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Diverse Learners in Inclusion Classroom and Their Standardized Achievement Tests

Submitted by

Janice L. Hooks-Quartman

A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree

Educational Leadership Doctoral Program

In Organizational Leadership

National Louis University

Chicago, Illinois

## Organizational Leadership Doctoral Program

### Dissertation Notification of Completion

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Title of Dissertation: Diverse Learners in Inclusion Classrooms and their Standardized Achievement Tests

Certification: In accordance with the departmental and University policies, the above named candidate has satisfactorily completed a dissertation as required for attaining the Ed.D. in Organizational Leadership (College of Professional Studies and Advancement) at National Louis University.

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03-10-2020

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## ABSTRACT

Special Education services has opened many opportunities for students with disabilities and special needs. Disabled students were previously educated in a separate facility barring them from educational and social interactions with their non-disabled peers. Disable students are now entering their community school and receiving services through an I.E.P. (Individual Education Plan). The primar purpose of this study is to understand the impact of Standard Achievement Tests of disabled students that learn in a co-taught general education classroom with a regular teacher and a special education teacher. This study provides additional insight on the academic achievement of students that have an I.E.P.

## DEDICATION

First, I dedicate this dissertation to my supportive Chairs Dr. Robert Castaneda and Dr. Andulla Alshboul. My sincerest thanks to both of you for your years of instruction and for preparing me to be the leader that I am today.

Second, I dedicate this accomplishment to my God, Jesus Christ, who said that I could do all things through him, which strengthened me. This moment would not be possible without him. Additionally, my six children, Jazz, Bianca, TaKwon, David, Marquis and Kimora. They gave me encouragement, showed love and gave me peace and quiet to do hundreds of class modules.

Third, I dedicate my educational journey to my deceased parents, Dr. Rev. James C. Hooks, and Grace Hooks. They were the role models that inspired me to reach for this degree.

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## CHAPTER 1: INTRODUCTION

Special education inclusion is not a new concept but one that has been around for decades. Public schools across the nation, in one form or another, have been impacted by the needs and laws of special education students. It began with the “grassroots” court case *Brown v. Board of Education* when the Supreme Court of the United States in 1954, declared that separate but equal is not equal (Imber & Van Geel, 2004). Segregation by law was banned, both the open and secrete forms of educational discrimination. Through districting policies, segregation continued for more than 40 plus years later (Imber & Van Geel, 2004).

The Head Start Program, founded in 1964, provided neonatal educational programs that offered comprehensive development for low-income infants, toddlers, and preschool children from birth to five years of age. Early childhood education is the first step for developing success for young children (Gurlnick, Neville, Hammond, & Connor, 2008). Gurlnick et al. (2008) stated that there was a need for continued educational research and that a variety of interventions can be used to improve cognitive and social outcomes in special needs children.

Before the passage of Education for All Handicapped Children Act (EAHAC) of 1974 (P.L. 94-1420), the public-school separated students with disabilities from their peers with each receiving a different education (Shade & Steward, 2001). E.A.H.A.C. guaranteed free and appropriate education for all children between the ages of 3 and 21. In the next 32 years and 8 reauthorizations later, educational improvements were implemented for children with

disabilities. In 1990, the reauthorization of E.A.H.C.A (P.L. 101-47) was changed to individuals with Disabilities Education Act (IDEA). IDEA incorporated the rules for setting up programs for students with disabilities, especially those with serious emotional disturbances, and transition plans for post-education. (Imber & Van Geel, 2004)

Between 1995 and 2005, special education students spent 80 percent or more of their school day in a general classroom showing an overall increase from 45% to 52% percent (U.S. Department of Education, 2006). With this number of students with disabilities in the classroom most of the day, it could be essential to learn if special education students are receiving instructional services that assist with academic success (Peterson et al., 2004).

In 2001, the Elementary and Secondary Act (ESSA) was renamed to the No Child Left Behind (NCLB) Act and signed into law in 2002. NCLB set up high marks of accountability in educating all children regardless of their current ability and use of scientifically based education research (Peterson et al., 2004). The NCLB requirements incorporated standardized tests requiring students to participate in school academic testing just like their non-disabled peers.

Previously, students with special needs did not participate in standardized testing, only curriculum testing. Standardized tests are more rigorous, can put a strain on public education as the test scores were measured, monitored, and incorporated into the state school report card grade (Peterson et al., 2004). Hence, the decision to incorporate diverse learners into

standardized testing data into the state report card raises concerns. Principals, superintendents, general education teachers, and special education teachers are accountable for a school's performance. Some school districts offered rewards and sanctions to drive the district into meeting the Adequate Yearly Progress (A.Y.P.) (McLaughlin & Nolet, 2004), creating high standards for teachers and a possible void in special education services. This topic can be controversial and just the mention of inclusion in the educational setting can ignite casual conversations and round table discussions involving administrators, faculty, and community members (Worrell, 2008).

Controversy continues the effectiveness of an inclusion program among general education teachers and special education teachers. Loucks-Horsley (1990) stated that the general education teachers' mood with inclusion is that of "frustration, burden, fear, lack of support and inadequacies about their ability to teach children with different kinds of problems." Many general education teachers do not believe they are adequately prepared to teach students with disabilities or are familiar with the regulations and rules that accompany the student in special education (Cahill & Mitra, 2008).

Could the trend of general education teachers expressing concerns over special education students participating in standardized testing still hold true? If so, could this impact the

achievement of special education students that participate in the test? This researcher would like to consider this study. The independent variable is the general education teachers and the dependent variable measure is the success of students with an Individual Education Plan (IEP) on standardized achievement tests (S.A.T.). Studies show that there is a correlation to student success through theories of cognitive development.

A well-known psychologist by the name of Jean Piaget was a pioneer in the study of cognitive development in children. “His contributions included a child stage theory of development, with detailed observational studies and a series of tests to determine mental abilities (Erneling, 2014). Further, Piaget theorized that thinking abilities were “progressive and the result of biological maturation and environmental experiences” (Erneling, 2014). Children can develop an understanding of the world around them through life experiences and discovering their natural environment through schemas or adaptation (Erneling, 2014).

Schemas are also considered the foundation of cogitative learning and allow children to take in basic information and building on those concepts (Erneling, 2014). Piaget also stated that thought processes are very similar to “index cards” that fill the brain: Each one giving instruction on how to receive and implement information (Wadsworth, 2004).

Adaptations can reflect how a student receives new information or learns about new

objects such as technology or the use of a new cellular phone (Wadsworth, 2004). Piaget further reported that special education students, specifically students with learning disabilities (L.D.) can experience deficits with processing skills that can make learning in the general education classroom very difficult (Gersten & Geva, 2003). Deficits can include “visual and auditory perceptions or thinking through reading or math subjects” (Gersten & Geva, 2003). For example, rather than have students just understand how to identify coins on a worksheet, students could practice making store purchases and counting out money to purchase transactions. “Children with learning disabilities benefit from this approach because they have trouble with generalizing in the classroom setting. With realistic examples built into the instruction, the students have specific generalizations to practice” (Gersten & Geva, 2003). Further, Piaget theorized that thinking abilities were “progressive and the result of biological maturation and environmental experiences” (Erneling, 2014). Children can develop an understanding of the world around them through life experiences and discovering their natural environment through schemas or adaptation (Erneling, 2014).

Schemas are considered the foundation of cognitive learning and allows children to take in basic information and build on concepts to develop cognitive learning (Erneling, 2014).

Wadsworth (2004) stated that thought processes are very similar to “index cards” that fill the brain. Each one giving instructions on how to receive and implement information. Adaptations



can reflect how a student receives new information or learn about new objects such as technology or the use of a new cellular phone (Wadsworth, 2004). Piaget reported special education students, specifically students with learning disabilities (L.D.) can experience deficits with processing skills and make learning in the general education setting (Gersten & Geva, 2003). Deficits can include “visual and auditory perceptions or thinking through problems.”

Classroom success for students with disabilities can be achieved through motivation and positive self-esteem. Students are motivated to achieve through a can-do attitude (Reese, Hunter, Asher, Denis, & Baldrige, 2007). Although some of these students are frail mentally and some physically, instilling confidence and offering encouragement is a significant tool in achieving success in an inclusive classroom setting (Reese et al., 2007). This success is achieved by having the special education teacher and general education teacher work together to identify the strengths and weaknesses of the student through various curriculum tests and writing an Individual Education Plan (IEP). This plan also allows you to create a support plan to increase comprehension, practice, and success in the subject (Reese et al., 2007).

Successful students in an inclusion class will attend the general education classroom, have a seat among his/her peers and receive support services from the General Education (G.E.) teacher and Special Education (S.E.) teacher. The student receives a modified lesson to make it simpler. For example, a student that takes a test for 60 minutes could be extended an additional

30 minutes to complete the test. Additional time can also be placed on homework assignments allowing student additional days for completion. Special seating arrangements could be made for the disabled student as well as additional rest breaks and extended time on tests (Reese et al., 2007).

Opportunities for a social gathering with their peers could be made available through group study and provisions that allow them to share the same lunch periods. Motivational factors towards success for students with disabilities is continuous praise. When students are praised, they feel confident about themselves and their work (Reese et al., 2007). Background of the Problem

Inclusion is not a new idea but has a historic connection with the *Brown v. Board of Education* court case. This infamous case went to the Supreme Court of the United States in 1954, there it was declared that separate but equal is not equal (Imber & Van Geel, 2004). Thus, segregation by law was banned both the open and secrete forms of discrimination. Through the districting of schools, segregation continued for more than 40 years (Imber & Van Geel, 2004). The Head Start Program, founded in 1964, was one of the first steps toward dismantling segregation. This program provides comprehensive development for low-income infants, toddlers, and preschool children from birth to five years old and services for their families. Early childhood education is the first step for developing success for young children with a variety of

interventions that can improve cognitive and social outcomes. The Head Start program was one of the pioneers in creating desegregation in the school setting (Gurlnick et al., 2008). Further, Gurlnick et al. (2008).

Before the passage of Education for All Handicapped Children Act of 1974 (E.A.H.C.) or (P.L. 94-1420), the public-school separated students with disabilities from their peers with each receiving a different education (Shade & Steward, 2001). Additionally, the law guaranteed free and appropriate education for all children between the ages of 3 and 21. Over the next 32 years, 8 reauthorizations were made to EAHCA towards improving the educational benefits of children with disabilities. In 1990, the reauthorization of EAHCA (P.L. 101-47) was changed to the Individuals with Disabilities Education Act (IDEA). They incorporated the rules for setting up new programs for students with disabilities, especially those with serious emotional disturbances, and transition plans for post-education (Gurlnick et al. (2008).

In 2001, the Elementary and Secondary Act (ESSA) was renamed to No Child Left Behind (NCLB) Act and signed into law in 2002. NCLB set up high standards, accountability of educating all children regardless of current ability using scientific-based education research (Peterson et al., 2004). Scientifically based research involves rigorous systematic and objective procedures that produce reliable and valid relevancy to activities and programs in education (P.L. 107-110-, 2002).

It is worth mentioning, that the NCLB requirements are putting a strain on public education as more 45% of students with disabilities are spending more time in the general education classroom. Without the conceptional framework of organizational structure and culture, teachers can view inclusion as a “punishment” especially if they have not been trained to work with disabled students (Peterson, et.al. 2004). Co-teaching has become a vital component of the organizational culture allowing two teachers to work together in the same classroom to help students achieve academic success (Peterson et al., 2004). Teachers, principals, and superintendents become accountable for the school’s performance. Some schools will offer rewards and incentives to drive the school test scores (McLaughlin & Nolet, 2004). These high standards for teachers have left a void in some special education classes based on the U.S. Department of Education (Brownell, Bishop, & Sindelar, 2005).

Between 1995 and 2005, the percentage of students with disabilities spending 80 percent or more of the school day in a general classroom showed an overall increase from 45 to 52 percent (U.S. Department of Education, 2006). With this number of students with disabilities in the classroom most of the day, it is essential to learn teachers’ opinions about this very different and difficult classroom setting. Just the mention of inclusion in the educational setting can spark controversy. If administrators and faculty members have a negative attitude toward inclusion, the support system for teachers of inclusion has broken down and it is doomed for failure before

it begins (Worrell, 2008).

### The Purpose and Objective of the Study

The purpose of this quantitative research was to explore and discover ‘Is there is a possible correlation between students with an Individual Education Plan (IEP) that take standardized tests with general education teachers under the Individuals with Disabilities Education Act Amendments of 1997. Quantitative research is “generally appropriate for insight on studying data and statistical analysis (Kochler, West, & Taymans, 2000).

This study will reveal information on general education and special education students that participate in Standardized Achievement Tests (SAT). Regular education teachers will recognize that students with an Individual Education Plan (IEP) can participate in SAT testing in an inclusion classroom setting. As a new movement emerges on the horizon towards special education inclusion, it could become crucial to regard the viewpoints of special education teachers and general education teachers on how they can work together in preparation for students that take SAT tests (Friend & Bursuck, 2006).

### Research Questions

The following five questions guided this quantitative research. They center on the relationships between the proportions of IEP students and other measures.

RQ 1: What are the descriptive statistics for the proportions of IEP students and school

parameters?

RQ 2: What are the relationships between the proportions of IEP students and school

parameters?

RQ 3: What are the relationships between the proportions of IEP students and ELA academic

performance?

RQ 4: What are the relationships between the proportions of IEP students and math academic

performance?

RQ 5: What are the effects of school parameters on correlations between the proportions of IEP

students and academic performance?

#### Operational Definition of Terms for the Study

Collaboration – Two or more teachers who share their educational expertise. Co-Teaching: Two or more teachers and or certified staff members that share instruction for a group or single student in a classroom setting (Friend & Bursuck, 2006).

Differentiated Instruction – An instructional style that is designated to meet the needs of Diverse Learners through class materials and a variety of teaching levels.

Free Appropriate Public Education (FAPE) – A special education ruling that allows educational services through the student's Individual Education Plan (IEP).

General Education Teacher – A certified teacher that teaches non-disabled students. Inclusion –

A placement of a student with disabilities with his or her same-age peers.

Least Restrictive Environment (LRE) Students with disabilities are placed with non-disabled peers in the same classroom (Illinois Board of Education, 2007).

Mainstreaming – Placing students with disabilities in the general or regular educational setting when they cannot meet the traditional system in place.

No Child Left Behind - A Federal law mandating that holds educators accountable for placing students with disabilities classes with their non-disabled peers (Illinois State Board of Education, (2006).

Partial Inclusion – Allowing students with disabilities to learn in the general education classroom up to 50% of their school day (Friend & Bursuck, 2006)

Self-Contained or Separate Classroom – Students with disabilities that send 50% or more in a separate classrooms away from their non-disabled peers.

Special Education Teacher- A teacher that is certified to instruct students with disabilities (Illinois State Board of Education, 2007).

### Importance of the Study

General education teacher and special education teacher collaboration can be a vital element of success for students with disabilities if they are going to make academic progress in inclusion classroom settings, including obtaining educational achievement in non-segregated

classrooms (Kauffman (2005). The No Child Left Behind Amendment (NCLB) and Individuals with Disabilities Education Act (IDEA) both speak the same language requiring public educational facilities to incorporate non-segregated instruction for disabled students to fullest of their abilities (Worrell (2008). Despite these amendments, many educators are not following the mandates and collaboration efforts to strategize an educational plan to implement instruction is ineffective. “Examples of effective collaboration strategies, specifically co-teaching between regular education and special education teachers do exist (Haynes, 2006).

Additionally, this study seeks to reveal information on general education and special education students that participate in Standardized Achievement Tests (SAT). Previously, students with disabilities did not participate in SAT testing because they had a disability. Today, all students, regardless of their disability, participate in SAT testing. This new requirement comes under the No Child Left Behind Amendment (Kossar, Mitchem Ludlow, 2005). The SAT test is a secondary public-school requirement for students in the 11th and 12th grades. The academic test measures students in three content areas: Reading, Writing, and Math. Student’s tests scores are recorded and become an official grade score level for students that will pursue college (Worrell, 2008). As a new movement emerges on the horizon towards special education inclusion, it could become crucial to regard the viewpoints of special education teachers and general education teachers on how they can work together in preparation of students that take



SAT tests (Friend & Bursuck, 2006).

### The Rationale for Methodology and Design

This researcher selected a quantitative method for this study. Creswell stated (2010) quantitative research allows the researcher to gather a plethora of data that can be formed into categories, including interpretation of the data to achieve insightful information. Additionally, this instrument can assist with relationship patterns and variable connections.

### Assumptions and Limitations

Vogt, (2005) stated, an assumption is an argument that is perceived to be true, identified for design, such as establishing a theory. “Factual information assumed to be true, concerning the study, the data collected is authentic, was randomly selected from a large metropolitan city with more than two thousand schools throughout the city located on the north side, west side, east side and south side of the city (Vogt, 2005). Also, the data is a purposeful sample, suitable for this study, assumed truthful and intended to show possible knowledge of the research phenomenon.

### Summary

Chapter one offered a brief description of the proposed study of inclusion classrooms that provides services to general education and special education students. It opens within the introduction of the topic. The section discussed an overview of the conceptual framework, the researcher’s purpose for the study, including the research questions. Additionally, the chapter outlined a rationale for the proposed methodology, research design and defined the terminology

that was used in this study. Chapter one concludes with the assumptions and limitations of the study and this summary. Chapter two introduces a review of germane information that can be influential to the study. Chapter three offers a discussion of the research methodology and design for the study. Chapter four will present in detail information on the data results, data analysis, and the research finding. In chapter five, the final chapter, the dissertation will present the implications of the study for students with disabilities that participate in Standardized Achievement Tests (SAT) in an inclusion classroom setting, the conclusion, and recommendations by the researcher.

## CHAPTER TWO: LITERATURE REVIEW

The literature review includes a deduction of empirical research and describes the theoretical framework that will be used to discuss the topic of study. The subject of teacher collaboration, specifically co-teaching, which is a teaching forum whereby the general education (GE) teacher and the special education teacher (SE) work together to create lesson plans, teaching strategies and assessments for students with disabilities in an inclusion classroom setting (Kim, Woodruff, Klein & Vaughn, 2006). Interpersonal roles, dynamics, and classroom management styles and classroom leadership can have an impact on the effectiveness of co-teaching and is a part of my research focus. A written description of my conceptual framework and the theoretical framework of organizational culture will be shared as the representation of how the study is developed by empirical research on the formation of inclusion, teacher collaboration, co-teaching and students with disabilities taking the Standardized Achievement Tests (Kim, Woodruff, Klein & Vaughn, 2006).

As stated in the background information and review of the problem statement in Chapter One, this researcher structured this research based on her 25 years of experience as an educator. My personal experience as an educator is rooted in education with experience in both large and small school districts. My roles have included music teacher, librarian, special education teacher, and school administrator. Leaning on my many years of experience as an educator, this

researcher has learned to understand the kinetics of structured civilization, influential behavior, and perspectives of professionals that work in educational settings. Thus, this diverse educational experience has offered me a broad perspective of experience opportunities that helped form the conceptual framework for this study.

### Conceptual Framework

Applying a social constructionist epistemology, this researcher investigated and used this theoretical framework for this quantitative study and will explain it in the sections to follow, including the “phenomenon of co-teaching” that will be discussed through the theoretical perspective of “organizational culture theory” (Schein, 2017).

Organizational culture has a history that is grounded in “social psychology”. It later incorporated organizational psychology, a newly formed concept that has been a part of several studies over the past few years (Schein, 2017). Schein offers the definition of the culture of a group as “a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaption and internal integration that was considered a valid concept and taught as the correct perspective” (Schein, 2017).

Schein (2004) believed that there were several driving forces that led to comprehending culture organization and was impressed with Lewin (1987) who stated that “as individuals increase their involvement in groups, their perceptions, actions, and feelings are a direct

reflection of the group in which they are members. Schein (2017) further clarified and added that there are four characteristics of culture that can help us comprehend culture organizations:

“Structure Stability, Depth, Breadth, and Patterning or Integration”.

Structure Stability is the “shared mentality of the group” (Schein, 2017) and the strength that holds the group together. Characteristics include predictability, thoughtfulness which helps the group function by creating a balance. Depth is described as the behavior that is unaware and out of a touch of their reality. Breadth describes how the group functions (Schein, 2017). When the beliefs are intertwined a culture is created and the beliefs take command and control of group roles and responsibility (Schein, 2017).” Patterning and integration further develop the concept of stability by explaining the behaviors, values, climate, and rituals of the group (Schein, 2017). More than one culture can be developed but neither one controls the other one. Related to this study, regular education and special education can be viewed as two cultures, one culture can be dominant and perform as a sub-culture or they can operate as parallel cultures (Schein, 2017).

Public schools have been described as a “formal organization with a hierarchical structure with a board of directors” (Senge, 2006) The public-school district is made up of several local school districts also known as organizations with each school having its own prototype and unique assumptions. Keeping in context of this study, teachers are considered members of the school district and perform under its “cultural influences and can influence the culture in which

they work” (Senge, 2006).

Additionally, school culture is considered a “continual process to which attitudes, values, and skills of its members continually reinforce each other” (Senge, 2006). As an example, teachers are required to attend regular faculty meetings and work together for hours throughout the entire school year. During this time, opportunities for shared attitudes can develop, norms, and values can become a part of the group's culture when reinforcement opportunities exist (Senge, 2006).

This research study will focus on co-teaching between the general education teacher and special education teacher in an organizational culture of secondary education to study co-teaching habits with students that have disabilities and learn in a co-teaching inclusion classroom setting. “Organization culture can operate at three levels: “Artifacts espoused beliefs, values and basic underlying assumptions” (Schein, 2017). This researcher has selected to study these three operational levels of organization in secondary education schools, analyze the collected data for a connection or patterns and report the findings to add to the body of knowledge on co-teaching and organizational culture (Schein, 2017).

The beginning level of organizational culture is described as “observable artifacts as the phenomenon uses visual, audio and kinetic in a culture” (Schein, 2017). The artifacts are considered parallel to school organization, specifically, regular education and special education.

Although general and special education teachers have been viewed as separate entities, they are connected through personnel policy manuals, teacher collaborative meetings, joined teacher lesson plans and classrooms (Schein, 2017). Through observations, both the general education teacher and special education teacher can share artifacts that can be similar, yet also can be different. Further, examining artifacts within an organization can be clearly visible and easily detectable, yet difficult to understand unless you have a command of the culture (Schein, 2017).

The second level of organizational culture is “espoused beliefs, values and those that are supported by social level cultural groups’ (Schein, 2017). These beliefs and norms can also include “ideologies and philosophies that are created by group members (Schein, 2017). These beliefs and values can incorporate “norms, ideologies, and philosophies established and practiced by the group members” (Schein, 2017). The focus of this study will include a teacher’s attitude toward co-teaching, inclusion classrooms, and co-teaching strategies that can help prepare students with an Individual Education Plan (IEP) to take a standardized achievement test.

The third level of operation in an organizational culture is the primary assumption. Schein (2017) stated that unaware feelings and beliefs can sometimes be taken advantage of by group members. “These beliefs and values can be the hardest to change in culture because they become embedded in the group’s mindset and a part of their comfort level” (Schein 2017). If they become rooted within the culture they can be perceived as “fixed” and difficult to change

(Schein, 2017). Further, it can be difficult for the culture to work together when differences of opinions on values are present, especially when the group is experiencing a “change process” (Schein, 2017). This study will seek to understand the culture of secondary education and examine if teacher collaboration is formed, and to what extent is teacher collaboration promoted by the culture’s basic assumptions among secondary schools or if it occurs in isolation.

The rooted assumptions of culture in an organization can hold together until another one is learned, accepted by group members and applied. (Schein, 2017). Change can occur when members let go of previously held values, beliefs that lead to the new behavior, then re-freezing new beliefs and values can occur (Schein, 2017). For the school organizational culture to change and encourage teacher collaboration from traditional culture, the school culture would have to dissolve (Skrtic, 1980).

This organizational culture described forms the theoretical framework for my study. It will be created to review how organizational culture impacts teacher collaboration, specifically in the areas of general education and special education teachers as co-teachers of students with disabilities in inclusion settings and preparing them for standardized achievement tests.

### Synthesis of the Empirical Research

This section of the literature review is a synthesis of empirical research related to this researcher’s study. First, a literature review of students with disabilities in inclusive classrooms



using general education and special education teacher was discussed. Second, results from empirical research on special education are presented. Finally, co-teaching concepts and research on the organizational culture was shared. Historical information on students with disabilities, related court cases, inclusion practices, least restrictive environment, teacher preparation, and collaboration follows and is available for educators and leadership teams in public education to review this data and use it to improve educational outcomes for students with disabilities and inclusion classrooms.

### The History of Special Education

The educational system within the United States has changed the way that students with special needs learn in the classroom setting. There is an excitement of hope and inspirational aspirations as parents and educators worked together in collaboration on one educational vision that could unite special and general education students in the same mortar, learning alongside one another. There are pros and cons to both sides of the spectrum. Pro-activist supports inclusionary practices and cites opportunities for classroom engagement, both academically and socially. Con-activist complains that disabled students require more time and attention and it takes away from their non-disabled peers (Imber & Van Geel, 2004). Additionally, research shows that many general education teachers do not feel adequately prepared to teach special education and are unfamiliar with inclusion policies. General education teachers have also

reported that special education students would “not fit in” (Imber & Van Geel, 2004).

### Related Court Cases for Inclusion

Studies show that previously, special education students did not have the same opportunities as their general education peers to attend a public school and receive an education (Horn & Tynan, 2001). Further, the legislature did not support students with disabilities in receiving education before the 1950’s and services offered to them during this time frame was institutionalization. In 1954, the Supreme Court of the United States declared that separate but equal is not equal (Imber & Van Fell, 2004). This segregation by law eventually banned both the open and secrete forms of discrimination. However, school district policies and segregation continued for more than 40 years as the control of social conditions outside the government’s control and is Constitutional (Imber & Van Geel, 2004).

Brown v. Board of Education on segregated education, (1954) the Supreme Court of the United States declared that separate but equal is not equal (Imber & Van Geel, 2004).

Segregation laws banned both the open and secret forms of educational discrimination and were the awakening of hope for students with disabilities (Imber & Van Geel, 2004).

Daniel R.R. vs. State Board of Education (1989) case filed on behalf of a six-year-old boy with a physical and mental disability who had was placed in a half-day kindergarten class after successfully completing a home district pre-school program. As a kindergartener, his

progress was inadequate, and the district recommended a therapeutic placement. His parents refused to request that he remain with his non-disabled peers and refused to sign a release for testing. Hence, legal litigation. During the lengthy litigation timeframe, a court order demanded that the student remains in his kindergarten placement. During this time, the student showed positive outcomes without regression, hence, the court ordered that the student could remain with his non-disabled peers (Imber & Van Geel, 2004).

Corey H. v. Board of Education (1992) lawsuit was filed against the Illinois State Board of Education (ISBE) and the Chicago Public Schools (CPS). Students with disabilities were not being instructed in the Least Restrictive Environment and not allowed to interact with non-disabled peers. (LRE; Kelleher, 2015). Federal mandates that supported these court cases included Education for All Handicapped Children Act of 1975 (P.L. 94-142), all reauthorization of the Individuals with Disabilities Education Act (IDEA), and the No Child Left Behind (NCLB) created in 2002 (Weiner & Hall, 2004)). Each mandate encourages every child to be included and protected in their education and no longer requires students to learn in a self-contained setting. Additional standards included high standards; all children must receive an education regardless of current ability, rigor and standardized achievement test (Wiener & Hall, 2004).

### Inclusion Model

One example is full-time inclusion whereby the student with a disability is in the general education classroom the entire school day with a general education teacher and a special education teacher. The second model is half-time inclusion whereby the student receives a general and special education teacher half of the day and the other half in a self-contained classroom with a special education teacher (Holloway, 2001).

The responsibility of the special education and general education teachers is to work together and collaborate on ideas and strategies that could assist special education students in being successful in the classroom (Holloway, 2001). For example, teacher collaboration could mean that the teachers meet weekly or bi-weekly to discuss lesson plans, academic tests, or strengthening weak topics that are required for higher learning. Special education and general education teachers work together to identify the strengths and weaknesses of the student through an Individual Education Plan (IEP). Additionally, students with disabilities under this mandate are entitled to accommodations and modifications (Holloway, 2001). Opportunities to integrate among the general education population can encourage positive self-esteem, view of themselves and friendships with non-disabled peers (Holloway, 2001). It is relevant to mention that collaboration is not always successful because some teachers are unreceptive to working in the same classroom with another teacher.

### Teacher Collaboration

For students with disabilities to be successful in an inclusion setting it is critical that the general education teacher and special education teacher work together (Weiss & Lloyd, 2002). When two teachers work in a complementary fashion, using their qualifications, experiences, and skillsets to teach in the same classroom, student learning can accelerate (Friend & Coe, 2007). The general education and special education teacher working together (Weiss & Lloyd, 2002). The teacher partnership opens doors of shared ideas, collective insights on student learning and support for one another.

### Co-Teaching

This study affirms what has been written in the literature review on co-teaching. The general education teacher utilizes their content knowledge and expertise to teach the classroom and the special education teacher uses their teaching expertise to incorporate teaching strategies, accommodations and modifications to assist the student in learning the classroom content (Friend & Cook, 2007). Combining the two teachers together increases their abilities to effectively teach all the students in the classroom. The literature review on co-teaching proposes that “co-teachers develop a shared sense of ownership for all students as they work together to create an inclusive, nurturing environment for all students (Dettmer et al., 2005). Lessons are differentiated to accommodate varying learning needs that can require extensive one-to-one time, which can be

challenging and time overlapping for the other students in the class without co-teaching (Dettmer et al., 2005).

When co-teaching and teacher collaboration occurs, individual strengths can be used to create successful lessons, time management and accountability for both the students and the educators (Dettmer et al., 2005). Additionally, having two teachers regularly in the inclusion classroom offers a “natural setting for the students to observe a visual setting collaboration skill” it can academically strengthen students to prepare for taking the Standardized Achievement Test (SAT) (Dettmer et al., 2005).

Standardized Achievement Tests (SAT) is a college placement test that informs higher-level institutions of the students' academic abilities. The SAT is used to determine a student's readiness to enter college (Centra, 1986). Previously, students with IEP's were not eligible to participate in taking the Standardized Achievement Test or because of their disability.

Beginning in the 1990s, federal mandates required that all students participate in standardized testing, and to the fullest extent in an inclusion classroom setting (Murray & Herrnstein, 1992).

In this setting, students are allowed accommodations such as a 10-minute break between tests or modifications such as extended time on a test. Studies show that students with an IEP are in pursuit and attending colleges, universities (Centra, Dettmer, et. Al., 2005). Hence, the importance of students with an IEP performing well on the exam (Sireci & Scarpati, 2005).

Studies show a significant increase in test scores for students with IEP's. when they are placed in inclusion settings, including exposed to practice tests (Gillespie, 2003). As mentioned, earlier in this literature review, co-teaching strategies and collaboration support can greatly impact the academic success for students with an IEP (Sireci & Scarpati, 2005).

### Teacher Preparation Programs

General education teachers are required to attend an accredited college or university that offers certification in their choice of curriculum domain, grade level, are licensed to teach non-disabled students in the public schools (Holloway, 2001). For example, a math teacher can be certified to teach math in an elementary school, hence, they would be awarded an elementary teaching certificate specifying grades Kindergarten through 8th grade. If a general education teacher wanted to teach high school; they would receive a secondary education certificate that indicates they eligible to teach ninth through twelfth grade. Special education teachers are certified to teach grades K-12 with a disability (Holloway, 2001).

### Summary

Chapter two offered a brief description of the conceptual framework on co-teaching, teaching strategies that can have a relationship in the classroom atmosphere and student success. It opens with an introduction to the literature review. It included limitations, assumptions, An overview of the conceptual framework, the researcher's purpose for the study, including the

research questions. A synthesis of empirical research was discussed along with the history of special education, inclusion, related court cases, collaboration, and co-teaching. The historical perspective on students with disabilities demonstrated a long fight for classroom inclusion with their non-disabled peers, and socialization opportunities (Imber & Van Fell, 2004).

Additionally, the chapter outlined a rationale for the proposed methodology, research design and defined the terminology that was used in this study. Chapter three offers a discussion of the research methodology and design for the study. Chapter four will present in detail information on the data results, data analysis, and the research finding. In chapter five, the final chapter, the dissertation will present the implications of the study for students with disabilities that participate in Standardized Achievement Tests (SAT) in an inclusion classroom setting, the conclusion, and recommendations by the researcher.



### CHAPTER THREE: METHODOLOGY

Chapter three begins with a topic summary, and research design of the study, followed by data collection, quantitative characteristics, selection of participants, data processing, analysis and summary of the research. This chapter will explore teacher collaboration, co-teaching and inclusion practices from general education and special education teachers that teach inclusion students who participate in SAT testing through the lens of a quantitative study. It will also include general and special education teachers, students with an IEP, inclusion and collaboration strategies as it relates to the conceptual framework.

As discussed in chapters one and two, organizational culture and unity among its members are vital component of collaboration and co-teaching styles. Successful collaboration and co-teaching strategies can be achieved by offering stability through co-joined classrooms, lesson plans explaining behaviors, values, climate and rituals of the group and organizational policies (Schein, 2017). Studies show that some perceptions of the general education and special education departments have been viewed as two separate entities, creating an imbalance, disconnecting the artifacts of the organizational culture. Artifacts are items that can be viewed by individuals inside and outside of the culture such as “furniture, office layout, dress, norms, insider jokes and even food” (Schein, 2017). When members share artifacts, it connects them to the culture and strengthens them and the organization (Schein, 2017).

Further, organizational members' behavior can perform like a “fine-tune” machine when they are synchronized with one another or can create animosity and enmity when there is a member discord. Factor in negative patterns, integration, and embedded attitudes, espoused beliefs, values, and underlying behaviors and it can place the organizational culture in harm’s way (Schein, 2017). General education and special education classroom teachers are no exception to the rule and are controlled by the same variables and related to this conceptual framework.

### Research Design

This investigator selected to conduct a research study using the quantitative method. Quantitative research collects numerical data, analyzes it in groups such as people, demographics, income or unusual phenomenon. Creswell, stated (2010) has been used to measure numeric studies of data through a variety of categories such as questionnaires, surveys, and data interpretation which can be helpful in gaining insight on comparative studies, patterns, significance or other phenomena (Creswell, 2010). Previous quantitative research studies included quantifying “attitudes, opinions, behaviors, surveys, and other defined variables” (Heaton, 2008).

This research method supports this conceptual framework and data collection process because it correlates with the quantitative procedure that collects large numerical data.

Public data is a collection of information that is “freely available, used, reused and redistributed by anyone with no existing local, national or international legal restrictions on access or usage” (Schein, 2017). Additionally, this research study incorporates numbers, large quantities, “unchanging data detailed and divergent reasoning concerning the research study (Schein, 2017). Additionally, as discussed in chapter one and chapter two, organizational structure requires unity among the general education teacher and special education teacher. Interpersonal roles, classroom dynamics and classroom management styles can be researched through a collection of data and measured through unchanging variables such as the number of teachers assigned to a school, the number of students enrolled in the school, including the number of students with Individuals with an Education Plan. The collected data can be analyzed and yield a statistical analysis of the organizational performance of the general education teacher and special education teacher, including a performance of students that take the Standardized Achievement Tests.

As earlier stated, interpersonal variables can impact classroom success because effectiveness is dependent upon co-teaching and collaboration. Both teachers are required to work together to create lesson plans, teaching strategies and assessments for general education and special education students in an inclusion classroom setting (Kim, Woodruff, Klein & Vaughn, 2006). Interpersonal roles, dynamics and classroom management styles and can also

have an impact on the effectiveness of co-teaching and are a part of this research design. The conceptual framework and the theoretical framework of organizational culture will be shared as representation of how the study is developed by empirical research on the formation of inclusion, teacher collaboration, co-teaching, and students with an Individual Education Plan taking the Standardized Achievement Tests (Kim, Woodruff, Klein & Vaughn, 2006).

### Data Collection

This researcher randomly collected a data sample size of fifty secondary educational schools out of two hundred from a public data base known as the Illinois Report Card (IRC). The Illinois Report Card is a public website that was established in 2002, contains information on public schools within the state of Illinois and is governed by the Illinois State Board of Education (Illinois Report Card, 2018). According to research, there are 852 public school districts, 368 elementary school districts, and 97 high school districts that report under the IRC (Illinois Report Card, 2009).

The Illinois Report Card can measure school performance that is administered by the Illinois State Board of Education. Each community school is a part of a “public school district in the state of Illinois, including special charter school districts” (IRC, 2009). They are required to give “parents, taxpayers, the Governor, the General Assembly, Illinois State Board of Education and community a report card that offers assessment and school performance data on their school

and students. (Illinois Report Card, 2009).

Further, it is “an index of school performance measured against statewide and local standards and provides information to make prior-year comparisons and to set future year targets through improvement plans” (Illinois Report Card, 2009). The information listed on this website is made public and shares information on the progress of each school, including a “wide range of educational goals” and annual report progress on each public school in the state of Illinois (Illinois Report Card, 2009).

The Illinois Report Card can reveal a complete pictorial of students in each school, on every grade level and the overall school performance of every school. This annual data is gathered and collected by the IRC with a yearly report on the progress of each public school and is available by state. The IRC analyzes this data to assist communities in better understanding how their community schools are performing and “in order to inform and empower families and communities as they support their local schools through a wide range of educational goals” (Illinois Report Card, 2009).

There are three types of report cards from the Illinois Report Card division for the state of Illinois, including the schools and the district. The first version is the “Classic Report Card” (Illinois Report Card, 2009). This is a “static printable, PDF version of the Official Report Card” (Illinois Report Card, 2009). The second version is the “Illinois Interactive Report Card or IIRC.

This version is web-based, intuitive: (Illinois Report Card, 2009). This version allows users a “At a glance look” at school performance, performance comparisons between other schools and districts, newer trends, including putting data into categories. The third type of report is also a “At-a-glance” report. A downloadable report that contains two pages of information, including graphics and important report card data (Illinois Report Card, 2009).

This researcher used the IRC public website and collected data on public high schools and included variables on teachers such as the number of teachers in the school, classroom student enrollment count, the median household income, mobility rate of the students, and standardized achievement test scores. Additionally, the researcher used a starting zip code of 60610 to start the search, selected three schools within that area, then searched again adding a 10-mile radius up to 60 until fifty schools were selected. For example, 60610, 60620, 60630, and so on. When there were no more schools after 60660, the researcher started a new search using 60605 and added 10 until the fifty schools were selected.

The quantitative research method was chosen to allow the researcher to categorize information, record quantity and “construct a statistical model to explain through quantitative variables (Silva, 2007). As previously discussed, this researcher used a variety of variables that were connected to the conceptual framework such as the number of IEP’s that were in the high school program, data records collected assisted the researcher in making a generalization on the

concepts of student enrollment, mobility, median income, number of teachers in the school, reading and math standardized test scores. Further, the researcher was able to make some prediction of whether to further investigate relationships (Silva, 2007). For example, some zip codes that had larger student population also had single-digit enrollment of students with an Individual Education Plan. Reading and math test scores were in the meet and exceed category of performance. Students in other zip codes with similar enrollment numbers and had double-digit enrollment of Individual Education Plan students showed lower reading and math standardized achievement test scores were lower, ranging in the partially meet or did not meet at all categories.

As previously stated, in conducting this quantitative research, this researcher utilized conceptual framework variables such as the median income, number of students in each school, ethnicity, number of students with Individual Education Plans (IEP), the percentage of students at passed and failed the Standardized Achievement Test. This allowed this researcher to obtain more information about the participants in the study and not just their Standardized Achievement Test score. The above-mentioned factors were weighed in on a student's success on the SAT test score. After the data was collected, the researcher began an analysis of "numbers, statistics, tables chart and figures to determine if a pattern was present or other noticeable changes in Information (Silva, 2007).

### Data Collection Procedure

Before any research was performed, permission was sought to perform the study from the Institutional Review Board (IRB) at National Louis University (N.L.U.). After permission was granted to perform the study the researcher reviewed and studied 50 public school report cards out of 200 public high schools from the Illinois School Report Card (ISRC) for data from a large public urban school district. The high schools were selected from a large metropolitan school district that has schools on the west side, north side, east side and south side of the city to avoid research bias. Each school is assigned a zip code based on the area in which they live. The collection procedure was random, selecting 3 schools out of a zip code based on a starting code of 60610 and adding 10 digits to the last number until 50 schools were collected. If the zip code pattern ran out, the researcher used 60605 and added 10 digits to the ending number until the 50 schools were collected. This researcher's goal in conducting this quantitative research based on the conceptual framework and used to determine if there are possible connection between general education students, students with an Individual Education Plan in a co-taught classroom inclusion setting.

### Selection of Participants

The researcher reviewed the 2018 Illinois School Report Card high school database collecting data on their reading and math Standardized Achievement Test (SAT) scores. As



previously indicated, the public website allowed this researcher to gain access to public high school information from a large metropolitan city that has schools on the east side, south side, north side and west side of the city. School sizes ranged was from 200 students to 1200 students in one school building. Chapter two discusses how variables can exist throughout a school organization and can have a significance and relationships to other factors such as the number of students that participate in the “Free Lunch Program” family household income and student mobility during the school year (Illinois Report Card, 2018).

As previously stated, this research study was selected because the investigator wanted to know if there were a possible connection and significant impact of general education teachers and special education teachers that teach inclusion classes with general education, students with an IEP and SAT scores. Analyzing students with an IEP and Standardized Achievement Score test results are best analyzed through quantitative research. “Quantitative research deals in numbers, logic and an objective point of view” (Rossman, 2005). Further, it concentrates on numbers that are consistent without variation. To determine if this research study met the criteria of a quantitative study, the data needed to meet the quantitative characteristics.

A quantitative characteristic trait “is an attribute that falls on a continuum” (Rossman, 2005) and bears a characteristic or “distinguishing features” (Rossman, 2005). These attributes of quantitative study can be “physical or behavioral” (Rossman, 2005). For example, the number

of students that take the reading and math standardized achievement tests or the number of students that have an Individual Education Plan (Rossman, 2005). Quantitative traits are usually associated with large numbers, can change under the influence of their “environment” as earlier indicated through the conceptual framework. The study uses data materials that can be sorted and analyzed numerically. It can be repeated over time and offers reliable results. The researcher’s objective is clear, and the data is carefully evaluated prior to placing into categories and evaluated (Rossman, 2005).

At the time of the study, the students demonstrated English proficiency and it was the primary language within the school among students and staff. Some schools were in a low-income community where more than 50% were improvised. Student mobility rate averaged 15%, and student achievement scores were recorded as partially met, approaching, met, and exceed in categories of reading and math.

Additionally, student demographics such as the population, ethnicity, income and student mobility was also looked at and in comparison, to students with Individual Education Plans (IEP).

The above-mentioned factors could possibly weigh in on a student’s success on the SAT test score. African American students make up 90% of the students in each of the 50 schools with Hispanic students totaling approximately 2.0 % of the total number of students in the study.

Further, the data is in a numeric form and includes statistics, organized and usable charts, tables and other graphics towards a possible explanation of the results. The data is generalized, demonstrates some predictability. This chapter also detailed responses towards not addressing the need for confidentiality and protecting the rights of human participants because the study focus used public information does not have an attachment to human form or human qualities (Rossman, 2005). Finally, the researcher's goals are to collect, gather and analyze information with opportunities to share with others, add to the body of knowledge, including opportunities for future studies (Rossman, 2005).

#### Data Processing & Analysis

The researcher began the process of analyzing the data results by reading through the data, coding and identifying information into patterns. Rossman stated (2005) using coding allows the researcher opportunities to organize the research data before attempting to identify a meaning or coding information. All data was formatted in an organized manner to assist with capturing the true perception of the information and its participants. Each school reported English proficiency, demographics and population information was used and is a part of this data. Information collected did not require security measures because the data is available to the public on the [www.illinoischoolreportcard.com](http://www.illinoischoolreportcard.com) website.

## Summary

Chapter three began with a brief summary, research design, data collection, quantitative characteristics, selection of participants, data processing and analysis. The chapter concluded with a description of details that outlined the data collection method, data analysis, research quality and chapter summary. This quantitative research study conducted a search using the 2018 Illinois Report Card public website. This website offers a public annual statewide report on elementary and high schools. This researcher randomly selected 50 high schools from a large metropolitan school district out of 200 high schools. Schools were located on the north, west, east and south sides of the city randomly selected through zip codes to avoid researcher bias.

Using the (ISRC), the researcher collected data on the school's population, demographics, economics, mobility, several general education teachers and special education teachers, students with an IEP and SAT scores for reading and math. This report offers three versions of the report card with an "At-a-glance view" and on how each school district in that state is progressing, including a "wide range of educational goals (Illinois Report Card, 2018).

As discussed in chapters one and two, organizational behaviors can have an impact on school success. General education teachers, special education teachers, and students that work in an inclusion classroom setting was the scope of the conceptual framework and this quantitative study, including SAT test scores. Student success cannot evolve without an organizational

culture that is unified among its members, collaboration and co-teaching techniques. Further, quantitative behavior can also include artifacts, behaviors, values, climate, and rituals of the groups and organizational policies (Schein, 2017). Schein, (2017) advised against pre-conceived assumptions from organizational members and pre-conceived assumptions to avoid a “frozen” mindset within the organizational community.

Further, chapter two discussed the aspect of mindsets' pre-conceived assumptions and how they can be associated with organizational members. These mindsets can be “frozen” within the culture and almost be impossible to change (Schein, 2017). Further, the organizational atmosphere can be toxic; members can be obstinate to work and opinionated when change is requested (Schein, 2017). These variables are a part of the conceptual framework as previously discussed, demonstrates relevance to this study and support the researcher’s decision to uses the quantitative method of research. Teacher collaboration, co-teaching, students with an Individual Education Plan that attend inclusion classes were also part of this study, including students that took the reading and math SAT test it relates to the conceptual framework.

Studies show that some perceptions of the general education and special education departments have been viewed as two separate entities, creating a dis-balance, sub-cultures and disconnecting the artifacts of the organizational culture. Artifacts are items that can be viewed by individuals inside and outside of the culture such as “office space, office equipment, attire and

types of food” (Schein, 2017). Successful collaboration and co-teaching strategies connect members through shared artifacts, office atmosphere, and policies as it connects them to the culture and strengthens them and the organization (Schein, 2017).

As previously stated, quantitative traits are attributes that use data materials that can be sorted or analyzed numerically. The data is in numeric form and includes statistics, organized, and uses charts, tables, and other graphs to explain the results, including the study can be repeated over time. Creswell stated (2010), quantitative research offered the best method of choice because the study involved using large numbers, statistics of data and did not use any human data, confidentiality or protection of human rights was not needed. School demographics revealed that African American students made up 90% of the students in each of the 50 schools with Hispanic students totaling approximately 2.0 % of the total number of students in the study. Chapter four of this dissertation presents the findings of this study.

## CHAPTER FOUR: RESULTS

Chapter four provides a summary on the quantitative method for this study discussing the findings from data collected and analyzed during this case study. Further information on the study included the conceptual framework on teacher collaboration, co-teaching strategies, students with an Individual Education Plan and Standardized Achievement Tests using a quantitative study.

The study of quantitative research has been around for several decades and has been used by infamous researchers as well as common researchers for centuries. Quantitative research underscores goals and measurements, including “statistical, mathematical, or number analysis through data collection (Babbie, 2010).

This method of research is dependent upon the use of measuring variables and using data under a numerical system, and a variety of statistical models” (Creswell, 2010). Quantitative research offers a structured format that allows the researcher to collect large amounts of data from a variety of categories and interpret the data to gain insight or used comparative studies to determine patterns, significance or phenomena (Creswell, 2010).

Previous quantitative studies include quantifying “attitudes, opinions, behaviors, surveys, and other defined variables” (Heaton, 2008). “Quantitative data collection can also include paper

surveys, online surveys, mobile surveys, kiosk, telephone interviews, longitudinal studies, online polls. Additionally, a crucial element to this instrument are relationship patterns and connections among the variable. For example, a community school, enrollment numbers are low and have been decreasing every year for the past three years. Research data shows that the student population is decreasing because the residential community within the school is now a senior citizen complex. Hence, the enrollment decline is attributed to the diminished population of families with school children.

By comparison, Qualitative Research seeks information for its study through “exploratory methods” and acquires information by using comprehension, a theory and layers and layers of individual questioning (Creswell, 2010). The study used “pocket size numbers with “unstructured or semi-structured techniques”. Common techniques include “individual interviews, participation and observations” (Creswell, 2010). The study uses “pocket size numbers” and the participants are selected to “fulfill a given quota” (Creswell, 2010). Using this method, the researcher can gain more insight of a topic by “digging deeper” or asking a multi-layered of questions that continuous to peel off like an “onion” during the interview until there are no more details about the that subject (Creswell, 2010).

The quantitative research method chosen by this researcher was the best method of



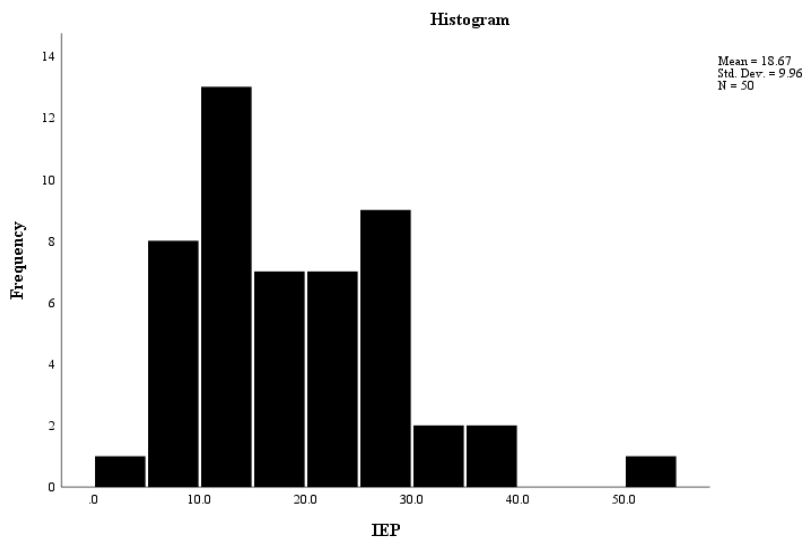
research because the study used large numbers, “unchanging data, detailed and divergent reasoning concerning the research study. Additionally, as indicated in the conceptual framework, this researcher wanted to know if there were possible relationships between the research study and possible elements around the study. The sample size was approximately 50 schools out of 200 from a large metropolitan city. Schools were located through a random zip code search from the east, north, west and south sides of the city and the study has the potential of offering significance information about the study including adding to the body of knowledge.

English/Language Arts (ELA) and math exams for students in grade 9-12 students who took the SAT in 2018. Related data that characterized the high schools were also downloaded, including total student enrollment, median family income, and mobility. Mobility is a measure of the amount of student turn-over. In this study, it was defined as the percentage of a school’s student body that differed from the previous school year, either due to new students enrolling from another school or previous students leaving to enroll elsewhere.

Whereas the purpose of this study was to examine the association between students with an Individual Education Plan (IEP), also known as Diverse Learners or (DL), general education students in an inclusion setting and their academic performance on Standardized Achievement Test (SAT) using the conceptual framework. While taking associated school parameters into

account, the study was redirected by a Department of Education constraint. Specifically, the DOE does not publish information on proportions of Diverse Learners (DL) per school because this is considered personal and therefore, private information. However, an alternative was available in the public record: The proportions of students with individualized education programs (IEPs). Consequently, the proportions of students with IEPs were used as a proxy for DL's in the current study.

As previously discussed, this chapter uses conceptual framework attributes to analyze the Collection data. This chapter is divided into 7 sections. Section 1 list the research questions. Section 2 presents the results for RQ1: Descriptive Statistics for School Parameters. Section 3 presents the results for RQ 2: IEP students and School Parameters. Section 4 presents the Results for RQ 3: IEP and English Language Arts. Section 5 presents the results for RQ 4: IEP And Math. Section presents the results for RQ 5: Removing the Effects of School Parameters Section 7 is the summary.



*Figure 1.* Frequency distribution of the proportions of IEP students across the sampled schools.

The statistics on Table 1 also show that school parameters ranged substantially. For enrollment, the range was +4000 students, nearly 5 times in width the value of the mean. The 10 schools with the lowest enrollment had fewer than 250 students total. On the other end of the spectrum, the top 10 schools for enrollment had 1440-4185 students total. Many of the top ten schools were categorized as a “magnet school” or selective enrollment whereby the students are selected by the school based on their policies and criteria. For the median income, the range was +87,000, about twice in width the value of the mean. Mobility also varied substantially, with a range from schools that did not vary at all (min=1%) to schools whose student body virtually changed completely (max=90%).

Table 1

*Descriptive Statistics for School Parameters*

	IEP	Enrollment	Median Income	Mobility	
Mean (SE)	18.67% (1.40)	854.16 (112.44)	\$43,469.40 (3,163.28)	24.36% (2.77)	
	LB	15.83%	628.20	\$37,112.55	18.79%
95% CI	UB	21.50%	1080.12	\$49,826.25	29.93%
5% Trimmed Mean		18.23%	761.46	\$40,865.96	22.60%
Median		16.50%	592.50	\$37,000.00	22.00%
Std. Deviation		9.95	795.09	\$22,367.76	19.60
Minimum		0%	101	\$24,300	1%
Maximum		50%	4185	\$111,419	90%
Range		50	4084	87,119	89
Interquartile Range		13.3	1042	10,465	23
Skewness		0.70	2.01	2.25	1.41
Kurtosis		0.69	5.53	4.24	2.17

*Note.* 95% CI = 95% confidence interval of the mean. LB = lower bound of the 95% CI. UB = upper bound of the 95% CI. IEP = proportion of students with IEPs out of a school's total student enrollment.

### Results for RQ 1

The answer to RQ 1 (What is the descriptive statistics for the proportions of IEP students and School parameters) was that for the model school, approximately 19% of its students had an IEP, enrollment averaged 855 students, the mobility factor averaged approximately 25% and School attributes included formation whereby students were from families with a median Annual income of \$43,000.

### Results for RQ 2: IEP Students and School Parameters

RQ 2: What are the relationships between the proportions of IEP students and school parameters? This section is divided into two parts. The first part briefly describes Pearson correlations and coefficients of determination, which were used for RQ 2-4. The second part lists the correlations among school parameters.

#### Pearson's Correlations and Coefficients of Determination

Correlations for RQ 2-4 were run as Pearson product-moment correlations. They are interpreted categorically (Cohen's  $d$ , 1988, p. 79-81): small effect  $r = .10$ ; medium effect  $r = .30$ ; large effect  $r = .50$ . These are zero-order correlations in which the effects of other associated variables are not considered. Correlations are presented with the coefficient of determination ( $r^2$ ) to show the percentage of variability in one of the correlated variables that is explained by its relationship with the other correlated variable. It is generally recommended that sample sizes be at least  $N = 100$  when correlations are used, partly to have adequate statistical power and partly to minimize the effect of extreme outliers (Warner, 2013). The results of this study should be viewed with

caution until replicated with a larger database. Statistical significance was set at  $\alpha = .050$ . All analyses were run on SPSS dedicated statistically software v 25.

### Correlations Among School Parameters

This section shows the results of examining the associations between the proportions of IEP students and three school parameters: enrollment, median annual income, and mobility. The hypotheses were:

H<sub>0</sub>: The correlation between the proportions of IEP students and enrollment, median income, and mobility are not statistically significant.

H<sub>1</sub>: The correlation between the proportions of IEP students and enrollment, median income, and mobility are statistically significant.

Table 2 shows the Pearson correlation matrix of the proportions of IEP students and school parameters. The IEP correlations are listed in the top row and the coefficients of determination are listed down the left column. Reading across the top row, the proportions of IEP students were significantly, moderately, and negatively correlated with enrollment,  $r = -.40$ . The null hypothesis was rejected. Enrollment explained 16% of the IEP student proportions. [The middle cell in the top row of Table 2,  $r = -.16$ , shows that the proportions of IEP students were not significantly correlated with median income. The null hypothesis was retained. The next cell to the right,  $r = .33$ , shows that the proportions of IEP students were significantly, moderately, and positively correlated with mobility. The null hypothesis was rejected. Mobility explained 11% of the IEPs.

Table 2

*Pearson Correlation Matrix of Proportions of IEP Students and School Parameters, N = 50  
Urban High Schools*

	IEP	Enrollment	Median Income	Mobility
IEP		-.40**	-.16	.33*
	16%		.39**	-.21
Enrollment				
Median Income	2%	15%		-.21
Mobility	11%	4%	4%	

*Note.* Correlations listed above the blank diagonal. Coefficients of determination listed below the blank diagonal. \*Correlation is significant at the 0.05 level (2-tailed). \*\*Correlation is significant at the 0.01 level (2-tailed).

Table 2 also shows that, with respect to the three correlations among the school parameters themselves, only one was statistically significant: Enrollment was significantly, moderately, and positively correlated with median income,  $r = .39$ . The null hypothesis was rejected. Income explained 15% of enrollment. Given that median income was correlated with enrollment, income was indirectly represented in subsequent analyses that included the proportions of IEP students and enrollment. Mobility was non-significantly and negatively correlated with enrollment and median income, accounting for only 4% of the variance in these parameters.

## Results for RQ 2

The answer to R 2 (What is the relationship between the proportions of IEP students and school parameters?) was that the proportions of IEP students had a different relationship with each School parameter. The proportions of IEP student negatively correlated with enrollment, which explained 16% of the IEP student proportions. The IEP proportions were positively correlated with mobility, which explained 11% of the IEP student proportions. IEP proportions were not significantly correlated with median income.

## Results for RQ 3: IEP and English Language Arts

What is the relationship between the proportions of IEP students and ELS academic performance? On the standardized SAT English/Language Arts (ELA) exam, students can score in a range of 600, *min* ELA score = 160 points, *max* ELA score – 760 points. Scores are categorized as *partial standards* (160-420), *approaching standards* (430-450 points), *meets standards* (460-700 points), and *exceeds standards* (740-760). Note that the span of Points within each performance category does not equal the span of other categories (e.g., the *Partial standards* span is 260 points whereas the *approaching standards* span is only 20 points) And there is a 10-point gap between consecutive pairs of performance of categories.

ELA academic performance in this study was measured as the *proportions* of 11<sup>th</sup> grade students in each of above four performance categories on the ELA exam. Results for RQ 3 are presented in two parts. The first part lists ELA descriptive statistics. The second part presents IEP and ELA correlations that answer RQ 3.



## ELA Descriptive Statistics

Descriptive statistics for the proportions are listed on Table 3. Taken together, the sampled schools reported that, on average, close to half of the students fell in the *partial standards* category and another third fell in the *approaching standards* for reading and writing. On average, that left a remainder of approximately 15% of the 11<sup>th</sup> graders who fell in the *meet standards* category or in the *exceeds standards* category of academic performance.

The minimum and maximum statistics for the performance categories on Table 3 were also informative. For example, the proportions of students in the *partial standard* category ranged 90 percentage points. This indicated that the highest proportion of students whose reading and writing skills were classes in the *partial standards* category was 92%.

Table 3

*Descriptive Statistics for Proportions of Students in Performance Categories on the ELA Exam*

English Language Arts (ELA)						
		Partial	Approaching	Meets	Exceeds	Proportion Passed
Mean		46.86 (3.25)	36.70 (1.94)	12.42 (2.04)	4.24 (1.52)	18.70 (3.35)
95% CI	LB	40.33	32.78	8.32	1.17	11.96
	UB	53.39	40.62	16.52	7.31	25.43
5% Trimmed Mean		47.10	37.24	10.86	2.30	15.82

Median	53.00	37.00	6.00	.00	8.00
Std. Deviation	22.98	13.77	14.41	10.80	23.71
Minimum	2	0	0	0	0.00
Maximum	92	60	65	55	96.00
Range	90	60	65	55	96.00
Interquartile Range	27	20	15	2	26.25
Skewness	-.45	-.575	1.69	3.40	1.78
Kurtosis	-.49	.020	2.83	11.78	2.74

*Note.* 95% CI = 95% confidence interval of the mean. LB = lower bound of the 95% CI. UB = upper bound of the 95% CI.

Table 3 show an additional measure, a ‘proportion passed’ variable for ELA. This measure was created by adding the proportions of students in the *meets standards* and in the *exceeds standards* categories to generate the proportions of students who, at a minimum, met the ELA standards. On average, approximately 18% of the students passed the ELA in the sampled schools, with a confidence interval that estimated the true mean proportion to be within the interval of 12-25%. This measure also ranged broadly, *min*=0 passing students, *max* = 965 passing students.

#### IEP and ELA Correlations

The Correlations for RQ 3 were:

H<sub>0</sub>: The correlation between the proportions of IEP students and categories of SAT ELA academic performance are not statistically significant.

H<sub>1</sub>: The correlation between the proportions of IEP students and categories of SAT ELA academic performance are statistically significant.

Table 4 lists the Pearson correlation matrix between proportions of IEP students, ELA academic performance categories, and the ‘proportion passed ELA’ variable. The top row shows that the proportions of IEP students correlated significantly and positively with the proportions of students in the ELA *partial standards* category,  $r = .41$ , with IEP status explaining 17% of the variance in proportions. The null hypothesis was rejected. The top row of Table 4 also shows that the proportions of IEP students correlated negatively with the proportions of students in the *approaching standards*, *meets standards*, and *exceeds standards* categories. However, only the correlation between the proportions of IEP students and proportions of students in the *meets standards* ELA category was statistically significant,  $r = -.35$ ; the null hypothesis was rejected.

Table 4

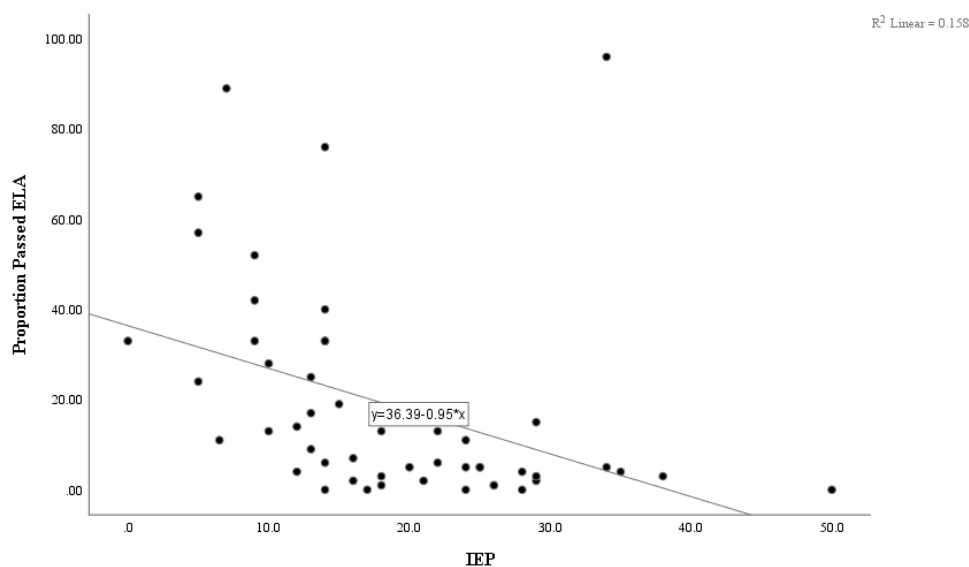
*Pearson Correlation Matrix between Proportions of IEP Students and SAT English/Language Arts (ELA) Academic Performance*

	V1	V2	V3	V4	V5	V6
V1 IEP		.41**	-.12	-.35*	-.23	-.40**
V2 ELA Partial	17%		-.29*	-.85**	-.60**	-.78**
V3 ELA Approaching	1%	8%		-.15	-.48**	-.31*

V4 ELA Meets	12%	72%	2%		.66**	.89**
V5 ELA Exceeds	5%	36%	23%	43%		.85**
V6 Proportion Passed	16%	61%	9%	79%	72%	

*Note.* V = variable. Correlations are shown above the blank diagonal. Coefficients of determination is shown below the blank diagonal. \*Correlation is significant at the 0.05 level (2-tailed). \*\*Correlation is significant at the 0.01 level (2-tailed).

Table 4 also shows that the correlation between the proportions of IEP students and the ‘proportion passed ELA’ variable (V6) was strong, significant, and negative,  $r = -.40$ . The null hypothesis was rejected. Figure 2 illustrates the correlation between the proportions of passed ELA’ variable as a scatter plot with a super-imposed line of best fit. IEP students and



‘proportion

*Figure 2.* Scatter plot of the correlation between the proportions of IEP students and the Proportion of 11<sup>th</sup> graders who passed the ELA in 2018. The formula for the regression line,  $y = 36.39 - 0.95x$ , indicated the predicting the passing proportion of 9-12 grade students taking the

ELA involved multiplying the proportions of IEP students by 0.95 and subtracting it from 36.39

*Figure 2.* Scatter plot of the correlation between the proportions of IEP students and the proportion of 11<sup>th</sup> graders who passed the ELA in 2018. The formula for the regression line,  $y = 36.39 - 0.95x$ , indicated that predicting the passing proportion of 9-12<sup>th</sup> grade students taking the ELA involved multiplying the proportions of IEP students by 0.95 and subtracting it from 36.39.

### Results for RQ 3

The answer to RQ 3 (What is the relationships between the proportions of IEP students and ELA academic performance?) was a significant and direct relationship between the proportions of IEP students and of students who failed to meet the minimum academic requirements for passing the ELA exam. There was also a significant but inverse relationship between the proportions of IEP students and of students who met requirements for passing the ELA exam. The inverse relationship is a synonym for negative and Indirect correlation. It means that as one of the variables in the correlation decreases in value, the other Variable increases in value. The inverse correlation in question arose between the proportions of IEP students and the proportion of 11<sup>th</sup> graders who passed the ELA in 2018.

The inverse correlation translates as follows: Higher proportions of IEP students were correlated with lower proportions of 11<sup>th</sup> graders who passed the ELA. The more IEP students in a school, the fewer students who passed the ELA. The correlation coefficient and its statistical significance (same as P value) are both listed in table 43 as the correlation between VI and V6 (-.40\*\*).

### Results for RQ 4: IEP and Math

RQ 4: What is the relationship between the proportions of IEP students and math

academic performance? This question is derived from the conceptual framework of teacher collaboration and co-teaching strategies as previously discussed in chapters one, two and three. On the standardized SAT math exam, students can score in a range of 600 points, *min* math score = 160 points, *max* math score = 760 points. Scores are categorized as *partial standards* (160-470 points), *approaching standards* (480-500 points), *meets standards* (510-700 points), and *exceeds standards* (710-760). Note the difference in point spans within each performance category and the 10-point gap between the numeric values between consecutive pairs of performance categories.

Math academic performance in this study was also measured as the *proportions* of 11<sup>th</sup> grade students in each of above four performance categories on the math exam. Results for RQ 4 are presented in two parts. The first part lists math descriptive statistics. The second part presents IEP and math correlations that answer RQ 4.

#### Math Descriptive Statistics

Descriptive statistics for the proportions of students per performance category are listed on Table 4. Taken together, the sampled schools reported that, on average, close to half of the students fell in the *partial standards* category and another third fell in the *approaching standards* for math. On average, that left approximately 20% of the 11<sup>th</sup> graders who fell in the *meets standards* category or in the *exceeds standards* category of standardized math academic

performance. The minimum and maximum statistics on Table 5 were also informative. For example, the proportions of students in the *partial standard* category ranged 96 percentage points, from zero to 96% of the students failing to meet the minimum *partial standards* skills set

Table 5

*Descriptive Statistics for Proportions of Students in Performance Categories on the Math Exam*

		Math Exam				
		Partial	Approaching	Meets	Exceeds	Proportion Passed
Mean		49.42 (4.18)	30.20 (2.28)	15.64 (2.19)	4.92(1.51)	19.72 (3.48)
95% CI	LB	41.01	25.61	11.23	1.87	12.71
	UB	57.83	34.79	20.05	7.97	26.72
5% Trimmed Mean		49.81	29.63	14.59	3.22	17.03
Median		55.50	31.50	14.00	0.00	11.00
Std. Deviation		29.59	16.15	15.50	10.71	24.64
Minimum		0	0	0	0	.00
Maximum		96	78	53	45	91.00
Range		96	78	53	45	91.00

Interquartile Range	55	26	24	4	28.25
Skewness	-0.36	0.38	0.89	2.64	1.54
Kurtosis	-1.11	0.38	-0.29	6.26	1.58

*Note.* 95% CI = 95% confidence interval of the mean. LB = lower bound of the 95% CI. UB = upper bound of the 95% CI.

Table 5 shows an additional measure, a ‘proportion passed’ variable for math. This measure was created by adding the proportions of students in the *meet standards* and in the *exceeds standards* categories to generate academic performance data points on proportions of students who met the math standards. On average, Table 5 shows that approximately 20% of the students passed the standardize math exam in the sampled schools, or one out of every five. The confidence interval estimated the true mean as within the interval of 12-26%. This measure also ranged broadly, *min* = 0 passing students, *max* = 91% passing students.

#### IEP and Math Correlations

The Correlations for RQ 4 were:

H<sub>0</sub>: The correlation between the proportions of IEP students and categories of SAT math academic performance are not statistically significant.

H<sub>1</sub>: The correlation between the proportions of IEP students and categories of SAT math academic performance are statistically significant.

Table 6 lists the Pearson correlation matrix between proportions of IEP students, math



academic performance categories, and the ‘proportion passing’ variable for math. The top row shows that the proportions of IEP students correlated significantly and positively with the proportions of students in the math *partial standards* category, with IEP status explaining 13% of the variance in proportions. The null hypothesis was rejected.

The top row of Table 6 also shows that the proportions of IEP students correlated significantly but negatively with the proportions of students in the *meets standards (V4)* and in the *exceeds standards (V5)* categories. The null hypothesis was rejected for these two correlations.

Table 6

*Pearson Correlation Matrix between Proportions of IEP Students and SAT Math Academic Performance*

	V1	V2	V3	V4	V5	V6
V1 IEP		.36**	.01	-.51**	-.28*	-.49**
V2 Partial Math	13%		-.62**	-.88**	-.55**	-.80**
V3 Approaching Math	-	38%		.28*	-.19	.08
V4 Meets Math	26%	77%	7%		.57**	.89**
V5 Exceeds Math	7%	30%	3%	32%		.79**
V6 Proportion Passed	24%	64%	-	79%	62%	

Note. V = variable. Correlations are shown above the blank diagonal. Coefficients of determination is shown below the blank diagonal. \*Correlation is significant at the 0.05 level (2-tailed). \*\*Correlation is significant at the 0.01 level (2-tailed).

Table 6 also shows that the correlation between the proportions of IEP students and the proportions that passed math was strong, significant, and negative. The null hypothesis was rejected. Figure 3 illustrates the correlation between the proportions of IEP students and the proportion of students who passed the math exam on a scatter plot with a super-imposed line of best fit.

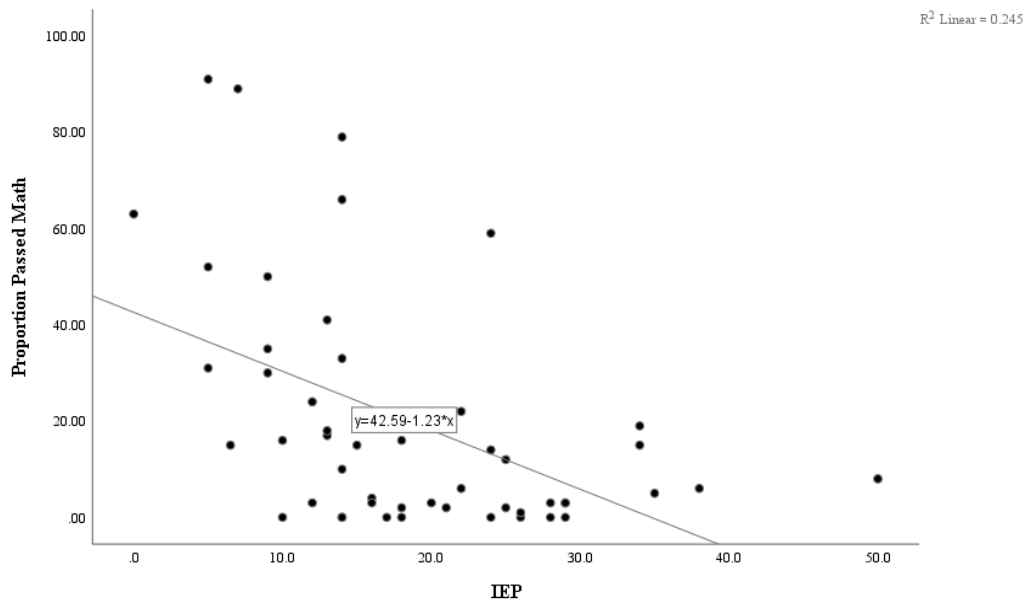


Figure 3. Scatter plot of the correlation between the proportions of IEP students and the proportion who passed the math exam. The formula for the regression line,  $y = 42.59 - 1.23x$ , indicated that predicting the proportion of 11<sup>th</sup> students who passed the math involved multiplying the proportions of IEP students by 1.23 and subtracting that quantity from 42.59.

### Results for RQ 4

The answer to RQ 4 (What is the relationships between the proportions of IEP students and math academic performance?) was a significant and direct relationship between IEP students and students who failed to meet the minimum academic requirements for passing the math exam. There was also a significant but inverse relationship between IEP students and students who met the minimum academic requirements for passing the math exam.

### Results for RQ 5: Removing the Effects of School Parameters

RQ 5: What is the effect of school parameters on correlations between the proportions of IEP students and academic performance? This section uses partial correlations to measure the effect of school parameters. Partial correlations are measures of the association between two variables after the effects of one or more associated variables have been factored out or removed (Tabachnick & Fidell, 2019). Partial correlations are symbolized as *pr* and interpreted in the same way as Pearson Correlations.

### Effects of Enrollment and Mobility on IEP and ELA

From Table 2, recall that the proportions of IEP students were significantly and negatively correlated with enrollment,  $r = -.40$ , but were significantly and positively correlated with mobility,  $r = .33$ . Also recall that a significant and positive correlation emerged between the proportions of IEP students and of students in the *partial standards* category for ELA,  $r = .41$  (Table 4).

### ELA Failing Students.

To measure the separate effects of enrollment and mobility on the correlation between IEP students and *partial standards*, two partial correlations were run to remove the effects to inspect the changes, if any, in the original correlations. When the effect of enrollment was removed from the correlation between IEP students and students in the *partial standards* category for ELA, the correlation went down somewhat,  $pr = .30$ , but retained its original direction and remained statistically significant,  $p = .037$ . This result suggested that future evaluations of the roles of IEP students in low academic performance on ELA exams take school enrollment into account because it might exert a mild moderator effect. When the effect of mobility was removed, the correlation between IEPs and *partial standards* also went down somewhat,  $pr = .32$ , and remained statistically significant,  $p = .024$ . This result suggested that future evaluations of the roles of IEP students in low academic performance on ELA exams need take mobility into account because it might exert a mild moderator effect.

### ELA Passing Students.

Also recall that a significant but negative correlation emerged between the proportions of IEP students and of students in the *proportion passed ELA* category,  $r = -.40$  (Table 4). To separately measure the effects of enrollment and mobility on the correlation between IEP students and *proportion passed ELA*, two partial correlations were also run to remove the effects.

When the effect of enrollment was removed, the correlation between IEP and passing students went down in strength,  $pr = -.29$ , but maintained its original direction and significance,  $p = .047$ . This result suggested that future evaluations of the roles of IEP students in passing academic performance on ELA exams take school enrollment into account as a possible moderating effect. However, when the effect of mobility was removed, the correlation between IEPs and passing student did not change materially,  $pr = -.36$ , and maintained its original direction and significance,  $p = .012$ . This result suggested that future evaluations of the roles of IEP students in high academic performance on ELA exams might exert a mild moderator effect at best.

#### Effects of Enrollment and Mobility on IEP and Math

Again, from Table 2, recall that IEP students were significantly and negatively correlated with enrollment,  $r = -.40$ , but significantly and positively correlated with mobility,  $r = .33$ . Also recall that a significant and positive correlation emerged between the proportions of IEP students and of students in the *partial standards* category for math,  $r = .36$  (Table 6).

#### Math Failing Students.

To measure the separate effects of enrollment and mobility on the correlation between IEP students and *partial standards* for math, two partial correlations were run to remove the effects. When the effect of enrollment was removed, the correlation between IEPs and *partial*

*standards* students went down somewhat,  $pr = .28$ , but maintained its original positive direction and significance,  $p = .051$ . This result suggested that future evaluations of the roles of IEP students in low academic performance on math exams take school enrollment into account as a potential mild moderating effect.

When the effect of mobility was removed, the correlation between IEPs and *partial standards* students for math again did not change materially,  $pr = .32$ , and remained statistically significant,  $p = .024$ . This result suggested that future evaluations of the roles of IEP students in low academic performance on math exams need not take mobility into account because it did not exert obvious effects.

#### Math Passing Students

Also, there was a significant but negative correlation between the proportions of IEP students and of students in the *proportion passed* category for math,  $r = -.49$  (Table 6). To separately measure the effects of enrollment and mobility on this correlation, two- partial correlations were again run to measure the effects of enrollment and mobility by removing them and evaluating the difference in correlations.

When the effect of enrollment was removed, the correlation between the students with IEPs and in the *proportion passed* category for math went down,  $pr = -.39$ , but maintained its original direction and significance,  $p = .005$ . This result suggested that future evaluations of the roles of IEP students in passing academic performance on math exams take

school enrollment into account as a possible mild moderating effect. When the effect of mobility was removed, the correlation between the proportions of students with IEPs and in the *proportion passed* category for math went down somewhat,  $pr = -.41$ , and maintained its original direction and significance,  $p = .003$ . This result verified the above finding that future evaluations of the roles of IEP students in low academic performance on math exams take mobility into account as a potentially mild moderating effect.

#### Results for RQ 5

The answer to RQ 5 (What is the effects of school parameters on correlations between the proportions of IEP students and academic performance?) was that evaluations of the roles of IEP students in academic performance ought to take enrollment and mobility into consideration as exerting potential mild moderator effects.

#### Summary

The answer to RQ 1 (What is the descriptive statistics for the proportions of IEP students and school parameters?) Approximately 19% of its students had an IEP, enrollment averaged 855 students, the mobility factor averaged approximately 25%, and students were from families with a median annual income of \$43,000.

The answer to RQ 2 (What is the relationships between the proportions of IEP students and school parameters?) was that the proportions of IEP students had a different

relationship with each school parameter. The proportions of IEP students negatively correlated with enrollment, which explained 16% of the IEP student proportions. The IEP proportions were positively correlated with mobility, which explained 11% of the IEP student proportions. IEP proportions were not significantly correlated with median income.

The answer to RQ 3 (What is the relationships between the proportions of IEP students and ELA academic performance?) was that the proportions of IEP students was significantly and directly related to students who failed the ELA exam but significantly and inversely related to students who passed the ELA exam.

The answer to RQ 4 (What is the relationships between the proportions of IEP students and math academic performance?) was that the proportions of IEP students was significantly and directly related to students who failed the math exam but significantly and inversely related to students who passed the math exam.

The answer to RQ 5 (What is the effect of school parameters on correlations between the proportions of IEP students and academic performance?) was that evaluations of the roles of IEP students in academic performance ought to take enrollment and mobility into consideration as exerting potential mild moderator effects.

Research data also revealed that student academic gains were significant among schools with single digit diverse learners and less mobility. From the conceptual framework, teacher to



student ratio was higher indicating student support in the inclusion classroom with standardized test scores in both reading and math in the meet and exceeds category. Schools with that took the ELA exam and Math exam and had double digit diverse learners also had a higher mobility rate. SAT test results in both reading and math were in the “partially meet” category or “did not meet” category. The later school data demonstrates that this school’s organizational culture was not well established and had an impact on student achievement.

## Chapter Five: Implications and Conclusions

The purpose of this quantitative case study was to explore organizational culture strategies toward the success of implementing an innovative educational design.

Quantitative research is "generally appropriate for insight, studying data and statistical analysis (Kochler, West, & Taymans, 2000). Quantitative traits are usually associated with large numbers, can change under the influence of their "environment" as earlier indicated through the conceptual framework. The study uses data materials that can be sorted and analyzed numerically. It can be repeated over time and offers reliable results. The researcher's objective is clear, and the data is carefully evaluated prior to placing into categories and evaluated (Rosman, 2005).

The research data source used for this study was the Illinois Report Card (IRC), a public database governed by the Illinois State Board of Education (Illinois Report Card, 2018). The Illinois Report Card is a public website that was established in 2002, contains information on public schools within the state of Illinois and is governed by the Illinois State Board of Education (Illinois Report Card, 2018). The Illinois Report Card can measure school performance that is administered by the Illinois State Board of Education. Each community school is a part of a "public school district in the state of Illinois, including special charter school districts" (IRC, 2009). They are required to give local community members and government constituents a

school report (Illinois Report Card, 2009).

Research on the study of organizational culture might provide an insightful understanding of how different cultures are effective and implementation strategies that could influence co-teaching and collaboration practices in the educational setting. Additionally, a research study could lead to identifying prohibitors that could impact co-taught classrooms teacher's ability to formulate strategies to overcome these obstacles, including the development of strategies and use the advancement of cultural strategies in the classroom (Schein, 2017). Study results indicated that co-taught teachers used attributes of organizational culture such as teamwork, trust, integrity and employment engagement as a strategy to teach Diverse Learners (DL) in the general education setting (Schein, 2017).

Co-teachers also utilized strategies to acquire student support and respect for the educational design, including structured lesson plans, standardized achievement test, cohesion reinforcement of co-teaching and learning about the positives and negatives of this culture. The organizational culture strategies could successfully benefit the field of education by inadvertently adapting teaching strategies that could enhance student achievement scores and encouraging a positive and conducive learning environment.

After the introduction of this chapter, the researcher discussed how the study fulfilled the research purpose and followed the study's implications for public schools. She also addressed the implications for a future study based the current findings of this inquiry. Chapter 5

concludes with a discussion on the significance of the study and the study's contribution to the body of knowledge in the field of public and innovative education.

#### Fulfillment of Research Purpose

This dissertation research fulfilled the study's purpose by contributing to the body of knowledge towards comprehension of organizational cultural strategies that could lead to the success of implementing an effective educational design. The data that was extracted from the Illinois Report Card provided evidence and allowed the researcher to explore the study phenomenon to answer five research questions discussed in Chapter 4. The exhaustive literature search, data collection, and analysis revealed that there was an overwhelming use of the principles of organizational culture among educators and educational leaders, including strategies to implement an innovative design.

The literature demonstrated an elevated demand for educational reform of organizational culture and co-teaching practices due to the accelerated population of students with a disability (Senge, 2006). The subject of teacher collaboration, specifically co-teaching, which is a teaching forum whereby the general education (GE) teacher and the special education teacher (SE) work together to create lesson plans, teaching strategies and assessments for students with disabilities in an inclusion classroom setting (Kim, Woodruff, Klein & Vaughn, 2006).

Interpersonal roles, dynamics and classroom management styles and classroom

leadership can have an impact on the effectiveness of co-teaching and is a part of my research focus. A written description of my conceptual framework and the theoretical framework of organizational culture will be shared as representation of how the study is developed by empirical research on the formation of inclusion, teacher collaboration, co-teaching and Diverse Learners taking the Standardized Achievement Tests (Kim, Woodruff, Klein & Vaughn, 2006).

Collaboration and successful co-teaching strategies played a pivotal role in students acquiring necessary information and was optimal toward applying it to standardized achievement tests and obtaining successful achievement test scores. Despite the critical role of organizational culture in an educational setting, cultures could vary from institution to institution, fail to set or maintain a positive organizational culture and could devalue the importance of co-teaching and standardized achievement test by Diverse Learners (Senge, 2006). Senge (2006), linked these challenges to the failure of co-teaching strategies rehabilitation practices to organize a culture that was conducive to learning. This researcher sought to explore organizational culture strategies towards the success of education innovation. Data analysis showed that the four attributes (shared, symbolic, integrated, and dynamic) of organizational culture have greater opportunities of success in the strategic implementation of education innovations. Additionally, the study demonstrated how school leaders used the strategies to achieve large masses of support

among subordinates and strengthen the organizational culture. (Senge, 2006).

The leader's individualized attention served to develop and enhance employee training and development to advance employee performance throughout the innovative process. The results also demonstrated that leaders believe that successful implementation of education advancements will result in positive changes in the classroom and in the practice. For example, leaders can strategically sphere head organizational attributes for their employees. Further, results showed that successful implementation of education innovation could result in a positive environment and productive educational environment (Senge, 2006).

#### Implications for Instructional Practice

The results of this study showed that bridging the achievement gap in educational instruction requires instructional practices that teachers should implement to improve student growth. Instructional practices can include direct and indirect instruction. When utilizing direct or indirect instructions, there should be a structured learning environment that allows teachers to create instructional opportunities that could help to address and close achievement gaps.

Additionally, educational leaders preferred to use the four attributes of organizational culture as strategies to implement educational advancement in co-teaching strategies and collaboration. For example, strategies could be used to improve decision making, school and teacher performance, performance in multiple school sites, and improved student

achievement. In rarity, there have been occasions when leaders used their role to modify the organizational culture during difficult projects. This demonstrated the importance of collaborative measures and co-teaching strategies in the educational setting.

The need for a leader model to encourage and guide the advancement process was disclosed and a common thematic throughout the study. The four attributes of organizational culture might provide educational leaders with a plethora of tools to evoke responses and behaviors from members of the organizational culture that support the practice and success in a variety of levels.

Although organizational culture is not a popular element in the area of educational leadership, some entry level leaders have used organizational culture and organizational cohesiveness as a reward contingency to acquire support, compliance and achieve success during challenging projects. For example, some educational leaders attach promotions or salary increases to achieve success. Another example, some educational leaders can have predisposed dispositions on organizational culture and expect organizational members to embrace those philosophies. This phenomenon suggests that the use of leadership strategies to implement successful education strategies may be dependent on the context of organizational culture. Leaders may evaluate the types of projects based on the organizational culture within the school setting to determine the style of leadership that is needed to gain cohesion and implementation

and success.

The results also showed that educational leaders believed that the four elements of organizational culture provided indirect but substantial benefits to the field of education. The benefits are improved educational ambience within the school setting, better teacher collaboration, better co-teaching strategies. Additionally, improved positive and conducive educational environment throughout the school, teacher retention and overall school success. These benefits are highly significant in the area of organizational culture and may be useful to their intended outcomes and specific organizational situations.

The findings discussed in Chapter 4 aligned with the seminal literature presented in Chapter 2. For example, the interpersonal roles, dynamics, classroom management styles and classroom leadership. The hierarchical order from the least to the greatest were symbolic, shared, dynamics and integrated (Seng, 2006). Findings came through multiple of quantitative studies and aligned with this researcher's research and study focus in the area of education.

In Chapter 1, the researcher identified factors that were potential limitations to the study. The first limitation relates to the unidentified conditions where the participants of the Illinois School Report Card reside could offer bias responses. For example, students that live on opposite sides of the city could have a higher tax base, hence, more school funding and resources resulting in higher school funding and the ability to purchase current technology and other



adaptative resources to improve learning. These changes could influence the number of hired teachers and staff and their perspectives on educational management. Despite this limitation, there was a thematic saturation from the four data resources, and the similarities of challenges impacting the various schools generalized the findings of the broader educational environment.

These differences could provide educational leaders across the globe with a variety of perspectives on innovation that could influence their choice strategies to implement innovations successfully. Even though potential differences in practice model exist, data saturation and the similarities in trends and findings from studies presented in Chapter 2, supports the applicability of this study's findings to organizations in other parts of the world.

The third limitation pertains to the industry focus of the study that may limit the applicability of the findings to industries outside of education. The researcher derived her conclusions from the research data findings. This study reflected on the broader educational industry and may not present the responses of employees from other sectors, especially those experiencing other external pressures such as salary compensation that is co-joined by successful student achievement or internal organizational challenges such as work overload due to staff shortages. Despite these limitations, the similarities of challenges impacting education throughout the world provides support for the generalization of findings to a knowledge-based

multi-industry organization.

The findings of the study gave new insights that might provide new directions for future research. It is also important to school districts and principals across the globe in supporting teachers with the necessary resources and providing professional development to bridge students' achievement gaps. Student improvement is essential in bridging the achievement gap. Additionally, it takes a collaborative team with co-teaching skills and abilities to improve students learning and increase Standardized Achievement Test Scores. With proper guidance, support, and ongoing feedback, a school can become successful. For example, school leaders in the study focused their leadership efforts based on gate keepers, such as board of directors and superintendents. These leaders delegated most internal organizational activities to mid-and entry level managers to carry out the innovation implementation process. Another consideration is that open communication is critical to innovation implementation, but it is unclear how the effectiveness of the organization's communication structure influences the effectiveness of leadership strategies and the potential outcomes (Rossman, 2005).

Moving forward, future researchers may consider studying this research study phenomenon as a qualitative perspective verses this quantitative dissertation inquiry that achieved thematic saturation. Qualitative attempts to acquire an understanding of reasons, opinions and motivations by seeking deeper details and information (Rossman, 2005).

Future investigators could also extend the scope of this research to other practice

disciplines, practice settings, and sectors of the education industry. This expanding inquiry may determine the organizational strategies that lead to the successful implementation of innovation to the broader educational industry. Future researchers may also study organizational culture boundaries to determine possible overlapping contextual domains of leader's activities beyond the traditional organizational structure during an innovation implementation program.

Organizational boundaries can be mental dividers used to distinguish an organization from external with nearby influences. They are theoretical and can be identified, defined in different context, a contract, research project or day to day operations. An exploration of external organizational structure and collaboration teaching may provide new insights on the conceptual and contextual spheres of organization during an innovation process. Additionally, future research may focus on internal and external communication techniques and structures to determine the best model that could offer successful implementation of educational innovation.

### Conclusion

Educational organizations can be successful when the organization works toward a common goal and vision. When teachers and leaders are involved in the academic growth it can help to close barriers of communication and encourage student academic achievement. Additionally, involved participants hold each other accountable and take ownership of crafting

and improving instruction within their school. School leaders are also a part of this development and should go through rigorous training and to assist staff in modeling and meeting the academic goals.

Additionally, educational leaders can use school data to inform and drive the decision making process in multiple ways such as identifying academic gaps; identifying internal and external programing to help bridge the gap and identifying professional develop opportunities that are tailored to the needs of the staff and students.

This dissertation inquiry fulfilled the study's purpose by contributing knowledge towards comprehension about organizational structure, collaborative teaching co-teaching strategies, including organizational leadership for the successful implementation of education innovation (Schein, 2006).

The research answered five questions through the experiences and perspectives extracted from a large secondary educational public data source. The findings of this study showed organizational structure and school leaders overwhelming dependence on the five elements of organizational structure as strategies to implement education innovations successfully.

Educational leaders used strategies for employee training and development. For example, educators are required to attend professional development as a part of their training and development, locally or abroad. Training programs offer collaboration with other educators

towards strategies and implementation of programs that could enhance the organizational environment, educational climate and organizational members (Schein, 2006).

The data from the researched addressed Diverse Learners that were in general education classes with a general education teacher and a special education teacher in a collaborative and co-taught learning environment. The data used was secondary public data and did not address economic development within each community school.

The results also showed that leaders believe that the successful implementation of education innovation will reduce fractured structures within the school culture and environment, improve organizational teamwork, improve co-teaching, improve collaborative communication, employee retention and promote a content and non-toxic environment for educators and students. For example, organizational members work cohesively in teams or departments, embrace new members and share the culture and establish protocols to avoid conflicts and settle differences. In these findings educational leaders might provide with a variety of tools to encourage responses and behaviors from followers that support the implementation of organizational innovation.

To bridge the academic gap of inner-city schools more research needs to take place on the perspectives of principals, teachers, students, parents and stakeholders. The stakeholders are the community members who are on Local School Council within all public schools, local

business leaders and organizations external and internal partners. Future researchers may desire to examine the study phenomenon quantitatively as a means of verifying the findings of this quantitative dissertation inquiry. This could allow future investigators to explore may deeper information on organizational members background, preconceived ideas and beliefs, explanations and extend the scope of the research to other practice disciplines, practice settings, sectors of the educational industry and bridge the student achievement gap (Schein, 2006).

Additional research may also include student's and teacher's perspectives which was not a part of this research and not included in the findings. Student perspectives on Standardized Achievement Tests could also permit educators to bridge low achievement gaps through pre-disposed opinions of the tests and preparation practices. Factors related to teachers could impact student success because of teacher's predisposed perceptions of Diverse Learners on Standardized Achievement Tests.

Researchers may also study organizational leadership areas to determine possible overlapping contextual surface on organizational leadership boundaries, contextual spheres of leadership influence and activities beyond their traditional domains during an innovation implementation program. Traditional domains can include recruiting and hiring organizational members that look, talk and perform as they do. Hence, keeping the status quo. Members that have different perspectives can upset the organizational flow and sometimes create a hostile

environment dependent upon the conflict.

A study of the organization's communication processes and structures may determine the optimal model that facilitates the successful implementation of educational innovation.

Organizational communication can be considered communication within team members, leaders, organizational members withing their community and abroad. Organizational communication can be a broad field and detail many forms of communication that allow organizations such as educational institutions to develop and connect with gate keepers and other organizations.

Individuals trained in communications can work in a variety of departments within the organization and potentially reach success because of their training. The findings and insights obtained from this study make a significant contribution to the body of knowledge in the field of education innovation.

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