2015-2016)

What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school year 2015-2016?

Null: There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey for the school years 2015-2016.

Table 9 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 9

Group Statistics for 2015-2016 Data of Post-Secondary Activity

	N	Mean	Std. Deviation	Std Error Mean
Certificated	74	0.7212	0.16699	0.01941
Non-certificated	50	0.7386	0.17843	0.02523

Table 10 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2015-2016 in the area of Post-Secondary Activity. The data in table ten has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 10

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.973	50	$p < 0.001$
Non-certificated	0.973	74	$p = 0.116$

Table 11 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level, in post-secondary education for the 2015-2016 school year.

Table 11

Independent Samples t-test for Difference in the Percentage of Students who Reported as being Employed or Participating in Post-Secondary Education for the 2015-2016 School Year.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-0.552	122	0.582	-0.01736	-0.07958	0.04485

Of the 124 districts with reportable data, for the 2015-2016 school year, in the area of post-secondary activity, 74 school districts employed a certificated special education administrator and 50 school districts did not employ a certificated special education administrator. An independent-samples *t*-test was conducted to determine if differences in the percentage of students employed or enrolled in continuing education. A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples *t*-test was robust enough to allow the test to continue. There was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = 0.957$). School districts which did not employ a certificated special education administrator had a higher percentage of students who scored proficient or advanced ($M = 0.74$, $SD = 0.19$) than did school districts which employed a certificated special education administrator ($M = 0.72$, $SD = 0.18$), with a difference, $M = -0.02$, 95% CI [-0.08, 0.04], $t(122) = -0.55$, $p = 0.582$. Therefore, the null hypothesis failed to be rejected.

Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.58, which represents a medium effect size.

Research question 1 (2016-2017)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts achievement levels in the school year 2016-2017?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP ELA achievement levels in the school year 2016-2017.

Table 12 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 12

Group Statistics for 2016-2017 MAP Data in ELA

	N	Mean	Std. Deviation	Std Error Mean
Certificated	115	31.1748	11.39293	1.06240
Non-certificated	163	32.7497	13.44227	1.05288

Table 13 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2016-2017 in the area of ELA. The data in table 13 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 13

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.931	115	$p < 0.001$
Non-certificated	0.944	163	$p < 0.001$

Table 14 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level, in ELA for the 2016-2017 school year.

Table 14

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient Advanced in English Language Arts for the School Year of 2016-2017.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-1.023	276	0.307	-1.57491	-4.60427	-1.45445

Of the 278 districts that had reportable data, for the 2016-2017 school year, in the area of English Language Arts, 115 school districts employed a certificated special education administrator and 163 school districts did not employ a certificated special education administrator. An independent-samples *t*-test was conducted to determine if differences in the percentage of students scoring proficient or advanced in the area of ELA were present. A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples *t*-test was robust enough to allow the test to continue. There were homogeneity of variances, as assessed by Levene's test for equality of variances ($p = 0.072$). School districts which did not employ a certificated special education administrator had a higher percentage of students who scored proficient or advanced ($M = 32.75$, $SD = 13.44$) than did school districts which did employ a certificated special education administrator ($M = 31.17$, $SD = 11.39$), with a difference, $M = -1.57$, 95% CI [-4.60, -1.45], $t(276) = -1.02$, $p = 0.307$. Therefore, the corresponding null hypothesis failed to be rejected.

Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger demonstrates a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.01, which demonstrates a very small effect size.

Research question 2 (2016-2017)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education

administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in mathematics achievement levels in the school year 2016-2017?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP mathematics achievement levels in the school year 2016-2017.

Table 15 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 15

Group Statistics for 2016-2017 MAP Data in Mathematics

	N	Mean	Std. Deviation	Std Error Mean
Certificated	92	20.7087	9.73781	1.01524
Non-certificated	106	24.2764	13.38185	1.29976

Table 16 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2016-2017 in the area of mathematics. The data in Table 16 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 16

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.892	92	$p < 0.001$
Non-certificated	0.884	106	$p < 0.001$

Table 17 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level, in mathematics for the 2016-2017 school year.

Table 17

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient Advanced in English Language Arts for the School Year of 2016-2017.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-2.163	190.42	0.032	-3.56772	-6.82090	-.31454

Of the 198 districts having reportable data, 92 districts employed a certificated special education administrator and 106 school districts did not employ a certificated special education administrator. An independent samples *t*-test was conducted to determine if differences in the percentage of students scoring proficient or advanced on

the MAP assessment in the area of mathematics existed. The assumption of homogeneity of variances being violated, was assessed by Levene's test for equality of variances (p = 0.02) A few outliers were present in the data; however, the independent samples t-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples t-test was robust enough to allow the test to continue. School districts which did not employ a certificated Special Education Administrator had a higher percentage of students scoring proficient or advanced (M = 24.28, SD = 13.38) than did districts which employed a certificated special education administrator (M = 20.71, SD =9.74), with a statistically significant difference, M = -3.57, 95% CI [-6.82, -0.31], $t(190.42) = -2.16$, $p = 0.032$. Therefore, the null hypothesis was rejected. Cohen's d was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's d was calculated at 0.026, which represents a very small effect size.

Research Question 3 (2016-2017)

What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school year 2016-2017?

Null: There is no difference in the post-secondary success of students with disabilities in districts with a certificated special education administrator and districts

without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey for the school years 2016-2017.

Table 18 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 18

Group Statistics for 2016-2017 Post-secondary Activity

	N	Mean	Std. Deviation	Std Error Mean
Certificated	65	0.7064	0.16654	0.02066
Non-certificated	53	0.7376	0.18262	0.02508

Table 19 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2016-2017 in the area of Post-Secondary Activity. The data in table 19 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 19

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.936	65	0.002
Non-certificated	0.937	53	0.007

Table 20 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The

difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level in post-secondary education for the 2016-2017 school year.

Table 20

Independent Samples t-test for Difference in the Percentage of Students who Reported as being Employed or Participating in Post-Secondary Education for the School Year 2016-2017.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-0.969	116	0.335	-0.03118	-0.09494	0.03257

Of the 118 districts which had reportable data, for the 2016-2017 school year, in the area of post-secondary activity, there were 65 school districts which employed a certificated special education administrator and 53 school districts which did not employ a certificated special education administrator. An independent-samples *t*-test was conducted to determine if differences in the percentage of students which were employed or enrolled in continuing education demonstrated. A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test (p = 0.002); however, the independent samples *t*-test was robust enough to allow the test to continue. There was homogeneity of variances, as assessed by Levene's test for equality of variances (p = 0.595). School districts which did not employ

a certificated special education administrator had a higher percentage of students who scored proficient or advanced (M = 0.74, SD = 0.18) than did school districts which employed a certificated special education administrator (M = .71, SD = 0.17), with a difference, M = -0.03, 95% CI [-0.09, 0.03], $t(116) = -0.97$, p = 0.335 Therefore, the null hypothesis failed to be rejected.

Cohen's d was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's d was calculated at 1.02, which represents a large effect size.

Research question 1 (2017-2018)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts achievement levels in the school year 2017-2018?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP ELA achievement levels in the school year 2017-2018.

Table 21 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 21

Group Statistics for 2017-2018 MAP Data in ELA

	N	Mean	Std. Deviation	Std Error Mean
Certificated	113	19.1301	8.90647	0.83785
Non-certificated	106	22.4047	9.57897	0.93039

Table 22 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2016-2017 in the area of ELA. The data in table 22 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 22

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.873	113	$p < 0.001$
Non-certificated	0.937	106	$p < 0.001$

Table 23 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level in ELA for the 2017-2018 school year.

Table 23

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient Advanced in English Language Arts for the School Year of 2017-2018.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-2.622	217	0.009	-3.27463	-5.73661	-0.81265

Of the 219 districts having reportable data, for the 2017-2018 school year, in the area of English Language Arts, 113 school districts which employed a certificated special education administrator and 106 school districts which did not employ a certificated special education administrator. An independent-samples *t*-test was conducted to determine if differences in the percentage of students scoring proficient or advanced in English Language Arts was present. A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples *t*-test was robust enough to allow the test to continue. There was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = 0.252$). School districts which did not employ a certificated special education administrator had a higher percentage of students who scored proficient or advanced ($M = 22.40$, $SD = 9.58$) than did school districts which employed a certificated special education administrator ($M = 19.13$, $SD = 8.90$), with a statistically significant difference, $M =$ -3.27, 95% CI [-5.74, -0.81], $t(217) = -2.62$, $p = 0.009$. Therefore, the null hypothesis was rejected.

Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.04, which represents a very small effect size.

Research question 2 (2017-2018)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in mathematics achievement levels in the school year 2017-2018?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP mathematics achievement levels in the school year 2017-2018.

Table 24 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 24

Group Statistics for 2017-2018 MAP Data in Mathematics

	N	Mean	Std. Deviation	Std Error Mean
Certificated	89	14.9337	6.72039	0.71236
Non-certificated	82	20.4293	12.44116	1.37390

Table 25 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2016-2017 in the area of mathematics. The data in table 25 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 25

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.896	89	$p < 0.001$
Non-certificated	0.877	82	$p < 0.001$

Table 26 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level in mathematics for the 2017-2018 school year.

Table 26

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient Advanced in English Language Arts for the School Year of 2017-2018.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-3.551	122.27	$p = 0.001$	-5.49556	-8.55911	-2.43201

Of the 172 districts having reportable data, 89 districts employed a certificated special education administrator and 82 school districts did not employ a certificated special education administrator. An independent samples *t*-test was conducted to determine if differences in the percentage of students scoring proficient or advanced on the MAP assessment in the area of mathematics were present. The assumption of homogeneity of variances being violated, was assessed by Levene's test for equality of variances ($p < 0.001$). A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples *t*-test was robust enough to allow the test to continue. School districts which did not employ a certificated special education administrator had a higher percentage of students scoring proficient or advanced ($M = 20.43$, $SD = 12.44$) than did districts which employed a certificated special education administrator ($M = 14.93$, $SD = 6.72$),with a statistically significant difference, $M = -5.50$, 95% CI [-8.56, -2.43], $t(122.27) = -3.55$, $p = 0.001$. Therefore, the null hypothesis was rejected.

Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.05, which represents a very small effect size.

Research question 3 (2017-2018)

What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school year 2017-2018?

Null: There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey for the school year 2017-2018.

Table 27 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 27

Group Statistics for 2017-2018 Post-secondary Activity

	N	Mean	Std. Deviation	Std Error Mean
Certificated	71	0.7178	0.16082	0.01909
Non-certificated	47	0.6952	0.21085	0.03076

Table 28 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2017-2018 in the area of Post-Secondary Activity. The data in table 28 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 28

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.956	71	0.013
Non-certificated	0.955	47	0.067

Table 29 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level in post-secondary education for the 2017-2018 school year.

Table 29

Independent Samples t-test for Difference in the Percentage of Students who Reported as being Employed or Participating in Post-Secondary Education for the School Year of 2017-2018.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
0.661	116	0.510	0.02265	-0.04525	0.09056

Of the 118 districts having reportable data, for the 2017-2018 school year, in the area of post-secondary activity, 71 school districts employed a certificated special education administrator and 47 school districts did not employ a certificated special education administrator. An independent-samples *t*-test was conducted to determine if differences in the percentage of students which employed or enrolled in continuing education were present. A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. The percentage of students participating in a post-secondary activity were normally distributed, as assessed by Shapiro-Wilk's test ($p = 0.013$). There was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = 0.061$). School districts which did not employ a certificated special education administrator had a higher percentage of students who scored proficient or advanced ($M = 0.70$, $SD = 0.21$) than did school districts which employed a certificated special education administrator ($M = 0.72$, $SD = 0.16$), with a difference, $M = 0.02$, 95% CI [-0.05, 0.09], $t(116) = 0.66$, $p = 0.510$. Therefore, the null hypothesis failed to be rejected.

Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, &

Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.64, which represents a medium effect size.

Research question 1 (2018-2019)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts achievement levels in the school year 2018-2019?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP ELA achievement levels in the school year 2018-2019.

Table 30 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 30

Group Statistics for 2018-2019 MAP Data in ELA

	N	Mean	Std. Deviation	Std Error Mean
Certificated	105	18.4790	7.0420	0.68723
Non-certificated	99	20.8687	9.91426	0.99642

Table 31 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school

year 2018-2019 in the area of ELA. The data in table 31 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 31

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.966	105	$p = 0.008$
Non-certificated	0.090	99	$p < 0.001$

Table 32 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level in ELA for the 2018-2019 school year.

Table 32

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient Advanced in English Language Arts for the School Year of 2018-2019.

				95% Confidence	Interval
t	df	Sig.	Mean Diff	Lower	Upper
-1.974	175.903	.050	-2.38964	-4.77847	-.00081

Of the 204 school districts having reportable data, 105 districts employed a certificated special education administrator and 99 school districts did not employ a

certificated special education administrator. An independent samples *t*-test was conducted to determine if differences in the percentage of students scoring proficient or advanced on the MAP assessment in the area of English Language Arts was present. The assumption of homogeneity of variances being violated, was assessed by Levene's test for equality of variances ($p = 0.017$). A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.008$); however, the independent samples *t*-test was robust enough to allow the test to continue. School districts which did not employ a certificated special education administrator had a higher percentage of students scoring proficient or advanced ($M = 20.87$, $SD = 9.91$) than did districts which did employ a certificated special education administrator ($M = 18.48$, $SD = 7.04$), the difference, $M = -2.39$, 95% CI [-4.78, -0.0008], $t(175.90) = -1.97$, $p = 0.05$. Therefore, the null hypothesis failed to be rejected.

Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.03, which demonstrates a very small effect size.

Research question 2 (2018-2019)

What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in mathematics achievement levels in the school year 2018-2019?

Null: There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP mathematics achievement levels in the school year 2018-2019.

Table 33 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 33

Group Statistics for 2018-2019 MAP Data in Mathematics

	N	Mean	Std. Deviation	Std Error Mean
Certificated	95	15.0074	7.561331	0.77577
Non-certificated	79	20.3949	12.78273	1.43817

Table 34 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2017-2018 in the area of mathematics. The data in table 34 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 34

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.864	95	$p < 0.001$
Non-certificated	0.748	79	$p < 0.001$

Table 35 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level in mathematics for the 2018-2019 school year.

Table 35

Independent Samples t-test for Difference in the Percentage of Students who Scored Proficient Advanced in mathematics for the School Year of 2018-2019.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-3.297	121.462	$p = 0.001$	-5.38757	-8.62250	-2.15264

Of the 174 districts having reportable data, 95 districts employed a certificated special education administrator and 79 school districts did not employ a certificated special education administrator. An independent samples *t*-test was conducted to determine if differences in the percentage of students scoring proficient or advanced on the MAP assessment in the area of mathematics was present. The assumption of homogeneity of variances being violated, was assessed by Levene's test for equality of variances ($p = 0.013$). A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.001$); however, the independent samples *t*-test was robust enough to allow the test to continue.

School districts which did not employ a certificated special education administrator had a higher percentage of students scoring proficient or advanced (M = 20.39, SD = 12.78) than did districts which employed a certificated special education administrator (M = 15.00, SD =7.56), with a statistically significant difference, M = -5.39, 95% CI [-8.62, -2.15], $t(121.46) = -3.30$, $p = 0.001$. Therefore, the null hypothesis was rejected.

Cohen's d was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's d was calculated at 0.05, which represents a very small effect size.

Research Question 3 (2018-2019)

What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school year 2018-2019?

Null: There is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey for the school year 2018-2019.

Table 36 reflects the group statistics of the study. The table including the number of participants, and the mean percentage of students scoring proficient or advanced. The table presents the standard deviation of scores, and standard error mean.

Table 36

Group Statistics for 2018-2019 Post-secondary Activity

	N	Mean	Std. Deviation	Std Error Mean
Certificated	57	0.6912	0.15869	0.02102
Non-certificated	48	0.6963	0.20616	0.0296

Table 37 displays the Shapiro-Wilk's Test of Normality. The table includes statistic, *df*, and significance of the normality variance. The table represents the school year 2018-2019 in the area of Post-Secondary Activity. The data in table 37 has been analyzed with Shapiro-Wilk's test to determine if data is normally distributed.

Table 37

Shapiro-Wilk Tests of Normality

	Statistic	*df*	Sig.
Certificated	0.950	57	0.015
Non-certificated	0.950	48	0.038

Table 38 reflects the significance of the difference in school districts which employ a certificated special education administrator and district which do not. The difference between means is presented. A negative mean difference values indicates districts without certificated special education administrators had a higher mean, while positive mean values illustrate districts having certificated special education administrators had a higher mean. The table also displays *t* values, *df* values as well as upper and lower confidence level in post-secondary education for the 2018-2019 school year.

Table 38

Independent Samples t-test for Difference in the Percentage of Students who Reported as being Employed or Participating in Post-Secondary Education for the School Year of 2018-2019.

				95% Confidence	Interval
t	*df*	Sig.	Mean Diff	Lower	Upper
-0.139	87.352	0.890	-0.00506	-0.07747	0.06735

Of the 105 districts having reportable data, for the 2018-2019 school year, in the area of post-secondary activity, 57 school districts employed a certificated special education administrator and 48 school districts did not employ a certificated special education administrator. An independent-samples *t*-test was conducted to determine if differences in the percentage of students employed or enrolled in continuing education were present. A few outliers were present in the data; however, the independent samples *t*-test accommodated for the few outliers present. Achievement means for each district were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.015$); however, the independent samples *t*-test was robust enough to allow the test to continue. The assumption of homogeneity of variances being violated, was assessed by Levene's test for equality of variances ($p = 0.041$). School districts which did not employ a certificated special education administrator had a higher percentage of students who scored proficient or advanced ($M = 0.70$, $SD = 0.21$) than did school districts which employed a certificated special education administrator ($M = 0.69$, $SD = 0.16$), with a difference, $M =$

-0.005, 95% *CI* [-0.08, 0.07], $t(87.35) = -0.14$, $p = 0.89$. Therefore, the null hypothesis failed to be rejected.

Cohen's *d* was used to measure effect size. A small effect value is at or below 0.2. Medium effect size is 0.5, and 0.8 and larger represents a large effect size (Creswell, & Creswell, 2018; Gay, Mills, & Airasian, 2009; Pelham, 2013). Cohen's *d* was calculated at 0.15, which represents a small effect size.

Limitations

The limitations of this study may be the school districts not represented in the data. The study was based on DESE's open access data base, which included school districts with reportable data. The Missouri Department of Elementary and Secondary Education suppressed data from districts with a participant group less than 10. The school districts with data suppressed by DESE due to a small sample size caused a disproportionate representation of school districts in the form of *N* values. Disproportionate suppression of data might have affected the findings. The use of an independent samples *t*-test based on reportable data was unable to analyze the performance of the non-reporting school districts.

Summary

The statistical analysis and results of this study sought to examine the differences between school districts which employ a certificated special education administrator and school districts which do not employ a certificated special education administrator. The results of performance indicators for years 2015-2016, 2016-2017,2017-2018, and 2018-2019 were reported. Two research questions were analyzed, along with each

corresponding null hypotheses. Based on the data, the researcher was unable to reject the null hypotheses.

Null Hypothesis One, there is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP ELA and mathematics achievement levels The null hypotheses was rejected for every year except for school years 2016-2017 and 2018-2019 in the area of English Language Arts. The analysis of Cohen's *d* demonstrated the effect as small or very small in every case as it applied to Hypothesis one.

Table 39 displays the results of the null hypotheses for student achievement, and the effect size. The data is arranged by school year. The table displays if the null hypotheses were rejected or failed to be rejected. The table illustrates the size of the effect whether large, medium or small.

Table 39

The Null Hypotheses by Year Whether or Not the Null Hypothesis was Rejected.

Year	English Language Arts	Effect Size	Mathematics	Effect
2015-2016	Rejected ($p = 0.022$)	Small ($d = 0.02$)	Rejected ($p = 0.001$)	Small ($d = 0.04$)
2016-2017	Failed to reject ($p = 0.307$)	Small ($d = 0.01$)	Rejected ($p = 0.032$)	Small ($d = 0.026$)
2017-2018	Rejected ($p = 0.009$)	Small ($d = 0.04$)	Rejected ($p = 0.001$)	Small ($d = 0.05$)
2018-2019	Failed to reject ($p = 0.05$)	Small ($d = 0.03$)	Rejected ($p = 0.001$)	Small ($d = 0.05$)

Null Hypothesis Two, there is no difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator and districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey, was not rejected. The four years which were examined, each resulted in an analysis which failed to reject the null hypotheses. The analysis of Cohen's *d* resulted in a large effect size except for the school year of 2018-2019.

Table 40 shows results of the null hypotheses for student post-secondary activity, and the effect size. The data is arranged by school year. The table displays if the null hypotheses were rejected or failed to be rejected. The table illustrates the size of the effect whether large, medium or small.

Table 40

The Null Hypothesis by Year and Effect Size.

Year	Post-Secondary Activity	Effect
2015-2016	Failed to be rejected ($p = 0.582$)	Medium ($d = 0.58$)
2016-2017	Failed to be rejected ($p = 0.335$)	Large ($d = 1.02$)
2017-2018	Failed to be rejected ($p = 0.510$)	Medium ($d = 0.64$)
2018-2019	Failed to be rejected ($p = 0.890$)	Small ($d = 0.15$)

The results of the study produced a mixed result of some statistical significance and some not. In the areas demonstrating significance, the effect was small. In general terms there was not a difference in student performance whether or not the school district employed a certificated special education administrator.

In the following chapter, the researcher will present conclusions, implications for practice and recommendations for further research. The researcher interprets the data and offers applications to the findings of chapter four. The conclusion, implications for practice and recommendations are based on the results articulated in chapter four.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

Introduction

This study sought to examine differences in school districts employing versus not employing a certificated Special Education Administrator for the school years of 2015-2016, 2016-2017, 2017-2018, and 2018-2019. By analyzing the differences in performance data, the researcher was able to compare school districts which employed and did not employ a certificated special education administrator. After a careful analytical process, the researcher was able to make recommendations based on the implications of the data. This chapter includes the research questions, a summary of the findings, implications of the data, recommendations from the researcher, and conclusions.

Research Questions

1. What is the difference in the achievement of students, in grades three through eight, with disabilities in public schools with a certificated, special education administrator, when compared to school districts without such an administrator, as measured by Missouri Assessment Program in English Language Arts and mathematics achievement levels in the school years (SYs) 2015-2016, 2016-2017, 2017-2018, and 2018-2019?
2. What is the difference in the post-secondary success of students with disabilities in districts with a certificated, special education administrator when compared to districts without such an administrator, as measured by post-secondary training or competitive employment reported on the Missouri DESE's (n.d.b) follow up survey in school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019?

Null Hypotheses

1. There is no statistically significant difference in the achievement of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by MAP ELA and mathematics achievement levels.
2. There is no difference in the post-secondary success of students with disabilities in districts with a certificated special education administrator and districts without such an administrator, as measured by the Missouri DESE (n.d.b) follow up survey.

Summary of Findings

Each research question was investigated through a quantitative analysis to test the corresponding hypothesis. An independent samples *t*-test was used to measure significance. Cohen's *d* was used to measure the effect of the differences. The findings from the data were organized by school year. Each research question was broken into sub-questions by the school year and then by each performance indicator. Research questions were used to investigate whether a difference in performance existed in the indicators of MAP ELA, MAP mathematics, and post-secondary activity.

For the school year 2015-2016, in the area of ELA, school districts which did not employ a certificated special education administrator reported a statistically significant difference in students scoring proficient or advanced on the ELA section of the MAP assessment. The analytics demonstrated a significant difference of $M = -3.34$, 95% CI [-6.20, -0.48], $t(277.96) = -2.30$, $p = 0.022$, but Cohen's d of 0.02 demonstrated a difference had a very small effect. In general terms, the analytics demonstrated a

difference in the performance of students; however, the difference had a very small effect size.

In the school year 2015-2016, in the area of mathematics, school districts which did not employ a certificated special education administrator reported a statistically significant difference in students scoring proficient or advanced on the mathematics section of the MAP assessment. The analytics did demonstrate a significant difference of M = -4.86, 95% CI [-7.76, -1.97], t(180.84) = -3.32, p = 0.001, but Cohen's d of 0.04 demonstrated a difference had a very small effect size. In general terms, the analytics demonstrated a difference in the performance of students; however, which difference had a very small effect size.

In the school year 2015-2016, in the area of post-secondary activity, school districts which did not employ a certificated Special Education Administrator reported statistically non-significant differences in student participation of post-secondary activities. The analytics demonstrated a non-significant difference of M = -0.017, 95% CI [-0.08, 0.04], t(122) = -0.55, p = 0.582, but Cohen's d of 0.58 demonstrated difference had a medium effect size. In general terms, the analytics did not demonstrate a significant difference in the performance of students; however, the small difference had a medium effect size.

In the school year 2016-2017, in the area of ELA, school districts which did not employ a certificated special education administrator reported a statistically non-significant difference in students scoring proficient or advanced on the ELA section of the MAP assessment. The analytics demonstrated a non-significant difference of M = -1.57, 95% CI [-4.60, -1.45], t(276) = -1.02, p = 0.307, but Cohen's d of 0.01

demonstrated difference had a very small effect size. In general terms, the analytics demonstrated a difference in the performance of students; however, the difference had a very small effect.

In the school year 2016-2017, in the area of mathematics, school districts which did not employ a certificated special education administrator reported a statistically significant difference in students scoring proficient or advanced on the mathematics section of the MAP assessment. The analytics demonstrated a significant difference of M = -3.57, 95% CI[-6.82, -0.31], t(190.42) = -2.16, p = 0.032, but Cohen's d of 0.03 demonstrated a difference had a very small effect size. In general terms, the analytics demonstrated a difference in the performance of students; however, the difference had a very small effect size.

In the school year 2016-2017, in the area of post-secondary activity, school districts which did not employ a certificated special education administrator reported a statistically non-significant difference in student participation in post-secondary activities. The analytics demonstrated a non-significant difference of M = -0.03, 95% CI [-0.09, 0.03], t(116) = -0.97, p = 0.335. Cohen's d of 1.02 demonstrated a difference had a large effect size. In general terms, the analytics demonstrated a difference in the performance of students, and the difference had large effect size.

In the school year 2017-2018, in the area of ELA, school districts which did not employ a certificated special education administrator reported a statistically significant difference in students scoring proficient or advanced on the ELA section of the MAP assessment. The analytics demonstrated a significant difference of M = -3.27, 95% CI [-5.74, -0.81], t(217) = -2.62, p = 0.009, but Cohen's d of 0.04 demonstrated the

difference had a very small effect size. In general terms, the analytics demonstrated a difference in the performance of students; however, the difference had a very small effect size.

In the school year 2017-2018, in the area of mathematics, school districts which did not employ a certificated special education administrator reported a statistically significant difference in students scoring proficient or advanced on the ELA section of the MAP assessment. The analytics did show a significant difference of M = -5.50, 95% CI [-8.56, -2.43], $t(122.27) = -3.55$, $p = 0.001$, but Cohen's d of 0.05 demonstrated difference had a very small effect size. In general terms, the analytics demonstrated a difference in the performance of students; however, the difference had a very small effect size.

In the school year 2017-2018, in the area of post-secondary activity, school districts which did not employ a certificated special education administrator reported a statistically non-significant difference in students scoring proficient or advanced on the ELA section of the MAP assessment. The analytics demonstrated a non-significant difference of $M = 0.02$, 95% CI [-0.05, 0.09], $t(116) = 0.66$, $p = 0.510$, but Cohen's d of 0.64 demonstrated difference had a medium effect size. In general terms, the analytics did not represent a significant difference in the performance of students; however, the difference had a medium effect size.

In the school year 2018-2019, in the area of ELA, school districts which did not employ a certificated special education administrator reported a non-statistically significant difference in students scoring proficient or advanced on the ELA section of the MAP assessment. The analytics demonstrated a non-significant difference of

M = -2.39, 95% *CI* [-4.78, -0.0008], *t*(175.9) = -1.97, *p* = 0.05, but Cohen's *d* of 0.03 demonstrated the difference had a very small effect size. In general terms, the analytics demonstrated a difference in the performance of students; however, the difference had a very small effect size.

In the school year 2018-2019, in the area of mathematics, school districts which did not employ a certificated special education administrator reported a statistically significant difference in students scoring proficient or advanced on the mathematics section of the MAP assessment. The analytics demonstrated a significant difference of *M* = -5.39, 95% *CI* [-8.62, -2.15], *t*(121.46) = -3.30, *p* = 0.001, but Cohen's *d* of 0.05 demonstrated difference had a very small effect size. In general terms, the analytics demonstrated a difference in the performance of students; however, the difference had a very small effect size.

In the school year 2018-2019, in the area of post-secondary activity, school districts which did not employ a certificated special education administrator reported a statistically non-significant difference of students participating in post-secondary activities. The analytics demonstrated a non-significant difference of *M* = -0.005, 95% *CI* [-0.08, 0.07], *t*(87.35) = -0.14, *p* = 0.89, but Cohen's *d* of 0.15 demonstrated difference had a very small effect size. In general terms, the analytics did not demonstrate a difference in the performance of students, and the difference had a small effect size.

Discussion

The results of the study can be interpreted as a significant difference is evident in regard to the school districts which employ a certificated special education versus the school districts which do not employ a certificated special education administrated in all

but two years in the area of ELA. School districts which did not employ a certificated special education administrator had a higher average of students in the proficient and advanced categories of the MAP assessment. The effect of the difference however, was small.

The results of the study run counter to the current literature on leadership. The preponderance of literature suggests increased education results in higher-performing administrators and increased performance of administrators have a positive effect on the performance of students (Barreau & McIntosh, 2020; Khumalo, 2019; Lick et al., 2013; Rinehart, 2017). The results of this study were unable to identify a quantifiable increase in student performance between districts which did or did not employ a certificated special education administrator. The inability to find a measurable difference may be due to the extreme diversities within the special education population. However, this study did have significant participation which should have normalized population variances. When considering the multiple factors which may have affected outcomes, particularly the vast literature on leadership and leadership's effect on student performance, it may be unreasonable to assume certification contributes to lower student performance.

In this study, the researcher sought to test Williams' (2005) Starting Gate Theory, developed originally in 1962, and Fishkin's (2014) Theory of Opportunity Pluralism. The results of the study do add understanding to how opportunity is provided to students with disabilities. Although results may be uncertain as to the effect special education leadership has on student performance, the results do illustrate school districts without a certificated special education administrator can, and sometimes do, perform comparably to districts with certificated special education administrators. It is clear the lack of a

certificated special education administrator does not necessarily create a bottleneck to equal opportunity. Considering William's (2005) example of the farmer and hunter society, if farmers were able to compete and win the hunting competition, then the farmers would have had opportunity to elevate their social status. Applying this theory to the research questions of differences in student performance, when provided access to certificated administration, the students without certificated administration performed comparable to students with access to certificated administration. Therefore, the test of the Theory of Opportunity Pluralism indicates students have not been denied access to appropriate education based on the certification or lack of certification of the administrator.

Some findings gathered from the study were not anticipated in the initial study design. The disproportionate suppression of data created questions concerning why more districts without a certificated special education administrator had a higher suppression rate than districts with a special education administrator. The Missouri DESE set a suppression number at ten. Therefore, districts with less than ten participants in any category would be suppressed. The interesting factor is the disproportionality of suppression. For example, in the 2015-2016 school year in the area of ELA, 68% of districts with a certificated special education administrator had at least ten students scoring proficient or advanced on the ELA part of the MAP. Only 42% of school districts which did not have a certificated special education administrator had at least ten students score proficient or advanced. Therefore, 58% of the districts were suppressed from the data set. Similarly, in the 2015-2016 school year, mathematics results included 54% that had at least ten students scoring proficient or advanced when the district employed a

certificated special education administrator compared to only 27% when the district did not employ a special education administrator. Finally, in the area of post-secondary activity, 42% of districts employing a certificated special education administrator had students with reportable data. In comparison, 13% of districts not employing a certificated administrator had reportable data. Each year of the study varied in exact percentage, but all years disproportionally suppressed data at a greater suppression rate for districts which did not employ a certificated special education administrator. In the area of English Language Arts for school year 2015-2016, 26% more districts who employed a certificated special education administrator had at least ten students in the proficient or advanced category. In the area of mathematics for school year 2015-2016, 27% more districts who employed a certificated special education administrator had at least ten students in the proficient or advanced categories. In post-secondary activities, 29% of districts who employed a certificated special education administrator had at least ten students participating in post-secondary activity.

This study was limited by the study design to the participation of school districts in the state of Missouri. The Missouri Department of Elementary and Secondary Education further limited the study by suppressing datasets which were smaller than ten participants. The accuracy of the Missouri DESE (n.d.b) published data, and the suppression rate were also limitations to the breadth of the study. Additionally, the study was limited to performance data published for school years 2015-2016, 2016-2017, 2017-2018, and 2018-2019. The honest response of students on the post-graduation follow up survey and the ability to acquire the data was also a limitation as is evidenced by a reduced number of districts having reportable data. The number of students without

disabilities were not considered in this study as the only certification area considered was the special education administrator certification. A non-certificated administrator with teaching certification in special education may logically perform better than a non-certificated administrator with a teaching certification in an area other than special education. Lastly, the study did not consider the years of service or experience of the administrator.

During the course of this study, developments from the Missouri DESE have discontinued the certification of special education administrators. All administrators will be certified simply as a school administrator. Certificated school administrators can then become endorsed in special education. The Missouri Department of Elementary and Secondary Education has created an endorsement program named, Missouri Pathway for Aspiring Leaders (MOPAL). MOPAL is a three-year program sponsored by Missouri DESE. The online platform guides candidates through modules of learning as well as cohort learning experiences, coaching and mentoring. The goal is to increase the number of qualified special education directors and inspiring them to be innovative leaders of research-based approaches to support students with disabilities (DESE, 2020). Prerequisites to participation in MOCAP include:

1. Current Missouri administrator certification
2. Employed in a Missouri school district
3. Endorsement from current school district
4. Completed application with brief personal statement describing interest
5. Resume with evidence of leadership in current role

6. Transcripts
7. Status of teaching and administrator certification
8. Commitment to complete the three-year program
9. Commitment to work as a special education director after completion

Professional Implications

In general terms, this study has identified students led by administrators not certificated in special education can perform as well as students led by administrators certificated as special education administrators. The application of the study applies to the Missouri Department of Elementary and Secondary Education as it creates pre-service programing for special education administrators. The study also provided insight into the theoretical framework of Williams and Fishkin as the study examined access to opportunity and societal limits (Williams & Hawthorn, 2008; Williams 2005; Fishkin, 2014).

The findings of the study may suggest certification in school administration transfers well to the needs of all students. Administrative leadership skills may be transferable to teachers regardless of the disciple the teacher instructs. The study did identify not all districts employing certificated special education administrators scored well enough to have the minimum of ten students in the proficient or advanced category, therefore certification of the special education administrator alone, does not ensure academic and post-secondary success. The literature did reveal special education administrator competencies considered essential for administrators of special education, yet the curricular standards for administrators to achieve special education certification

did not align to the essential competencies for special education administrators. (Missouri Secretary of State: Code of Regulations, 2020; Fan et al., 2019; Billingsley, 2005; Miller, 2018).

This study has implications to improve pre-service education for aspiring special education administrators. The lack of student performance differences in certificated special education administrators and non-certificated special education administrators may indicate low effectiveness in pre-service experiences. The criteria set by the Missouri DESE (Missouri Secretary of State: Code of Regulations, 2020) does not align with the CEC special education administrators needed competencies (Fan et al., 2019). The current requirements to become certificated do not address any of the performance indicators the CEC has identified as critical. Literature suggest as administrators earn additional degrees they experience increased administrative performance. (Khumalo, 2019; Rinehart, 2017) however this study did not confirm the expected result in the context of special education administrators and student performance.

This study has implications for educational organizations, when selecting candidates for the position of special education administrator. Factors other than certification should be included in the selection process. Evaluating candidates on the Counsel for Exceptional Children (CEC)'s 21 Essential Competencies for Special Education Administration (Fan et al., 2019), may be a better predictor of success than certification in special education administration alone. Organizations seeking to employ special education administrators should not limit the applicant pool to only special education certificated administrators.

Free Appropriate Public Education (FAPE) is a requirement of IDEA. This study has evidenced students under the leadership of non-certificated special education administrators can and have performed as well as students under the leadership of a certificated special education administrator. Applying the results of the study to FAPE, it is clear the employment of non-certificated administration has not violated equal opportunity. This study has evidenced of any arguments FAPE was denied based on the lack of certificated special education administrator would not be creditable.

The results of this study apply to persons wanting to ensure equal and equitable opportunity is provided to students with disabilities. The implication is inequitable opportunity violates appropriate education as required by FAPE. This study sought to test equal opportunity theories and found employing a non-certificated administrator does not limit the opportunity of FAPE. Employing a non-certificated special education administration did not limit performance nor post-secondary successes of students with disabilities. The utilization of a non-certificated special education administrator did not create a bottleneck or create a societal restriction limiting the opportunity for students with disabilities (Williams & Hawthorn, 2008; Williams, 2005; Fishkin, 2014).

Recommendations for Future Research

It is recommended that this study be replicated with unsuppressed student performance data. This study found the differences in data reported were not congruent with current literature implications. Overwhelmingly, the research suggests earning advanced academic degrees will increase an administrator's performance, and this increase in the performance of an administrator will affect student performance (Barreau & McIntosh, 2020; Khumalo, 2019; Lick et al., 2013; Rinehart, 2017). This study did not

confirm a correlation between increased education and increased student performance in the area of certificated special education administration. A limitation of this study included DESE suppressing data when fewer than ten participants scored in a given level of performance. Future research with unsuppressed data is essential to understanding the relationship between certificated special education administrators and student performance.

The Counsel for Exceptional Children (CEC) recommends specific competencies for administrators of special education. From those competencies six themes emerged as critical skills. Special education administrators must have the ability to monitor assessments implementation as they apply to student's identification as disabled. Special education administrators need a high knowledge of assessments results and the ability to for the evaluation results to the categorical criteria to identify students appropriately. Curricular content knowledge is necessary for administrators of special education in order to implement meaningful professional development and offering adaptive and assistive technologies to augment education for students with disabilities. Special education directors must also be proficient in programs services and outcomes. The ability to guide teachers in best practices, accommodations and modifications for students. Special education administrators must have a good understanding of laws and compliance standards to operate programs ethically and legally. Special education administrators need to possess leadership skills to support teachers, develop a vision, budgeting and law compliance. The last area identified as a critical skill set is professional and ethical practices. The special education administrators need to have skills to involve stakeholders, communicate and develop staff.

Questions from this study spring from the effectiveness of the current pre-service experiences provided to aspiring special education administrators. (Silveira- Zaldivar & Curtis, 2019; Roberts, Ruppar, & Olson, 2018). The CEC has published competencies needed by special education administrators. Missouri DESE has not utilized the competencies in the credentialing process of a certificated special education administrator. The current requirements to be certificated are item completions of tasks. The only additional task to be certificated as a special education administrator, over an administrator, is to be recommended by an approved university and have a special education teaching certification. However, the standards to become an administrator are significant. Several administration standards are very similar to special education administrator standards and it is likely that at least some skills are transferable. The Interstate School Leaders Licensure Consortium (ISLLC) has indicated all administrators should be able to promote learning by stewarding a shared vision, cultivating school culture, managing of operations, mobilize community resources, and behave in an ethical manner. The last standard is that administrators must implement these skills by understanding the community context in which they apply. Research is needed to gain insight into the interplay of the competencies and the expectations put on special education administrators (Fan et al., 2019).

The study indicators should align with the objectives of the special education administrator certification program. This study used academic and post-secondary activities as performance indicators, in order to answer the research questions. However, the certification process does not identify student academics or post-secondary student success as objectives of special education certification (*Rules of Department of*

Elementary And Secondary Education, 2020). Further research utilizing indicators of budgetary or compliance indicators may attribute to certification as a special education administrator.

Based on the preceding information the following are recommendations for further research.

1. Future research on student performance and administrative certification with complete unsuppressed data is needed.
2. Future research is recommended comparing CEC competencies and special education administration pre-service training.
3. Further research is needed using budgetary and compliance indicators

Conclusions

The purpose of this casual-comparative study was to test Williams' (2005) Start Gate Theory and Fishkin's (2014) Theory of Opportunity Pluralism. This study examined whether a difference existed in districts employing a certificated special education administrator and districts not employing a certification special education administrator. Current literature was reviewed and found to be lacking quantifiable evidence whether a difference was present. The study will add to the current literature concerning what is known about differences in student performance. The findings of this study had implications for pre-service experiences of special education administrators as well as school districts looking to employ a special education administrator. The study revealed questions recommended for future research.

The review of current literature on leadership revealed earning an advanced degree increases performance of administrators, and increased performance of

administrators impacts student performance (Fullan, 2001; Marzano, Waters, & McNulty, 2005). To acquire certification as a special education administrator, the candidate must pass certain educational pre-service experiences. In this study, an increase in educational coursework for special education administrators did not result in an increase in student performance.

If employing a certificated special education administrator made a difference in achievement, the lack of access to a certificated special education administrator would affect the equality of opportunity. The Start Gate Theory (Williams & Hawthorn, 2008) and Theory of Opportunity Pluralism (Fishkin, 2014) would illustrate that opportunity was not provided had a difference in achievement been present. Williams's Start Gate Theory and Fishkin's Theory of Opportunity Pluralism was applied to the study's findings. It is clear some students perform just as well in the absence of a special education certificated administrator. Therefore, equal opportunity exists for students with disabilities to achieve academically and in post-secondary activities.

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