The Use of Evidence Based Interventions in the Classroom for Students with Disabilities

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Julia Herron

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Approval Page

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By

Julia Herron

Approved by:

Patrick McN — 4.26.17

Chair: *Patrick McNamara, Ph.D.* Date

Certified by:

Rebecca Wardlow — 4/26/17

Dean of School: *Rebecca Wardlow, Ed.D.* Date

Abstract

Currently, the majority of students with disabilities are educated in a general education classroom, which led to a paradigm shift and pedagogies used to meet the needs of all students. The research problem was that general education teachers use of highly effective evidence-based interventions that improve academic achievement for students with disabilities was unknown, and it was not known why some teachers did not use these practices more frequently. The purpose of the study was to discover how frequently general education teachers implemented highly effective evidence-based interventions to improve academic achievement for students with disabilities, and why some teachers did not use these interventions. Bandura's Social Learning Theory and Vygotsky's Sociocultural Learning Theory were the framework for the study. A qualitative research approach using 30 videotaped lessons from the Measures of Effective Teaching Longitudinal study and 18 teacher interviews were used to answer the research questions. Videotaped lessons were scored for the use of highly effective evidence-based interventions that improve academic achievement for students with disabilities. Structured teacher interviews included the use of highly effective evidence-based practices, how frequently these practices were used weekly, and barriers that prevented them from using these best practices. Analysis of the frequency of use for highly effective evidence-based practices indicated that 90% of the teachers in the videos used explicit instruction, 27% used graphic organizers, and 10% used peer tutoring. Nonetheless, analysis of teacher interviews indicated explicit instruction and peer-tutoring were used by 100% of the teachers, 94% used reading comprehension strategies, 83% used inquiry based learning, 78% used graphic organizers, and mnemonics were used by 72% of the teachers. Barriers to implementing evidence-based

practices were lack of time, money, resources, and efficacy to choose evidence-based practices for students with disabilities. Schools need to provide shared planning time, make better use of resources, and provide teacher training to build teachers' efficacy to implement these best practices. Further research is recommended on the use of evidence-based practices in general education classrooms for students with disabilities using a larger sampling of general education teachers to increase the reliability and validity of the findings.

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

The most current educational reforms, the Every Student Succeeds Act (ESSA) of 2015, No Child Left Behind Act (NCLB) of 2001, and the Individuals with Disabilities Education Act (IDEA) of 2004 required schools to ensure that every child receives a free and appropriate education by qualified teachers, regardless of the student's race, religion, ethnicity, socioeconomic status, or disability (IDEA, 2004; NCLB, 2001; U.S. Department of Education, 2016). In addition to the IDEA, section 504 the Americans with Disabilities Act (ADA) require schools to provide students with disabilities accommodations that will allow them to be educated in the least restrictive educational setting, which is a general education setting. In the 2013-2014 school year, 6.5 million children age 3-21 received special education services, accounting for close to 13% of the public school population in the United States (National Center for Educational Statistics, 2015). By in large, 61% of students with disabilities spent 80% or more time in a general education classroom on a daily basis, and changing the classroom dynamics (Aud et al., 2011; Institute of Educational Sciences, 2014). Accordingly, causing a paradigm shift in the pedagogics used to meet the diverse needs of students with disabilities (Hulett, 2009; Stichter, Conroy, & Kauffman, 2008; Taylor, 2009; West, McCollow, Kidwell, Umbarger, & Cote, 2013). Current research indicated that the use of evidenced-based interventions for students with disabilities implemented in general education classrooms improved academic achievement and social skills for students with and without disabilities (Flower, McDaniel, & Jolivette, 2011; Fore III, Hagan-Burke, Boon, & Smith, 2006). Nonetheless, The State of Learning Disabilities Report (2011), indicated that 60% of students with disabilities had general education teachers that were able to meet their learning needs (Crawford, 2011).

The classroom teacher has the greatest effect on student achievement (Hattie, 2009; Stronge, Ward, & Grant, 2011; U.S. Department of Education, 2010). Utilizing valid and reliable teaching practices from evidence-based interventions that had proven to be the most effective would seem to be indicated when teaching children with disabilities. Nevertheless, there was no consistent data on how many teachers used highly effective teaching practices, or whether student outcomes improved when these specific practices are implemented in the general classroom for students with disabilities. There are multiple types of assessments and evaluations used across the country to determine if a teacher is effective. The majority of these assessment tools incorporated best practices derived from evidence-based research, such as Charlotte Danielson's framework for teaching and Robert Marzano's teacher evaluation model, which were designed to evaluate general education teachers. However, there were no assessments or teacher evaluations tools that measured the use of the most highly effective interventions proven to increase academic achievement for students with disabilities educated in an inclusion setting. Nor were there teacher assessments or evaluations that incorporated the use of both highly effective interventions and measured the frequency in which these interventions were implemented.

Background

Between 2013 and 2014, 6.5 million children and youths from age 3 to 21 received special education services in a public education setting in the US (Institute of Educational Sciences, 2015; IDEA, 2004). In the past 25 years, the number of students with disabilities spending 80% or more time educated in a general education setting has doubled, providing these students with greater access to the general education curriculum (Institute of Educational Sciences, 2014). Students receiving special education services under the IDEA are required to

have an Individual Education Plan (IEP) designed to meet their specific learning needs, through the use of evidence-based practices. IEPs include accommodations and modifications that make the general education curriculum accessible to the student (IDEA, 2004).

Similarly, the No Child Left Behind (NCLB) Act (2001) required classroom teachers to use evidence-based practices to improve academic achievement for all students. Furthermore, under the No Child Left Behind Act, as of 2014, all students, including students with disabilities, were expected to make adequately yearly progress and be proficient in English Language Arts and Mathematics. Evidence-based practices for students with disabilities are not easily generalizable, thus general education teachers felt inadequately prepared to meet the learning needs of students with disabilities, while at the same time preparing the whole class for high stakes testing (Burns & Ysseldyke, 2009; Regan & Michaud, 2011). Likewise, only 60% of these students with disabilities educated in a general education classroom felt as if the teacher met their learning needs (Crawford, 2011). In addition, the Race to the Top (RTT) program, designed to close the knowledge gap in the United States, required school districts to develop policies to improve teacher performance, teacher assessments, and teacher evaluation. The goal of the RTT program was to have a highly qualified teacher in every classroom, because classroom teachers have the most influence on student achievement (Hallgren, James-Burdumy, & Perez-Johnson, 2014). Yet, only 27 states required all teachers to be evaluated annually (National Council on Teacher Quality, 2014).

Similarly, when 1,588 general education teachers and 1,472 special education teachers in the Mid-Atlantic States were surveyed about the importance of 20 evidence-based practices for students with emotional and behavioral disorders, the frequency in which the teachers used each practice, and how knowledgeable they were of these practices, there were a number of

discrepancies noted that would negatively impact student outcomes. Overall, the majority of teachers believed that the evidence-based practices were important to use in the classroom. Yet, only 2-4 of the practices were used consistently. An addition, the majority of the teachers felt as if they were ill prepared to implement the evidence-based practices. General education teachers felt that 12 out of the 20 evidence-based practices were important, or very important to use in the classroom. Whereas, special education teachers felt 15 out of the 20 evidence-based practices were important or very important to use in the classroom. Clear rules/expectations, academic supports, and curricular/instructional modifications were the only evidence-based practices that both groups believed were important, and felt as if they were prepared to use or well prepared to use these practices. However, when asked how often these evidence-based practices were used in the classroom, 91% of general education teachers, and 86% of special education teachers responded that they usually used or always used only one of the evidence-based practices. Surprisingly, special education teachers and general education teachers both responded that they did not have adequate training to implement the other evidence-based practices (Gable, Tonelson, Sheth, Wilson, & Park, 2012).

Comparably, Cook and Schirmer (2003) identified seven evidence-based practices that improved academic achievement for students with and without disabilities. These practices included direct instruction, curriculum-based measurement, functional assessments, behavioral analysis, as well as teaching students problem solving strategies, self-monitoring techniques, and how to use mnemonics. However, these techniques were not widely used by general education teacher or implemented with fidelity, due to lack of knowledge of the techniques or how to implement them (Cook & Schirmer, 2003). Likewise, research on the use of peer-mediated strategies in early childhood classrooms indicated that participants were able to identify the three

most effective strategies, but classroom observations indicated that the most useful strategies were not used frequently. Thus, reflecting the fidelity of using the most effective interventions for students with disabilities in an inclusive setting (Yang & Rusli, 2012).

In summary, although federal and state regulations required the use of best practices in special education and general classrooms, there was little data on the rates of use of the most effective evidence-based practices in these settings, and how frequently these practices were implemented to improve academic achievement for students with disabilities educated in general education classrooms.

Statement of the Problem

The specific problem addressed in this study was that it was unknown how frequently general education teachers implemented the most highly effective evidence-based interventions in their classrooms to improve academic achievement for students with high incidence disabilities. Nor was it known why general education teachers did not use these practices more frequently. It was currently known that evidence-based interventions implemented in general education classrooms to meet the learning needs of students with disabilities improved academic achievement (Copeland & Cosbey, 2008-2009; Cortiella, 2011; Huberman, Navo, & Parrish, 2012; Rathvon, 2008; Raymond, 2008; West, McCollow, Kidwell, Umbarger, & Cote, 2013; Yang & Rusli, 2012). It was therefore imperative to get teachers to use these best practices when working with students with disabilities.

To increase the use of the most effective evidence-based interventions in general education classrooms for students with disabilities, practices that general education teachers used to improve academic achievement for students with high incident disabilities needed to be identified. Better data was needed on: (a) whether or not general education teachers used the

most effective evidence-based interventions for students with high incident disabilities; (b) the frequency with which each of the most effective evidence-based interventions for high incident disabilities were implemented; (c) what reasons teachers gave for not using best practices. If this study was not done the lack of knowledge regarding the use of the most effective evidence-based interventions by general education teachers can lead to the misallocation of funds for professional development, staffing, and resources aimed at improving academic achievement for students with high incident disabilities educated in general education classrooms. Not identifying the reasons why general education teachers did not implement best practices will hinder the adoption of the best teaching practices, and the improvement in academic achievement for students with high incident disabilities would be less effectively targeted for change.

Purpose of the Study

The purpose of this qualitative research study was to identify which evidence-based teaching practices were utilized by teachers, as well as the frequency with which general education teachers used evidence-based interventions with large effect size in the classroom to improve academic achievement for students with disabilities. A secondary purpose was to identify reasons why some teachers did not use evidence-based interventions. Videos of teachers from the Measures of Effective Teaching (MET) Longitudinal Study of Teaching Practices in America were assembled and scored using a checklist of the six most effective evidence-based practices that improve academic achievement for students with disabilities. MET videotaped some 1,868 teachers, including teachers of students with disabilities (N=1,868) over a two-year period, from the beginning of the 2009 to the end of the 2011 school year (Bill and Melinda Gates Foundation; Garrett & Steinberg, 2015; Halpin & Kieffer, 2015; Polikoff & Porter, 2014). Based on norms established in the literature on identification and evaluation of use of evidence-

based teaching practices, a pseudo-randomly selected group of 30 teachers whose teaching practices were videotaped were scored using metrics that assessed the presence or absence of the six most effective evidence-based interventions, and the frequency in which each teacher used the six most effective evidence-based interventions, from the beginning of the study, to the end of the study. Finally, a sample of 18 general education teachers from public schools across the country that had a student with a disability in class were interviewed through the use of technology, such as Skype, Face Time, Google Hangout, or in person, to discover if he or she used the six highly effective evidence-based practices to improve academic achievement for students with disabilities in his or her class, the frequency in which these evidence-based practices were used, and if they did not use best practices, why didn't they use them.

Theoretical/Conceptual Framework Overview

The theoretical framework for this study was based on Albert Bandura's (1977) Social Learning Theory. Bandura theorized that one-way people learn was by observing others in social situations and the rewards or consequences that the person received when they behaved in a certain manner. In its simplest form, if a person observed someone else behaving in a certain way and was continually being rewarded, or received positive reinforcement for his or her behavior, the observer was more likely to imitate the behavior that received rewards. Conversely, if an observer repeatedly sees that a specific behavior received consequences or negative reinforcement, the observer was less likely to imitate the behavior (Bandura, 1977).

One of the most effective ways to facilitate learning is by modeling a behavior. In order for learning by modeling to occur, the learner needs to attend to what was being modeled, retain the information, be able to reproduce or reenact what was learned, and they need to be motivated to use what was learned (Bandura, 1977). The four processes of attention, retention,

reproduction, and motivation can be inhibited by learners past experiences, beliefs, and biases. The research to practice gap in teaching is an example of how outside factors can interfere with the use of evidence-based practices in the classroom. Teachers usually teach the way that they were taught, or teach to their own learning style.

During the attentional process, the learner needs to be able to attend to what is being modeled. Awareness of what is being modeled and why it is being modeled can increase the rate of learning. In today's classrooms, teachers inform the students of the learning targets of the lesson. Similarly, lesson plans include the objectives of a lesson. In other words, a learning target or the objective of a lesson delineates what the student should be able to do at the end of the learning activity. Learning will still occur without awareness of what is being modeled, but learning will occur at a slower rate. The learner also needs to know the benefits of attending to what is being modeled, as well as the positive and negative consequences of attending to what is being modeled. Successful behaviors are added to the learners' repertoire and ineffective behaviors are discarded (Bandura, 1977).

Classroom teachers have the capacity to learn new interventions modeled for them and implement them in their classrooms, but classroom teachers are influenced by experiences, situational requirements, and their colleagues. Teachers are no different from ordinary people; they prefer to work within their comfort zone. Vygotsky's Sociocultural Theory, which is broadly consistent with Bandura's Social Learning, posited that people learn from past experiences, build off of past experiences, and from interacting with other people that are of higher intellect. Vygotsky's sociocultural theory provides insight as to why a classroom teacher would not implement new teaching practices after receiving training. One reason that a teacher does not implement new teaching practices would be that he or she lacks the prior knowledge

necessary to learn these new techniques. Therefore, scaffolding, which is another highly effective teaching technique, was not adequate for some of the teachers trained. A second reason that a teacher would not implement new teaching practices would be that the training that the teacher received was not within the teacher's zone of proximal development (Vygotsky, 1978; Vygotsky, 1986). Henceforth, they continue to use teaching strategies and interventions that they are comfortable with and have successfully implemented in the past with positive outcomes (Bandura, 1977).

In light of the new requirements to implement evidence-based interventions in the classroom to improve academic achievement, the anticipatory consequences for using outdated or disproven interventions should persuade a classroom teacher to stop using these interventions. Furthermore, if classroom teachers were aware of the effects that evidence-based interventions have on academic achievement, wouldn't they want to use them? Classroom teachers are also influenced by their peers. The social learning theory predicts that teachers use interventions that they see other teachers using. If a teacher's colleagues successfully implement evidence-based interventions in their classroom, and have seen improvements in academic achievement, then the teacher is more likely to implement evidence-based interventions in his or her own classroom. On the flip side, if the colleagues that a teacher associates with refuse to change how they teach or implement evidence-based interventions, then the teacher is less likely to implement evidence-based interventions.

During the retention process, the learner needs to form a cognitive image of the behavior being modeled, as well as verbally code what they have seen. The more times that a person sees the modeled behavior, the easier it is to retain the image in their mind and recall it at a later time. Rehearsing or practicing the actions verbally, while imaging the behavior improves proficiency.

Motor reproduction occurs when the learner physically practices the behavior. Feedback from peers about how well the person reproduced the behavior helps the learner to adjust his or her motor reproduction, or correct errors. The more opportunities that the learner has to practice, the more proficient he or she will be at reproducing the behavior (Bandura, 1977). Henceforth, if a teacher is able to see an evidence-based intervention modeled numerous times, and has the opportunity to develop a mental image of the behavior, along with time to code the verbal component of the behavior, and practice the behavior, then the teacher should be able to reproduce the behavior in the classroom.

The biggest obstacle to overcome is motivation. The learner needs motivation to implement the behavior. Incentives can take many forms, but the incentive has to be valued by the learner. Common extrinsic forms of motivation are money, promotions, and special privileges. If the outcome of a behavior is valued by the learner, then the motivation to perform the behavior is intrinsic. Therefore, if a teacher values behaviors that promote increased academic achievement, then they will continue to use the behavior. Similarly, people also perform behaviors that are self-satisfying and reject behaviors that they disapprove (Bandura, 1977). Teacher evaluations that are based on how their students perform on high stakes assessments will be self-satisfied if their students are proficient on the assessments. However, if the teacher is supposed to teach to the test, and the teacher disapproves of teaching to the test, then the teacher will not teach to the test.

According to the social learning theory, failure to change a behavior through the use of modeling can be due to lack of sufficient incentives, failure of the learner to retain what is learned, not having the necessary resources to reproduce the behavior, inadequate verbal coding of the behavior, not observing relevant activities, or physical inability to perform the behavior.

In addition, people do not always reproduce what they learn (Bandura, 1977). Even though a person learns a behavior, it is still up to the person to decide if they are going to reproduce the behavior. General education teachers that choose to utilize the most effective evidence-based interventions frequently in their classrooms to improve academic achievement for students with disabilities, have the knowledge and skills required to perform these behaviors. Nevertheless, when general education teachers choose to use less effective, outdated, or disproven interventions in the classroom, the administrator needs to determine if the teacher has a knowledge deficit or if this is a performance issue. If a knowledge deficit is to blame, then provide the teacher with learning opportunities to gain the knowledge and skills to perform the behavior. If the reason for lack of implementation of evidence-based interventions by a general education teacher is due to a performance issue, then the administrator needs to find out from the teacher why there was not a change in his or her behavior. Other barriers that will inhibit teachers' ability to implement evidence-based practices are the lack of resources or money to sustain continued use of these practices (Bandura, 1977).

Research Questions

A qualitative method was used to identify use of evidence-based teaching practices and to determine the extent to which best teaching practices from the most effective evidence-based interventions were used by general education teachers in public schools to improve academic achievement and social skills for students with disabilities. An analysis of presence/absence of best practices in the MET videotaped lessons was used to answer the first research question, thus providing the educational community with accurate data to more effectively make changes that will increase the use of best practices in public schools. General education teachers that had a student with a disability in his or her class were interviewed to discover if he or she used highly

effective evidence-based interventions to improve academic achievement for students with disabilities in class, the frequency in which these best practices were used, and to illuminate why best teaching practices were not used. Determining the reasons why teachers did not use best practices would provide the educational community with data to address circumstances that prevent teachers from implementing best practices and make changes to facilitate the use of best practices.

Research question 1. How frequently was each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities?

Research question 2. What do teachers who did not use evidence-based practices cite as reasons for not adopting evidence-based practices?

Nature of the Study

A qualitative approach was used to answer the research questions because the problem researched (use and non-use of best teaching practices, and reasons why best practices were not used) required in depth exploration via interviews, and observations of recorded teacher videos (Creswell, 2009; Shank, 2006; Patton, 2012). Best practices in the study referred to highly effective evidence-based interventions with known effect size of .80 or greater, which improve academic achievement (Burns & Ysseldyke, 2009; Forness, 2001; Hattie, 2012; Lloyd, Forness, & Kavale, 1998; Marzano, 2008; West, McCollow, Kidwell, Umbarger, & Cote, 2013). Though the method is qualitative, the results obtained from the MET videos will be unusually generalizable due to the large number of participants represented by the sample, and because the participants were drawn from six major cities in different regions of the United States, thus representing different cultural and regional differences. Similarly, the participants interviewed

were from across the country, and taught different subjects at different grade levels. The qualitative research elicited the participants' rationale, justification, and personal experiences, providing a better understanding of the chosen behaviors (Moustakas, 1994; Patton, 2012).

Using recorded videos of general education teacher practices reduced changes in students' behavior due to an observer in the classroom. Notably, the teachers that participated in the MET study chose when to record a lesson; henceforth the videos may not reflect the participants' usual teaching methods and techniques. The data gleaned from coding of the videotaped lessons answered the first research question, which is more concrete, but there would not be a way to know why a participant chose a particular approach over another. The qualitative interviews, even with the smaller number of participants, enhanced the data from viewing the MET videos by providing a deeper and richer understanding of the daily challenges the participants face, and addressed more abstract concepts (Moustakas, 1994; Patton, 2012; Shank, 2006). In particular, in-depth interviews with teachers who did and did not regularly use best practices provided insight as to why that was the case. The protected identity and anonymity of the participants in the quantitative research study encouraged the participants to avoid only recording his or her best lessons, and respond honestly to the qualitative portion of the research study (Patton, 2012; Schram, 2006). The qualitative research was conducted using structured interviews to gain richer data then could be gain from viewing videotaped lessons, as to general education teachers' experiences, feelings, and explanations for not using the best evidence-based interventions in their classroom to improve academic achievement for students with high incidence disabilities (Moustakas, 1990; Moustakas, 1994). In-depth interviews were conducted with a small sampling of 18 general education teachers that had a student with a disability in his or her class. Conducting face to face interviews using technology such as Skype

encouraged participants to respond to all of the interview questions, allowed the participants to tell his or her story about past experiences using specific interventions, and express feelings about using the most effective evidence-based interventions. The information gathered during the face to face Skype interviews led to additional questions posed, the ability to clarify questions for the participants, and provided the opportunity for the participants to be asked to provide more details and examples (Moustakas, 1990; Moustakas, 1994;).

To address research question one, an in-depth review of the current literature, tests and measures, and research on effective evidence-based practices known to improve academic achievement for students with high incidence disabilities was performed to develop a checklist to score classroom teacher use of the most effective evidence-based interventions that improve academic achievement for students with disabilities. This scoring checklist incorporated the tallying of the frequency for which each best practice was implemented during the videotaped teacher observation. The checklist quantified the extent to which each best practice was actually used in general education classrooms.

A team of experts in the field of special education reviewed the checklist to verify that it listed all known best practices and for fidelity to these best practices (that it expressed them clearly and completely for scorers). Feedback from the expert reviewers was used to make changes to the scoring instrument. A short pilot study was conducted at a local school with five teachers to determine the validity and reliability of the checklist before conducting the qualitative study. Teachers were interviewed on the frequency of use of highly effective evidence-based practices that improve academic achievement for students with disabilities, and why they did or did not use best practices.

A pseudo-randomly selected group of 30 general education teachers' videotaped lessons from the Measures of Effective Teaching (MET) database were chosen for use in the study. The District/School File was used to sort all the teachers by school district. Then each school district's files for general education teachers' files were selected. Individual Teacher File's that indicated in year one and year two that he or she had a student in class with a disability remained. Class section files were used to select teachers' classes that contained at least one student in the class with special education status. Five teachers from each school district were chosen at random from the Teacher Files and class section files that remained, making the findings from the study generalizable to public school teachers in public school districts.

The selected teachers' videos were scored based on a set of metrics that assessed the presence or absence of teaching practices that fulfill the evidence-based criteria as highly effective evidence-based interventions known to increase academic achievement for students with disabilities. Mean effect sizes were categorized as being small, medium, or large. A mean effect size of .80 or greater is considered to have a large positive effect on outcomes (Burns & Ysseldyke, 2009; Forness, 2001). Put into perspective, an effect size of 1.0 is the equivalent of one standard deviation in achievement in education or, "…advancing children's achievement by two to three years…" (Hattie, 2009, p. 7). Only interventions that have a mean effect size of .80 or larger were used in the scoring metrics.

A review of the literature for evidence-based interventions that improved academic achievement for students with high incident disabilities with a mean effect size of .80 or greater uncovered twenty-five research studies. Only six evidence-based interventions with an effect size of .80 or larger were located within the past five years. The use of inquiry based instruction had a mean effect size of .84, peer tutoring had a mean effect size of .86, graphic organizers had

a mean effect size of .93, mnemonics had a mean effect size of 1.26, reading comprehension strategies had a mean effect size of 1.44, and explicit instruction had a mean effect size of 1.68. One video was scored for each teacher. To validate the ratings, a volunteer master's level educator rated 20% of the videos. Inter rater reliability was measured after 20% of the videos had been scored by both the volunteer master's level educator and me.

The frequency of use for each intervention was calculated by adding together the results from the used column on the checklist (see appendix B). The highest overall frequency for using these interventions per teacher was six, in which the teacher would have used all six evidence-based practices in the video viewed. Then all of the scores from the videos of the 30 teachers were compiled to determine the overall frequency of use of each evidence-based intervention by all of the participants in the study.

Current research indicated that the use of the most effective evidence-based interventions for students with disabilities educated in a general education classroom improves academic achievement and social skills (Burns & Ysseldyke, 2009; Cannella, Konrad, & Pennington, 2015; Copeland & Cosbey, 2008-2009; Flower, Garwood, Brunsting, & Fox, 2014; Gable, Tonelson, Sheth, Wilson, & Park, 2012; Greenway, McCollow, Hudson, Peck, & C., 2013; Mazzotti, Rowe, & Test, 2013; McDaniel, & Jolivette, 2011; Raymond, 2008; Stichter, Conroy, & Kauffman, 2008; West, McCollow, Kidwell, Umbarger, & Cote, 2013; Yang & Rusli, 2012). Determining if general education teachers were using evidence-based interventions with large effect size would contribute to the literature on the percentage of teachers using the six most effective evidenced-based interventions for students with high incident disabilities educated in an inclusive setting. Students with disabilities require additional practice to acquire new knowledge and skills. Henceforth, the more frequently evidence-based interventions with large effects in

improving academic achievement were used by general education teachers, the better the chance of improving academic achievement, as well as more opportunities the students had to practice the skills and generalize new knowledge (Burns & Ysseldyke, 2009; Copeland & Cosbey, 2008-2009; Flower, McDaniel, & Jolivette, 2011; Yang & Rusli, 2012).

The frequency in which evidence-based interventions with large effects were used by general education teachers was important because students with disabilities require more intense, high quality instruction that is delivered through the use of direct instruction, teacher modeling, small groups, and more time to learn the content (McLeskey & Walsron, 2011). Measuring the frequency of use for the six most effective evidence-based interventions provided valuable data that was used to determine the extent in which these interventions are implemented. Determining the frequency wherein general classroom teachers use the six most effective evidence-based interventions would provide the educational community with data that can drive necessary changes.

Changes included continuing education on the use of evidence-based interventions, providing additional resources in general education classrooms to enable teachers to implement the most effective evidence-based practices more frequently, or professional development on the most effective evidence-based interventions to improve academic achievement for students with disabilities. The findings also demonstrated if these practices were occurring at all grade levels or if it is limited to elementary schools, middle schools, or high schools. The findings provided the educational community with information that could lead to changes on a much larger scale. Additional funding from the state or from the federal government may be needed to provide resources for teachers to implement the most effective evidence-based interventions for students

with disabilities that improve academic achievement and social skills, or professional development regarding the most effective evidence-based interventions.

To address research question two, 18 general education teachers that had a student with a disability in his or her class were interviewed to elicit reasons for why best practices were not always implemented. General education teachers that had a student with a disability in his or her class that responded to recruitment materials were contacted directly. The participants were assured that their responses would be anonymous, and their identity kept confidential. The interview began by asking the classroom teacher about his or her use of evidence-based interventions. The teacher was asked about the evidence-based interventions that were used most frequently, and to provide an example of how it was used. If the teacher did not indicate the use of the six most effective evidence-based interventions, he or she was asked if they used the six most effective evidence-based interventions that improve academic achievement and social skills for students with disabilities. If he or she used any of the interventions, he or she was asked how frequently they used the interventions. Next, the teacher was asked to explain why an effective evidence-based intervention was not used. If the participant did not mention the six most common reasons cited for not using evidence-based practices in current literature and research, then the participant was asked if any of the six most common reasons cited for not using evidence-based practices contributed to their non-use of evidence-based interventions. In addition, open ended questions were utilized to elicit content not covered by close ended questions. The interviewer asked the participants to add any additional reasons or justifications for not using best practices. The Herron Interview Recording Document for Use and Non-Use of Best Practices (see appendix D) was used to record the participants' responses. The interview questions were piloted by colleagues and were asked to provide feedback. Results of the pilot

study and feedback was used to determine internal consistency and reliability of the interview questions. Changes to the interview questions were based on feedback received from colleagues to increase consistency and reliability. To encourage participants to agree to be interviewed, as well as responding honestly to the questions, the identity of the participants was protected. The participants' name and school district were not included in the data collected. A number was assigned to the teacher.

Finding out if there were other reasons why teachers did not use best practices, other than what was currently cited in the literature, uncovered new obstacles that teachers encountered when trying to implementation best practices. Examining the justifications that teachers stated for not using best practices provided insight into whether the obstacles or barriers that teachers cited were real or perceived. The data obtained from the interviews can be used to remove obstacles or barriers that these teachers are confronting. The data obtained can result in changes that are more precise. The obstacles that teachers were facing may be something that they can overcome on their own, or assistance maybe needed at the building level, district level, or state level. Other obstacles could be unique to just one school or one district. If this was the case, then changes need to begin at the district level.

Themes were identified in interview transcripts via researcher coding of transcripts, and use of NVivo to assisted identification of themes and interactions among themes. Themes were rank ordered to display the frequency that each theme was mentioned by interviewees. In this way most frequently cited obstacles to adoption of best practices were identified.

Significance of the Study

Classroom teachers have the greatest influence on academic achievement for students with and without disabilities. Since the majority of students with high incident disabilities are educated in a general education setting, it was important to know if general education teachers were using the six most effective evidence-based practices. Determining general education teachers use the six most effective evidence-based practices for students with disabilities added to the limited data on teacher performance with respect to special education students that was currently available. In addition, to improve teacher effectiveness, baseline data needed to be obtained on the use of the most effective evidence-based practices. Obtaining baseline data on the utilization of the six most effective evidence-based practices provided the educational community with information needed to make decisions about the allocation of resources, staff, training, and funding needed to improve teacher effectiveness.

Similarly, students with disabilities require additional time and practice to learn and retain new knowledge. Henceforth, determining how frequently the six most effective evidence-based practices were implemented by general education teachers provided the educational community with baseline data, in which to make decisions. The more frequently general education teachers used the six most effective evidence-based practices, the better chance students with disabilities had to increase his or her academic achievement. The findings added to the current literature on the use of evidence-based practices in the educational community. Furthermore, it illuminated opportunities for teacher growth and development, and provided data for data driven decision making at the district level, state level, and federal level.

Identifying reasons why general education teachers had not implemented the six most effective evidence-based practices to improve academic achievement for students with

disabilities helped to solve the problem of infrequent or non-existed use of best practices in the classroom. Uncovering barriers or obstacles that were not cited in the previous literature and making it known to the educational community facilitated the development of solutions to remove barrier and obstacles that teachers faced when trying to implement the most effective evidence-based practices. Justifications elicited from general education teachers provided insight as to reasons why evidence-based interventions were not being used. New information obtained from general education teacher that did not use the six most effective evidence-based practices to improve academic achievement provided the educational community with data to better utilize resources and allocate funding. Changes to promote the use of the most effective evidence-based practices by general education teachers and improve academic achievement for students with disabilities are needed at the district level, state level, federal level, and to teacher education programs.

Definitions of Key Terms

Accommodations. A change in the delivery of content or assessment that makes it possible for a student with a disability to be educated in a general education classroom. The student is accountable for the same content as his or her non-disabled classmates. Accommodations can be in one of four categories. Accommodations can be how the content is presented to the student, how the student demonstrates learning, the amount of time that a student has to complete assignments or tests, and the location where the student will take the test (Harrison, Bunford, Evans, & Sarno Owens, 2013).

Adequate yearly progress. A requirement set by the No Child Left Behind Act that necessitates that every student demonstrate adequate academic progress each year at his or her grade level (NCLB, 2001; Taylor, 2009).

Best teaching practices. Highly effective evidence-based interventions with known effect size of .80 or greater, which improve academic achievement (Burns & Ysseldyke, 2009; Forness, 2001; Hattie, 2012; Lloyd, Forness, & Kavale, 1998; Marzano, 2008; West, McCollow, Kidwell, Umbarger, & Cote, 2013).

Evidence-based interventions. Teaching strategies proven to improve academic achievement or classroom behaviors that are validated by scientific research studies and empirical data (Stichter, Conroy, & Kauffman, 2008; Trochim & Donnelly, 2008; West, McCollow, Kidwell, Umbarger, & Cote, 2013).

Individual Education Plan. An individualized learning plan created to meet the specific needs of a student identified as having a disability that interferes with his or her ability to learn. This is a required under the Individuals with Disabilities Education Act for all students identified as in need of special education services (IDEA, 2004; Stichter, Conroy, & Kauffman, 2008).

Learning disability. A condition that affects a person's ability to learn, or interferes with an individual's cognitive abilities. The impairment can affect the person's written communication skills, orally communication skills, listening skills, and mathematic skills (IDEA, 2004; Stichter, Conroy, & Kauffman, 2008).

Modifications. Changes made to the content being taught for a student with a disability so that the student can still be educated in a general education setting. The extent of the modifications is based on the student's disability (Harrison, Bunford, Evans, & Sarno Owens, 2013).

Summary

Over the past 25 years special educational reforms have dramatically changed, thus requiring all states to provide a free and appropriate education to all students with disabilities and

educate these students in the least restrictive environment. In the 2013-2014 school year, 6.5 million children age 3-21 years of age received special education services under the IDEA (2004) nationwide in public schools (Institute of Educational Sciences, 2015). Individual educational programs developed to meet the academic and emotional needs of students with disabilities made it possible for the majority of these students to spend 80% of the school day in a general education classroom with their non-disabled peers, providing them with access to the general education curriculum to improve academic achievement, as well as become proficient and meet his or her grade level standards in mathematics, and English Language Arts (Aud, et al., 2011; Institute of Educational Sciences, 2014). The classroom teacher has the greatest influence on students' academic achievement, yet only 60% of students with disabilities educated in a general education classroom had a teacher that met his or her learning needs (Crawford, 2011; Stronge, Ward, & Grant, 2011; U.S. Department of Education, 2010). The use of evidence-based interventions to improve academic achievement for students with disabilities is required under the IDEA (2004), as well as the NCLB act (Flower, McDaniel, & Jolivette, 2011; Fore III, Hagan-Burke, Boon, & Smith, 2006; NCLB, 2001). Teacher effectiveness is at the forefront in the educational community to acquire and retain highly qualified and effective teachers to narrow the educational achievement gap. None the less, there was no consistent data on the use of the most effective evidence-based practices for students with disabilities educated in a general education setting, the frequency in which these practices were implements, and reasons why teachers were not using these practices.

The purpose of this qualitative research study was to identify general education teachers use the six most effective evidence-based practices to increase academic achievement for students with disability, the frequency in which these highly effective practices were

implemented, and reasons why some teachers did not use these practices. A pseudo randomly selected sample of teacher recorded videotaped lessons from the MET study, conducted in six major cities across the U.S. from 2009-2011 were used. An equal number of videos (n = 5) from the six major cities (n = 30) were viewed and a checklist was used to determine if the six most effective evidence-based practices were used by each general education teacher. A compilation of the checklists determined the frequency of use for each of the six most effective evidence-based practices.

Next, it was determined why some general education teachers did not use the most effective evidence-based practices to improve academic achievement for students with disabilities. The Herron Interview Recording Document for Use and Non-Use of Best Practices (see appendix D) was piloted to establish validity and then used to record the responses from 18 general education teachers that had a student with a disability in class for the use and non-use of the six most effective evidence-based practices. A voice recording device was used during the interviews, in conjunction with software, to transcripts the interviews verbatim. Themes were identified from the transcripts using researcher coding and NVivo to assist in identification of themes and interactions between the themes. The themes were rank ordered by frequency to delineate the most prevalent obstacle that general education teacher cite for not adopting best practices.

Chapter 2: Literature Review

The purpose of this qualitative study was to determine if general education teachers used the most effective evidence-based interventions to improve academic achievement and social skills for students with disabilities educated in a general education setting. In addition, the study determined how frequently general education teachers used the most effective evidence-based interventions. The final purpose of the study was to uncover why some general education teachers did not use the most effective evidence-based interventions in their classroom.

In the early 1970's parents of students with disabilities began to fight for the rights of their children, who were not being educated in schools with their non-disabled peers. The Fourteenth Amendment of the U.S. Constitution, which calls for equal protection under the law, was the cornerstone that sparked lawsuits against school districts that denied students with disabilities access to an education. Educational reforms over the years has improved outcomes for many students with disabilities. Special education laws drastically changed who was educated, where a student was educated, and how a student was educated. It is important to understand how and why these reforms occurred, so that we do not make the same mistakes that we made in the past. In the past, students with disabilities spent the majority of the school day in a self-contained special education classroom. However, the research indicated that students with disabilities should spend the majority of the school day in a regular education classroom alongside their non-disabled peers. This led to a paradigm shift in teaching practices. Legislators are currently drafting updates and changes to education reforms and laws, while school districts, administrators, and classroom teachers were being held accountable for student outcomes.

Although educational reforms have come a long way, there is still room for improvement. High school seniors are expected to be prepared to enter the work force or college after

graduation. Yet, employers and colleges agreed that most students graduating from high school did not have the knowledge or skills to begin a career or college without additional training or remedial courses. Implementation of the Common Core Standards was one approach that the educational community had supported to increase academic rigor, and establish minimum requirements to graduate from high school. Researchers have an abundance of data on learning disabilities and evidence-based practices that improve learning for students with disabilities. However, the classroom teacher has the greatest influence on student achievement. Teacher effectiveness has become the newest trend. Hiring and retaining the most effective teachers to improve student outcomes and close the achievement gap. Hitherto, some general education teachers chose to not use evidence-based interventions to improve academic achievement for the students with disabilities in their class.

Over the past 40 years, the role of special education teachers has changed. There are fewer self-contained special education classes, because students with disabilities must be educated in an educational setting that has the least restrictions. Some special education teachers co-teach with a general education teacher, while other special education teachers provide individualized instruction outside of the general educational setting. The role of special education teachers is diverse. They have to be flexible to meet the diverse needs of their students. Due to the paradigm shift, both general education teachers and special education teachers have changed the way they teach. The pedagogical approaches used in the past are no longer relevant, thus making it necessary to learn new techniques to meet the diverse needs of the students in general education classrooms. Although there are more similarities among special education and general education teachers, there are still many differences. Thus, the research methods chosen for this study provided insight into some of the similarities and

differences among general education and special education. In addition, this study illuminated how general teachers were able to meet the diverse needs of students with and without disabilities in their classrooms.

Documentation

This review of the literature was initiated through the use of the online databases at Northcentral University. The databases used were EBSCOhost, Educational Research Complete, ERIC, Gale Academic OneFile, ProQuest, SAGE, Teachers College Record, and Northcentral University's Dissertation and Thesis database. The key words used to search the databases were special education, inclusion, evidence-based interventions, IDEA, NCLB, RTI, ESSA, teaching strategies, education gap, and high stakes testing. A total of 208 articles were obtained and placed in RefWorks. The articles were sorted into 11 categories, beginning with the history of educational reforms in special education, followed by special education laws, current research on learning disabilities, disproportionate representation, career and college readiness, effective teaching strategies for students with disabilities, closing the achievement gap, arguments against evidence-based interventions, the changing role of special education teachers, differences among teachers, and research methods. The factors that were considered for the final selection of articles was that the research was current, peer-reviewed, authors that were reputable or considered experts in their field, the size of the study, and numerous references to well know researchers. The references and citations in the pertinent articles provided additional sources that were sought out, including seminal theorist using the online databases, and World Cat.

History of Educational Reforms in Special Education

The field of special education has changed significantly since the 1970's, shaped primarily by the outcomes of court cases that challenged the legality of not providing the same

education to students with disabilities that their non-disabled peers were receiving. Parents of students with disabilities that were not receiving an adequate and equal education as their nondisabled peers began to advocate on their behalf. Prior to major Federal court decisions in favor of equal protection under the Fourteenth Amendment of the U.S. Constitution, the Federal government did not have a role in education. Each state was responsible to set policies and provide education to students, but discrimination against children with disabilities was occurring at an exceedingly high rate. Students that were less likely to learn, for instance, students with disabilities, African American students, and students from low socioeconomic homes were excluded from educational programs**Error! Reference source not found.**. In addition, the majority of children with severe disabilities were institutionalized, receiving no education at all. Major Federal court cases, such as Pennsylvania Association for Retarded Citizens v. Pennsylvania, and Mills v. Board of Education of the District of Columbia, encouraged parents of disabled students that were not receiving an adequate and equal education as their nondisabled peers to challenge the school districts or take the school district to court for violating the Fourteenth Amendment.

In 1971, on the heels of the civil right movement in the 1950s and 1960s, the Pennsylvania Association for Retarded Citizens brought a class action lawsuit against 13 school districts in Pennsylvania, claiming that mentally retarded students' rights under the Fourteenth Amendment of the U.S. Constitution were being violated. They claimed that mentally retarded students were being excluded from educational settings due to lack of ability to learn or due to their age, which violated their civil rights. School districts excluded students from education if they were identified by a psychologist as being unable to benefit from education. Students below the age of 8 or above the age of 17, were also excluded from receiving an education, thus, eliminating a large number of intellectually disabled students from classrooms. The

Pennsylvania Association for Retarded Citizens called upon expert witnesses that provided evidence to the court that mentally retarded students with cognitive delays were able to benefit from education**Error! Reference source not found.**. Past precedent had already been set in 1954, with the Supreme Court's ruling in the Brown v. the Board of Education. In Brown v. the Board of Education the Supreme Court declared segregation of African American student to separate schools unconstitutional and violated the Fourteenth Amendment to equal protection under the law**Error! Reference source not found.**. The Pennsylvania Association for Retarded Citizens argued that segregation of mentally retarded students was unconstitutional, and was comparable to segregation of students by race. The court decided in favor of the plaintiffs requiring the school districts to make available a free, adequate, and equal public education, equivalent to the education that non-disabled students receive to intellectually disabled students (Hulett, 2009). It was estimated that at this time, there were 2 million children in the United States with disabilities receiving educational services, while another 2 million children were not receiving any educational services at all. This prompted filing of similar court cases around the country. Comparable to Brown v. the Board of Education, the court's ruling in the Pennsylvania Association for Retarded Citizens v. Pennsylvania, set a precedent for future court cases that involved equal rights to a public education set forth by the Constitution**Error! Reference source not found.**.

Similarly, in 1972 the parents of seven students with disabilities claimed that the students were being excluded from school due to their disabilities. Together the seven parents filed a class action lawsuit against the Board of Education for the District of Colombia for violating the students' Fourteenth Amendment rights to equal protection under the law. The District of Columbia Board of Education contended that the school district did not have the funding

necessary to provide a free, adequate, and equal education to students with emotional and behavioral disorders. Henceforth, they excluded students with emotional and behavioral disorders from being educated in their school district**Error! Reference source not found.**. Based on the prior federal court ruling to provide a free and equal education for mentally retarded students, the court supported past precedence and their decision was in favor of the plaintiffs. The District of Colombia Board of Education was required to provide a FAPE to the students with disabilities, regardless of the cost to the school district. The school district also had to develop a procedure to guarantee that all students with disabilities, regardless of the type of disability, receive a free, equal, and adequate public education, just like their nondisabled peers. The cost of educating a student with a disability has no bearing on whether or not a school district provides an equal education to that student with a disability (Hulett, 2009).

The outcomes from the Pennsylvania Association for Retarded Citizens v. Pennsylvania, and Mills v. Board of Education of the District of Columbia were two landmark decisions that lead to major changes in educational policy, as well as how the public viewed people with disabilities**Error! Reference source not found.**. Advocates of students with disabilities challenged past educational practices in the courts based on past precedent and equal rights for students with disabilities under the Fourteenth Amendment of the U.S. Constitution. Advocates utilized scientific evidence-based practice to obtain equal rights for students with disabilities. Despite the sweeping changes in schools, and an increase in the ability to obtain educational services for students with disabilities, studies showed that students with disabilities were still struggling to improve academically. Efforts at the state and local level had not achieved adequate results, thus supporting the need for continued educational reforms.

Past precedent was set by the court ruling in favor of the plaintiffs in both the Brown v. the Board of Education, and the Pennsylvania Association for Retarded Citizens v. Pennsylvania. These were landmark decisions that protected students' civil rights to have equal access to education under the Fourteenth Amendment to the U.S. Constitution. These decisions opened the doors for these students to attend school. African American students and students that were intellectually disabled could attend school, but their special education needs were not being met. Similarly, the court's ruling, again in favor of the plaintiff in the Mills v. Board of Education of the District of Columbia required school districts to provide a free, equal, and adequate public education to students with emotional and behavioral disorders, whether or not the school district had funding to meet the learning needs of the student. Yet, an adequate education for a student with emotional and behavioral disorders was not defined. Therefore, there is no way of knowing if the students were receiving an adequate education and if their special education needs were being met. The educational reforms that began forty years ago were the building blocks for today's special education laws. The majority of students with disabilities are educated in an educational environment with the least restrictions. The least restrictive education environment is a general education classroom. These students are receiving a free public education, but it is still unknown if they are receiving an adequate education, or if their special learning needs are being met.

Special Education Laws

In the past, students with disabilities were barred from attending schools and were not able to obtain the same education as their nondisabled peer. Advocates for students with disabilities brought about lawsuits that challenged the legality of excluding students with disabilities from attending school and receiving a comparable education to their nondisabled

peers. Henceforth, the Federal government introduced legislature that protected the rights of all students, especially students at risk for failure. Students at risk for failure are students with disabilities, minority students, and students from low socioeconomic homes. The implementation of Section 504 of the Vocational Rehabilitation Act of 1973 was implemented to protect the rights of students with disabilities. Section 504 of the Vocational Rehabilitation Act of 1973 prevented discrimination against students with disabilities and defined disabilities, but was limited to federally funded programs, thus the private sector was not held to the same standards**Error! Reference source not found.**. To address the discrimination and exclusion of these children, the federal government enacted the Education of All Handicapped Children Act in 1975. The Education of All Handicapped Children Act mandated an equal education for all students, including students with disabilities, African American students, and student from low socioeconomic homes. Prior to the Education of All Handicapped Children Act in 1975, these students were omitted from schools in some states because of their low potential to learn (Hardman and Dawson, 2008). The Education of All Handicapped Children Act of 1975, otherwise known as Public Law number 94-142, required schools to provide a free, equal, and appropriate education to all students with disabilities that was equivilant to the education being provided to students without disabilities, regardless of cost to the school district for provisions. Accommodations had to be implemented that were specific to the special needs of students with disabilities, at no cost to the parents. Procedural safeguards had to be developed by the school to ensure that students with disabilities were not discriminated against, and that education was provided in the least restrictive educational setting (Hulett, 2009). Schools districts were forced to devlop and implement individualized instruction for students with disabilities that were specially designed to meet each student's specific learning needs and promote academic

achievement that was measurable**Error! Reference source not found.**. Although these legal decisions represented clear gains for students with disabilities, these students needed more than just equal educational opportunties similar to students without disabilities. Students with disabilities need to be taught by teachers that have specialized training in the use of the most effective evidence-based practices.

When the Education of All Handicapped Children Act was implemented, it was estimated that approximately eight million children with disabilities who were receiving special education services, were not receiving an adequate education, in the least restricted environment. Concurrently, it was estimated that over 1 million children with disabilities were not being educated or receiving special education services **Error! Reference source not found.**. Although the Education of all Handicapped Children Act of 1975, later renamed the Individuals with Disabilities Act (IDEA) in 1990, mandated a free and appropriate public education (FAPE) for students with disabilities. In addition, the school districts were required to provide a FAPE in in the least restrictive educational environment, not all students with disabilities were receiving a quality education **Error! Reference source not found.**. Students with disabilities were often educated outside of a general education setting, which was more restrictive. Many were educated in a self-contained special education classroom, with a special education teacher to meet their individual learning needs. However, the students educated in a self-contained special education classroom did not have access to the general education curriculum and were not being required to meet their grade level learning standards, which was different from the expectations of their non-disabled peers. Students with disabilities were making poor academic progress, often performing at one to two grade levels below their non-disabled peers. Due to their poor academic achievement, students with disabilities were excluded from high stakes state and

national assessments, which were used to evaluate attainment of grade level learning standards and achievement.

The Americans with Disabilities Act (ADA) (1990) went above and beyond Section 504 of the Vocational Rehabilitation Act of 1973, by protecting the civil rights of disabled students in both private and public sector, regardless of whether programs or facilities were federally funded. The ADA required all local education agencies to be accessible to students with disabilities, and to provide services to disabled students that made it possible for them to be educated in the least restrictive educational setting **Error! Reference source not found.**. The IDEA of 1990, was later amended and reauthorized by Congress in 1997, and in 2004 to address the need for higher expectations and improvement in academic achievement for student with disabilities. IDEA required teachers to use evidence-based interventions to improve academic achievement for students with disabilities. In addition, school districts had to provide students with disabilities access to the regular classroom curriculum. Under these mandates, teachers were held accountable for student learning**Error! Reference source not found.**. In order for school districts to receive federal funding, aimed at covering the expenses of educating students receiving services under IDEA, schools had to meet the expectation outlined in IDEA. Schools were obligated to identify children with disabilities through Child Find programs. These programs screened children to determine if the child was in need of special education services. The process for determining eligibility or need for special education services included the use of unbiased assessments, involvement of the student when appropriate, and his or her parents in the decision making process. The parents and student were important members of the team that was put together to determine the need for services. Their input was a valuable addition to the academic assessments used to determine eligibility. Henceforth, it was paramount to invite the

student, and the student's parents to the individual education planning (IEP) meetings. In addition to identification of disabilities and determining eligibility for special education services, schools have to develop an IEP for a student with a disability, implement evidence-based interventions to promote academic achievement, develop annual goals that the student will attain, measure the student's progress towards the goals, and evaluate of the effectiveness of student's IEP on a regular basis**Error! Reference source not found.**.

The No Child Left Behind Act (NCLB) (2001), was not just for students with disabilities. It was enacted to improve academic achievement for all students and ensure that all students receive a quality education, and holds schools accountable for providing the resources needed for every child to be successful. Numerous requirements were delineated that state and local educational agencies had to implement to promote academic achievement for students, thus avoiding sanctions set forth by the federal government. Due to the diversity and needs in each state, the U.S. Department of Education sanctioned each state to develop academic learning standards that meet the needs of their students. In addition, the states were required to develop a plan to narrow the achievement gap in their state, so that all students would become proficient**Error! Reference source not found.**.

The NCLB mandated all state and local educational agencies to increase the number of highly qualified teachers and confirm teacher competence. Teachers of core curriculum need to be subject matter experts in the areas they teach, and use scientific research based methods to plan and implement learning activities. Studies on the use of scientific research based methods demonstrated that students at risk for failure, such as minorities, students from families with low socioeconomic status, students with disabilities, and English language learners, benefited from the use of scientific research based methods. The use of these scientific research based methods

with at risk populations has improved academic achievement and social skills. High risk students and general education students currently participate in high staked testing to confirm that adequate yearly progress was attained. In 2014, all students had to demonstrate proficiency on their grade level state learning standards. Poorly performing schools that did not making adequate yearly progress were deemed as in need of improvement, and if there was not improvement in two years, parents had the option to transfer their child to another school in the district that is considered a high performing school. In addition, schools that did not make adequately yearly progress would have to provide students with low socioeconomic status, afterschool tutoring, at no cost to the parents (Good, Burch, Stewart, Acosta, & Heinrich, 2014).

The regulations set forth by NCLB to close the achievement gap provided more challenging curriculum to students with disabilities by promoting increased access to the same curriculum as their non-disabled peers. In addition, higher learning expectations were instilled. Teachers were mandated to use evidence-based interventions and insure that all students made adequate yearly progress. The general education classroom teachers were obligation to monitor student progress and make data driven changes to instruction. NCLB legislature promoted additional professional development for teachers to meet the increased demands placed on them from the implementation of NCLB**Error! Reference source not found.**. Furthermore, teachers were accountable for their own professional development, and to stay abreast of what is going on in their field.

The most recent educational reforms that impacted the rights of students with disabilities were the IDEA (2004), the ADA (1990), and Section 504 of the Vocational Rehabilitation Act of 1973. The IDEA (2004) expanded the rights of students' with learning disabilities by compelling public schools to use Child Find for early identification of students in need of special

education services, evaluate these children, and assemble a heterogeneous team that included the student's parents to evaluate the assessments, and ascertain the need for services. If the team deems the need for special education services, due to how the disability interferes with a student's ability to learn, then the team works together to determine the type of services that the student needs, and develops an individual education plan (IEP) to meet the specific needs of the student. The school district is required to provide the necessary services delineated by the IEP, at no cost to the child's parents (Hulett, 2009; NCLD Public Policy, 2012). In addition, the IDEA (2004) compelled school districts to take students out of self-contained special education classrooms and educate them in a general education classroom, which would allow greater access to the general education curriculum and is the least restrictive educational environment (Harvey, Yssel, Bauserman, & Merbler, 2010; Hulett, 2009; NCLD Policy Team, 2012).

Presently, Section 504 of the Rehabilitation Act of 1973, together with the IDEA (2004), made it possible for students with disabilities to be educated in a general education setting by requiring schools to provide appropriate accommodations that allow them to be educated in the least restrictive educational environment and participate in all school activities. Moreover, when a student has an IEP, the learning interventions need to be evidence-based, monitored for effectiveness, and changes to the interventions need to be made that are based on the student progress or response to the intervention (U.S. Department of Education, 2006). The NCLB (2001), enacted by the Federal government to narrow the educational achievement gap, imposed expectations for all students, including students at risk of failure to make adequate yearly progress (AYP) (Harvey, Yssel, Bauserman, & Merbler, 2010). Increased pressure was placed on school districts to improve academic achievement for all students, including students with disabilities, minority students, students from low socioeconomic homes, and English language

learners, to score in the proficient range on high stakes mathematic assessment, as well as high stakes reading assessments (107 Congress, 2002; Hulett, 2009). In response to overwhelming concerns to meet the expectation set by NCLB regulations by school districts and states, President Obama signed an executive order in 2011 that allowed states to apply for a waiver from NCLB. States that chose to apply for a waiver would still be accountable for student achievement, but they had to develop their own plan to improve academic achievement for all students and to measure teacher effectiveness (Dillion, 2011). In addition, NCLB (2001) requires schools to hire highly qualified teachers in general and special education to improve academic achievement (107 Congress, 2002; Copeland & Cosbey, 2008-2009; Huberman, Navo, & Parrish, 2012; Hulett, 2009; Kutash, Duchnowski, & Lynn, 2009). However, the NCLB (2001), was recently replaced by the Every Student Succeeds Act (ESSA) in 2015, which is less prescriptive and provides the states with more autonomy (West & Shepherd, 2016). The ESSA is being transitioned in, as the NCLB (2001) is being phased out (U.S. Department of Education, 2016). Although the ESSA was enacted to improve academic achievement for all students, the regulations do not require teachers to be highly qualified anymore, thus allowing schools to hire teachers that have less qualification (U.S. Department of Education, 2016; West & Shepherd, 2016).

The IDEA (2004), ADA (1990), Section 504 of the Vocational Rehabilitation Act (1973), and NCLB (2001) have changed classroom dynamics. Schools districts currently provide accommodations to students with disabilities so they can access the general education environment, be educated in the least restrictive environment, and by highly educated teachers that use evidence-based interventions to meet their learning needs and improve academic achievement. This has led to a paradigm change, with the majority of students with disabilities

educated by a general education teacher, alongside their non-disabled peers. The NCLB required school districts to close the achievement gap by using scientific research based methods to improve academic achievement, brought about by low performing schools whose students were not meeting the expectations by making adequate yearly progress, and becoming proficient in both mathematics and reading.

Current Research on Learning Disabilities

In an effort to determine if the educational reforms implemented over the years had improved the long-term outcomes of students with disabilities, longitudinal studies were conducted by the United States Department of Education. The National Longitudinal Transitional Study 1 (NLTS1) tracked students with disabilities from 1985-1990 post high school graduation, and the National Longitudinal Study 2 (NLTS2) which took place between 2000-2005 (Newman, Wagner, Cameto, Knokey & Shaver, 2010). The results of NLTS2 found that students with disabilities with increased intellectual abilities and success in high school had better long-term outcomes. These students were more likely to enroll in postsecondary education, attend job-training programs, obtain employment, live independently, and were more involved in the community (Sanford, et al., 2011). When results of NLTS1 study was compared to NLTS2 study, there was a significant increase in participants arrested from 1990 to 2005 (Kutash, Duchnowski, & Lynn, 2009; Newman, Wagner, Cameto, Knokey, & Shaver, 2010). In 1990, 16% of the participants in NLTS1 were arrested compared to 27% of participants in NLTS2 (Newman, Wagner, Cameto, Knokey & Shaver, 2010). Similarly, research conducted by the National Center for Learning Disabilities in 2008 had comparable findings to the NLTS1 and NLTS2 studies. The National Center for Learning Disabilities study found that, “41% of students with LD dropped out of school in 1997, about one quarter (24%) dropped out in 2007”

(Cortiella, 2009, p. 18). While only surpassed by students with emotional and behavioral disorders that dropped out of high school, "… (at 44%)" (Cortiella, 2009, p. 18). Students with disabilities had a lower rate than their non-disabled peers of attending a two year or four-year college after high school, or attained an advanced degree then their non-disabled peers. By the same token, the percentage of students with emotional and behavioral disorders that were incarcerated within five years of leaving high school was at a stifling 70% (Cortiella, 2011; Gable, Sheth, & Park, 2012; Kern, Hilt-Panahon, & Sokel, 2009).

The longitudinal research clearly indicates the need for additional early identification and early interventions for children with disabilities. In addition, general education teachers need to use effective evidence-based interventions that will improve academic achievement and social skills for students with disabilities. Early intervention, combined with evidence-based interventions can decrease the manifestation of behavioral problems, and enhance academic achievement. When students with disabilities are successful both academically and socially, they are less likely to drop out of school. Investing the time, money, and resources to improve graduation rates for students with disabilities increases the chances for these students to be successful in the future. More students with disabilities will enroll in college, obtain better jobs, have better relationships with friends and loved ones in the future, and will avoid incarceration. They have a greater chance of becoming productive citizens that contribute to their community.

Disproportionate Representation

Historically, minorities have been disproportionate represented as in need of special education, and even labeled as being mentally retarded, or now more appropriately identified as having an intellectual disability. African American students are identified at an increased rate than any other ethnic group as in need of special education, and twice as likely to be categorized

as a student with an emotional or behavioral disorder (Aron & Loprest, 2012). Statistics demonstrate that African American students are identified as having a cognitive or intellectual disability more than other minorities, especially male students. This in part is due to culturally biased assessments that inaccurately indicated that these students had a severe disability. Thus, they are placed in a more restrictive learning environment, and succumb to more disciplinary actions. Students placed in a more restrictive environment have less opportunity for academic achievement and therefore are less likely to demonstrate substantial academic improvement to be excluded from special education services (Sullivan, et al., 2009). African American students in special education spend a larger portion of the school day in a special education classroom than in a general education classroom. Similarly, it is common for English Language Learners to be misidentified, again from the culturally biased assessments and limited ability to communicate in English, as in need of special education services, especially Hispanic students. Finally, recent data indicates that males are more likely to be identified as in need of special education than females (Aron & Loprest, 2012).

Statistics by race and ethnicity from the 2012-2013 school year for public school children ages 3-21 indicated that IDEA part B provided services to 3,396,133 white students or 8.6% of the population served, 1,189,148 African American students accounting for 5.7% of the population served, and 1,406,536 Hispanic children or 6.5% of the population served. However, African American children receiving services under the IDEA part B by race and ethnicity during the 2012-2013 school year for an emotional disorder was 8.1%, followed by white children at 5.7%, and Hispanic children at 3.7%. Similarly, 9.8% African American children received services for an intellectual disability, followed by Hispanic children at 6.4%, and white children at 5.8% (National Center for Educational Statistics, 2014).

Many circumstances have been recognized that influence the increased identification of African Americans males as having a learning disability and in need of special education services to comply with IDEA part B regulations. Poverty, ethnic background, lack of education prior to beginning school, and parental attainment of a college education are some circumstances that contribute to the overabundance of African Americans identified as in need of special education services. Moreover, faculty that is culturally bias, lack of teachers from diverse background, bias screening assessments, and bias achievement tests can influence misidentification of a learning disability (Vallas, 2009; Aron & Loprest, 1012). States are required to track disproportionate representation of minorities in special education. If a state identifies that a disproportionate representation of minorities exists, a plan needs to be developed, implemented, and monitored. The goal is to be able to return these students to a general education classroom. Providing interventions and accommodations that enable these students to return to a general education classroom provides them with added opportunities for academic achievement. However, it is common for states that have disproportionate representation of minorities in special education to provide professional development on diversity to the classroom teachers and support staff. The effectiveness of these programs implemented to reduce misidentification of minority students are still under investigations by researchers (Aron & Loprest, 2012).

Implementation of the most effective evidence-based practices in general education classrooms would decrease the numbers of inappropriate referrals for special education services for minority students. Using a three-tiered response to intervention approach would provide students with opportunities to remain in a general education classroom and receive additional support by their classroom teacher. The student would be educated with his or her peers, in a

small group setting, and be accessing his or her grade level general education curriculum. If the student does not respond to the evidence-based interventions in tier one, two, and three, then a referred would be made for a special education evaluation. The classroom teacher will already have the documentation necessary for the referral by keeping a running record of the student's response to the evidence-based interventions.

Career and College Readiness

Post-secondary employers and colleges have found students graduating from high school are not adequately prepare to work in entry level jobs in the workforce. Similarly, high school graduates that pursue a post-secondary education lack the vigor needed to be successful in college. In response to the lack of knowledge and job skills needed for students graduating high school, the Common Core Standards were developed and implemented across the country to prepare students for the rigor at the post-secondary education level, and for employment in the 21st century. The Common Core Standards are currently available for English Language Arts and Mathematics. Common Core Standards for Science and Social Studies are being developed. Forty-six of the fifty states in the U.S., and the District of Columbia adopted the Common Core Standards. The other four states have developed their own state standards. However, at this point in time, all of the states, as well as the District of Columbia, have College and Career Ready (CCR) standards in place, but only nineteen states have CCR graduation requirements. Yet, it is expected that students in the post-secondary setting have adequate literacy skills in high school and higher order thinking skills needed is the post-secondary setting (Craig, 2008; Perin, 2011). Higher order thinking skills are based on Blooms Taxonomy and include analysis, synthesis, and evaluation of information and data (Frey & Fishcher, 2011). Colleges that have vigorous admission requirements only accept students that have demonstrated their ability to

communicate effectively and to think critically. Though, community colleges and technical colleges, with less vigorous requirements for admission, enroll students that are underprepared, making them less likely to be successful in post-secondary educational settings without interventions (Perin, 2011).

The direct correlation between academic literacy and academic success, has led to the creation of writing centers and writing labs to improve literacy skills and academic achievement at the college level (Goldstein & Perin, 2008). Writing centers and writing labs are available for students at most colleges and universities, which students utilize on an as needed basis. Yet, most post-secondary students do not initially utilize these resources unless the course instructor recommends the use of the writing center or writing lab to successfully complete the course. At the community college level, when students did use available services, 83% of students requested assistance with grammar, followed by 58% of students requesting assistance with organization of a writing assignment, and 33% of students requested assistance with instructor's comments (Robinson, 2009). Another approach that colleges commonly utilize is having all students complete an assessment prior to enrollment to identify students at risk for academic failure due to lack of basic skills. Students that do not possess the necessary skills are placed into remedial courses based on the results of their assessments. Students unprepared for college, requiring remediation benefited from enrollment in a developmental English course, and received grades in introductory courses that were similar to students that were academically prepared for college (Goldstein & Perin, 2008).

Reading and writing across the curriculum is an approach used in the pre-and post-secondary setting. Embedding reading and writing skills into the core curriculum affords students additional opportunities to practice and develop their skills in the context of their

courses, thereby improving students' ability to connect literacy skills to course requirements (Craig, 2008). Learning activities in context and that have real world applications can motivate students to improve their literacy skills. Integration of reading and writing into the curriculum promotes development of communication skills, but there are barriers to the use of reading and writing in all courses at the post-secondary level. One major barrier is that post-secondary faculty are usually experts in their field and would not possess the knowledge or skills needed to incorporate reading and writing into the curriculum (Perin, 2011). Others barriers to reading and writing across the curriculum is that post-secondary faculty do not feel that it is their role to teach remedial skills and they would require additional class time to incorporate remediation into the curriculum. Furthermore, additional preparatory time would be necessary for faculty to collaborate with colleagues and develop learning activities that were contextually based (Perin, 2011).

Furthermore, kindergarten through twelfth grade classroom teachers need training on the Common Core Standards and the CCR standards. They need time to learn the standards and adapt their teaching strategies, which require additional resources and support from administration. In addition, new teaching materials need to be purchased that align with the new standards, opportunities for professional development need to be expanded, technology will have to be up to date, and new teaching techniques will need to be acquired to meet the rigorous academic standards. Similarly, post-secondary teacher training courses will need to reflect and teach the Common Core Standards, and the CCR standards (Achieve, 2013).

Students will also need additional support to meet the Common Core Standards, and the CCR standards at all grade levels, especially at the high school level, where graduation in some states are based on successfully meeting the new standards. Students living in poverty that

qualify for discounted or free breakfast and lunch at school, minorities, students from low socioeconomic families, and students with disabilities are at the greatest risk for not meeting the requirements of the Common Core Standards, or the CCR standards. These students will need multimodal support to become proficient and meet the requirements for graduation. School districts are responsible for providing all students with access to the Common Core Standards and the CCR standards, as well as providing students with support to learn the standards. Strategies that support mastery of the more robust content and ability to conceptualize knowledge across the curriculum range from tutoring, accelerated learning, online learning, additional instructional time, and the use of data driven interventions (Achieve, 2013; Gersten, et al., 2015).

The Partnership for Assessment of Readiness for College and Careers (PARCC) arose from the forty-six states, and the District of Columbia, to work collaboratively with stakeholders, such as universities and industries to create and implement the Common Core Standards. The Common Core Standards took years to implement. To gauge effectiveness of teacher training, the Smarter Balances Assessment Consortium developed tests to assess college and career readiness. The Smarter Balance Assessments are computer based and provide accommodations for students that have disabilities. In addition, the assessment provides timely feedback to teachers and administrators. Timely feedback facilitates data driven instruction used to alter lessons, or implement different interventions to meet the diverse learning needs of the class. Moreover, the Smarter Balance Assessment provided classroom teachers with valuable data regarding students' trajectories towards CCR (Achieve, 2013).

To become college and career ready, students with disabilities need to be educated in general education classrooms to gain access to grade level curriculum and be taught by teachers

that use the Common Core Standards. General education teachers need to implement effective evidence-based interventions for students with disabilities that will increase academic achievement and meet the rigor of the Common Core Standards. This is especially true in states that require proficiency of the Common Core Standards to graduate from high school. General education teachers will need to continually assess the effectiveness of each evidence-based interventions used to insure student mastery of content and make changes to instruction based on the data. In addition, teachers with a heterogenic student population will need to continually collect data to make decisions and differentiate the evidence-based interventions used to meet the diverse needs of all students.

Effective Teaching Strategies for Students with Disabilities

Effective evidence-based teaching strategies for students with disabilities vary by the type and the severity of the disability. When evidence-based interventions are used for students with disabilities that are appropriate to meet their learning needs, the students will be more actively engaged in learning, spending more time on task, which in turn leads to improved academic achievement (Browell, Smith, Crockett, & Griffin, 2012; Dean, Ross Hubbell, Pitler, & Stone, 2012; Rathvon, 2008; Raymond, 2008; Stichter, Conroy & Kauffman, 2008). However, not all evidence-based interventions are generalizable, therefore, an intervention that is effective for one student, might not be effective for another student. General education teachers need to be flexible and have a sizeable repertoire of evidence-based interventions that can be implemented to meet the diverse needs of the students (Dudley-Marling, 2011). Subsequently, there is no definitive list that general education teachers can make use of when trying to meet the need of every student in his or her class with a disability. When teaching new information to students with mild disabilities, teaching strategies such as explicit instructions, frequent positive

feedback, and additional time to practice is necessary for the students to grasp the new information (Gersten, et al., 2015). Activities such as role-playing and acting out scenarios provide students with additional practice to reinforcement new information, hence improving proficiency (Dean, Ross Hubbell, Pitler, & Stone, 2012; Rathvon, 2008).

Students with disabilities should also be taught to use multiple cognitive learning strategies, such as mnemonics, step wise processing, rehearsal, visualization, graphic organizers, grouping, rhyming, and acronyms to gather and retain new information (Heiman, 2006; Strichart & Mangrum, 2010). Interventions that have a medium to large effect on learning are teaching reading comprehension strategies, word recognition strategies, using direct instruction, formative evaluations, and computer-assisted instruction (Forness, 2001). When formative assessment is paired with positive feedback, the effect size increases to 1.12 (Lloyd, Forness, & Kavale, 1998).

The relationship between literacy and academic success has been researched extensively in the primary grades. The majority of the research found a direct link between literacy and academic success in the elementary and secondary education setting. Poor literacy skills can impair student learning and socialization, which can later develop into behavioral issues. Similarly, students with strong literacy skills are more likely to experience academic achievement and effective socialization (Kuder, 2008). In the primary grades, programs have been implemented that identify students at risk of failure due to inadequate literacy skills and provide interventions to improve student achievement. Likewise, there are numerous studies on literacy and the relationship to academic success in post-secondary education, still students with poor literacy skills struggle academically and do not graduate from college due to poor academic achievement.

Effective evidence-based teaching interventions that improve academic achievement include the use of conceptualizations, cooperative learning, student centered learning, teaching students learning strategies such as the use of mnemonics to retain new information, the use of graphic organizers, peer tutoring, and self-regulations skills (Perin, 2011). Effective teaching and learning require students to become actively engaged in learning, learning needs to go beyond the confines of the classroom, teachers need to become familiar with students' prior knowledge, and scaffold learning from students' prior knowledge (Jackson, 2011; Scales, 2011). Teaching students how to create graphic organizers can help students organize information and connect new information to prior knowledge, which in turn leads to learners that are more independent (Frey & Fisher, 2011; Scales, 2011). These evidenced-based teaching interventions are effective in the Kindergarten through twelfth grade population, as well as at the post-secondary level.

Other evidence-based interventions that improve academic achievement and social skills in an inclusive classroom are cooperative learning, peer-mediation, differentiated learning, and co-teaching (Browell, Smith, Crockett, & Griffin, 2012; Copeland & Cosbey, 2008-2009; Fore III, Riser, & Boon, 2006; Rathvon, 2008; Scanlon & Baker, 2012; Strichart & Mangrum, 2010). Designing and implementing universally designed lesson plans provides students with the ability to attain proficiency and meet learning targets (Children, 2011).

Multiple research studies indicate that the use of cooperative group learning improves both academic and social skills. Two of the most prominent figures in education, Piaget and Vygotsky, research supports the use of cooperative group learning. Piaget theorized cognitive development was more effective for students when they are interacting with peers, instead of with an expert or the teacher (Fore III, Riser, & Boon, 2006; Forness, 2001; Kuhn D., 2015).

Similarly, Vygotsky theorized that each student has a zone of proximal development (ZPD), that is a gap amongst what a student's developmental level is when learning independently and a student's developmental potential when working collaboratively with a person at a higher developmental level (Vygotsky, 1986). Lower functioning students benefit significantly from being paired with higher functioning students. Thus, heterogeneous grouping is optimal for superior learning outcomes. When working collaboratively, students share their knowledge base with other group members. This in turn, helps to activate prior knowledge, in which scaffolding of learning can occur, supporting application and mastery of new knowledge. Problem based learning and Socratic debates, when used in conjunction with collaborative learning produce increased metacognition (Kuhn, 2015). Therefore, cooperative learning activities such as jigsaw teaching, peer tutoring, and the use of cooperative groups can improve academic achievement for students with disabilities and can also improve their self-esteem (Dean, Ross Hubbell, Pitler, & Stone, 2012; Fore III, Riser, & Boon, 2006; Rathvon, 2008).

Howard Gardner's theory of multiple intelligences posits that there are eight intelligences that people possess, which include, "linguistics, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal", (Gardner, 2004, p. 15) and naturalist. Each person has a variety of strengths and weaknesses within the eight intelligences. However, standardized testing only measures a person's linguist/verbal and spatial/mathematics intelligences, therefore making standardized tests biased (Gardner, 1983; Helding, 2009). Discovering each student's strongest intelligences and designing learning opportunities that allow students to use their strongest intelligences enhances learning for students with or without learning disabilities (Andronache, Bocos, Stanciu, & Raluca, 2011; Gardner, 1983; Gardner, 2004). Henceforth, creating lessons that include activities in all eight intelligences would meet the diverse learning

needs of the students by allowing them to use their strongest intelligences when learning new information, as well as providing them with opportunities to improve their weaker intelligences. Learning can also be differentiated by allowing students to choose how they want to learn a particular concept (Andronache, Bocos, Stanciu & Raluca, 2011; Jackson, Gaudet, McDaniel, & Brammer, 2009). Similarly, allowing students to choose how they will demonstrate mastery of content to the teacher also provides the student with the ability to use their strongest intelligence to demonstrate his or her understanding of concepts (Andronache, Bocos, Stanciu, & Raluca, 2011). On the same token, creating universally designed lessons provides opportunities for all students to learn (Children, 2011).

There are numerous effective evidence-based interventions that are known to effect academic achievement and social skills for students with disabilities and their non-disabled peers. General education teachers work with a diverse population of students and to meet the learning needs of all students, they need to have a large repertoire of evidence-based interventions to draw upon. In addition, evidence-based interventions are not all generalizable, making it more difficult to meet the needs of a heterogeneous class. General education teachers need to be knowledgeable of the most effective evidence-based interventions for different learning disabilities, to tailor individualized, differentiated instruction and interventions that best meet the diverse needs of the learners. Yet, teachers have not been told that they should be using specific interventions. They need to apply their professional judgement. However, starting with interventions that have a known effect of .80 or higher would provide students with disabilities educated in a general education classroom, the greatest chance of improving academically.

Closing the Achievement Gap

The Race to the Top (RTT) program, which began in 2009, designed to close the knowledge gap in the United States, required that schools receiving grants would implement policies to improve teacher performance, teacher assessments, and teacher evaluation. The goal was to have a highly qualified teacher in every classroom (Hallgren, James-Burdumy, & Perez-Johnson, 2014). The National Council on Teacher Quality define best practices as requiring all teachers, regardless of their tenure status to be evaluated annually, be observed multiple times throughout the school year, and receive constructive feedback, especially for new teachers (National Council on Teacher Quality, 2014). However, only 27 states conduct yearly evaluation, leaving 24 states that are not conducting annual teacher evaluations. Multiple observations are required for all teachers in 13 states, multiple observations are required for some teachers in 22 states, and multiple observations are not required for any teachers in 16 states (National Council on Teacher Quality, 2014).

The Council for Exceptional Children (CEC) and the Children and Youth Network 2011-2013 public policy agenda for the 112th Congress, to improve the quality of education that students with disabilities receive included improving teacher effectiveness by enhancing teacher education programs, new teacher induction programs, and mentoring programs. In addition, the CEC supported the implementation of effective teaching, backed by evidence-based practices, and advocated for the use of Response to Intervention, Universally Designed Learning, and Positive Behavioral Interventions and Support to increase academic achievement for students with disabilities (Children, 2011).

Since all classroom teachers are not observed annually, there is no definitive data on the use of the most effective evidence-based practices utilized in general education classrooms to improve academic achievement for students with disabilities. Teachers that are observed

annually have announced observations. Announced observations in many school districts allow the classroom teacher to choose the day and period to be observed. Henceforth, the observed lesson is usually conducted in an ideal setting, not reflecting the daily day to day instruction. There is no way of telling if the teacher's lessons are always as well planned out and incorporate evidence-based practices on a regular basis.

Arguments Against Evidence-Based Interventions

There are many arguments against the use of evidence-based interventions in general education classrooms to improve academic achievement and social skills for students with disabilities. The arguments range from the lack of education, to being forced to use curriculum designed only to improve academic achievement scores on high-stakes assessments. Although inclusion is not a new concept and has been backed by research, general education teachers often feel that they are ill prepared or lack the knowledge to modify individual assignments for students with disabilities without changing the teaching strategy used for the entire class (Kurth & Keegan, 2014; Scalon & Baker, 2012). A major concern expressed by general education teachers is that they felt as if they were not well enough prepared to meet the needs of the students with disabilities and the needs of the rest of the class (Scanlon & Baker, 2012).

Teachers felt pressured by the NCLB Act to ensure that all students in their class were proficient on high-stakes standardized assessments. Henceforth, many general education teachers teach to the test in order for their students to score in the proficient range on standardized tests and make adequately yearly progress (Thompson & Allen, 2012). General education teachers also believe that the time spent modifying the content for a student with a disability would take precious time away from working with the rest of the class (Scanlon & Baker, 2012). Although, research indicates that it takes on average 60 minutes to adapt the

curriculum for students with disabilities (Kurth & Keegan, 2014). If there are only a few students in a general education class with disabilities, accommodations for the students with disabilities are not usually rendered (Gable, Tonelson, Sheth, Wilson, & Park, 2012; Jordan, Schwartz, & McGhie-Richmond, 2009; McLeskey & Walsron, 2011; Scalon & Baker, 2012; Wells, 2009).

Even though the research supports using evidence-based interventions that improve academic achievement and social skills, most interventions are not generalizable, therefore, even the most effective interventions will only work in certain situations (Dudley-Marling, 2011). Furthermore, some school districts require general education teachers to follow a curriculum guide that dictates what, when, and how lessons are delivered, instead of allowing teachers to individualize and differentiate lessons to teach the curriculum and meet the needs of all students (Thompson & Allen, 2012). Students with emotional and behavioral disorders (EBD) and students with attention deficit hyperactivity disorders (ADHD) are known to not work up to their ability and score lower than their non-disable peers on statewide assessments in reading, writing, and math. In 2012, only 34% of students with EBD reached the minimum criteria in math, and 44% reached the minimum criteria for reading on statewide assessments (Harrison, Bunford, Evans, & Sarno Owens, 2013). The poor performance on statewide assessments by students with ADHD and EBD educated in a general education classroom impacts a school's overall performance and annual yearly progress. In addition, the lower scores can impact the school district's ability to show significant improvement (Harrison, Bunford, Evans, & Sarno Owens, 2013). Teachers fear that inadequate standardized test scores are interpreted as lack of student knowledge and ineffective teaching, while administrators interpret inadequate standardized test scores as a failing school (Thompson & Allen, 2012).

Accommodations for students with disabilities, for the most part are related to assessments and evaluation, not the delivery of course content, therefore general education teachers believe that it is not necessary to provide the accommodations to these students on a daily basis (Scalon & Baker, 2012). When the accommodations include classroom instruction, general education teachers do not feel as if they have the knowledge and skills to meet the requirements set forth by the students' IEP (Scalon & Baker, 2012). Henceforth, teachers with low self-efficacy about his or her ability to adapt learning for a student with a disability are less inclined to implement effective evidence-based practices to improve academic achievement. However, teacher self-efficacy to adapt learning to meet the learning needs of students with disabilities can change. Inclusionary teachers can increase their self-efficacy by attending continuing education courses or in-services provided by their school district. A teacher's self-efficacy for adapting learning to meet the needs of students with disabilities can be doubled by attending eight or more hours of training within a three-year period (Kosko & Wilkins, 2009). The most common accommodations that general education teachers implement are ones that do not include instruction, such as the use of a calculator, extended time on assessments, and providing a quiet place with no distractions during an assessment (McLeskey & Walsron, 2011; Scalon & Baker, 2012). Lack of shared planning time with special education teachers has also contributed to the lack of knowledge and ability to provide accommodations for students with disabilities and the implementation of more evidence-based interventions in an inclusive setting (Wells, 2009).

The research to practice gap is another element that contributes to the lack of evidence-based practices being used in general education classrooms (Grima-Farrell, Bain, & McDonagh, 2011). Three factors that interfere with the implementation of research based practices are, "…

usability, accessibility, and trustworthiness of the research" (Grima-Farrell, Bain, & McDonagh, 2011, p. 119). Lack of training in teacher education programs is another reason that evidence-based interventions are not used by general education teachers. Teachers that received training as part of their college programs on inclusionary practices feel as though the coursework they received was not useful. Teachers that attended in-services on inclusionary practices do not think that the training is worthwhile if they cannot apply it to the subject that they teach or to a specific student in their class with a disability (Kosko & Wilkins, 2009). Teachers report that lack of access to the most current research is one barrier that prevents them from using the most up to date evidence-based interventions to improve academic achievement for students with disabilities. Similarly, without access to current research findings, teachers feel inept to implement the latest research findings into practice (Gable, Tonelson, Sheth, Wilson, & Park, 2012; Jordan, Schwartz, & McGhie-Richmond, 2009; Wells, 2009).

Differentiated learning is one of the most effective instructional practices that meets the need of all students; however, it is not regularly used in inclusive classrooms (Jackson, Gaudet, McDaniel, & Brammer, 2009; Wells, 2009). Differentiated learning improves cognitive development in students with disabilities, student with diverse cultural needs, students from low socioeconomic settings, and student that are gifted or require a higher level of education (Hawkins, 2009). Nonetheless, differentiated learning is not used by most general education teachers regardless of their training, lack of training on differentiated learning, or the extensive research findings conducted on differentiated learning (Hawkins, 2009; Wells, 2009).

Similarly, qualitative research indicates that co-teaching is beneficial to students with disabilities and improves academic achievement in an inclusive setting (Scanlon & Baker, 2012). There are many effective co-teaching strategies. Station teaching is where students move to

different learning stations around the classroom and the co-teachers work with students at specific stations. Parallel teaching is when both teachers are teaching at the same time, but with specific groups of students. Alternative teaching is when some students are pulled out of the general education class for more intense instruction, and team teaching is where both teachers in the classroom work together on curriculum, instruction, behavior management, and take turns being the lead instructor (Scruggs, Mastropieri, & McDuffie, 2007). Yet, the most frequently used co-teaching model is the general education teacher as the primary or lead teacher, and the special education teacher assisting or just modify assignments. Many schools utilizing co-teaching are not meeting the true definition of co-teaching, in which the general education teacher and special education are considered equals, working collaboratively to designed curriculum that can be implemented using a variety of teaching strategies to meet the learning needs for all of the students. In a co-taught classroom, the special education teacher works with all the students, not just the students with disabilities, making it beneficial for all of the students (Scruggs, Mastropieri, & McDuffie, 2007). When this explicit model of co-teaching is followed with fidelity in general education classrooms, a paradigm shift in pedagogy occurs, thus meeting the diverse needs of the students (Scanlon & Baker, 2012). However, collaborative planning of teaching strategies, implementation of evidence-based practices, differentiated learning, and individualized learning for students with disabilities is not the norm in co-taught settings, leaving students with disabilities in an inclusive setting to be taught through large group instruction (Scruggs, Mastropieri, & McDuffie, 2007).

General education teachers cite the lack of prep time during the school day to research evidence-based practices for his or her student with a disability, and the overwhelming amount of information that needs to be skimmed through to find an evidence-based practice that is right

for a student with a disability in his or her class (Ermeling, Hiebert, & Gallimore, 2015; Harrison, Bunford, Evans, & Sarno Owens, 2013; Mazzotti, Rowe, & Test, 2013). To further complicate matters, the inconsistent use of language in the literature, when referring to evidence-based practices, makes it more difficult for a general education teacher to determine if an intervention is actually evidence-based (Harrison, Bunford, Evans, & Sarno Owens, 2013; Mazzotti, Rowe, & Test, 2013). In an effort to clarify what an evidence-based practice is and what it is not, the National Secondary Transition Technical Assistance Center clarified the terminology used in regards to evidence-based practices. The four terms defined by the National Secondary Transition Technical Assistance Center include evidence-based practices, research-based practices, promising practices, and unestablished practices. The differences among terms is the rigor of research, a record for improving outcomes, and a review process with quality indicators that support the research findings. Evidence-based practices have undergone rigorous research, with a proven record of improvement, and reviews that support the research findings. Research-based practices also underwent rigorous research designs, have a proven record for improvement, but does not incorporate reviewing the research findings. Promising practices use weak research designs, have shown some positive outcomes, and are based on research. Unestablished practices are not research based, have no data that establishes positive outcomes, and are based on professional judgement (Mazzotti, Rowe, & Test, 2013).

To narrow the research to practice gap, and to encourage general education teachers to use evidence-based special education practices to guide instruction, researchers have attempted to simplify the decision making process for general education teachers. The classroom teacher has to identify the student's needs, locate the best research available, and use his or her best professional judgement (Mazzotti, Rowe, & Test, 2013). In addition to simplifying the decision

making process of evidence-based practices to implement for students with disabilities, educational researchers have developed, promoted, and disseminated information on evidence-based practices for students with disabilities through publications, professional associations, conferences, webinars, email updates, and websites. Websites, such as the NSTTAC, the National Dropout Prevention Center for Students with Disabilities, the National Autism Center, the National Professional Development Center on Autism Spectrum Disorders, and the Best Evidence Encyclopedia are a few of the online resources available to assist teachers to implement evidence-based practices for students with disabilities by providing information about evidence-based practices, as well as resources to help teachers make decisions based on data (Mazzotti, Rowe, & Test, 2013).

Additional training and professional development on the use of best practices is needed for general education teachers. District wide or school wide training on the use of best practices is not an effective means to implement best practices for students with disabilities for many reasons. One reason is that if the training is not directly related to the content taught by a teacher, the teacher will not try to adapt it and implement it in the classrooms (Ermeling, Hiebert, & Gallimore, 2015; Kurth & Keegan, 2014). Nonetheless, when teachers can relate the professional development to what they teach or issues arising in the classroom, they are more willing to try to implement new best practices. Nevertheless, teachers need follow up and support to implement new best practices. Teachers, just like students, need to practice what they learned and receive feedback. Feedback can be from either an instructional coach, the in-service provider, a colleague, or an administrator. To sustain the use of best practices, teachers need resources beyond feedback. Resources include, but are not limited to hiring additional staff, such as instructional aides, purchasing new materials, new reference guides, new technology, and

providing teachers with the time to be trained to use new technology. In addition, general education teachers need more time dedicated to implementation of best practices. They need additional time to plan collaboratively with colleagues, and time to make quality adaptations to curriculum and instruction that meets the needs of students with disabilities (King-Sears & Bowman-Kruhm, 2011; Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015). Once teachers are confident about their ability to implement best practices, they need to monitor students' responses to the implementation of best practices. In addition, teachers need to assess the effectiveness of the newly implemented best practices on student achievement. Best practices that are the most effective should be continued, and less effective practices should be eliminated (Ermeling, Hiebert, & Gallimore, 2015).

Another point of contention is that an inclusive setting might not be the optimal setting for some students with disabilities to learn. Students with EBDs often exhibit externalizing behaviors that are disruptive to the class. Common externalizing behaviors that students exhibit are getting out of their seat, squirming around in their seat, talking to a classmate during independent work time, noncompliance, making noises, and aggression. Students with ADHD can also exhibit these behaviors, interrupting lessons being taught by the teacher, and cutting down on instructional time. Students are also distracted by these behaviors and spend less time on task. Students with externalizing behaviors and ADHD have the highest rate of being sent out of the classroom, and have the most office referrals. In addition, these students also have the highest rate of both in school, and out of school suspensions. This in turn, decreases the amount of time that a student with EBD spends in a general education classroom, and decreases the of the student's exposure to the general education curriculum (Harrison, Bunford, Evans, & Sarno Owens, 2013; Martin, 2014).

Student with disabilities require more intense, high quality instruction that is delivered through the use of direct instruction, teacher modeling, small groups, and more time to learn the content (McLeskey & Walsron, 2011). Students with ADHD cost an additional $5,000 per student to educate than their non-disabled peers (Harrison, Bunford, Evans, & Sarno Owens, 2013). It may be better to have students with disabilities spend the majority of their day in an inclusive setting, but receive the more intense instruction in a resources room with a special education teacher (Kosko & Wilkins, 2009, McLeskey & Walsron, 2011). However, due to the rising number of students that are assigned to a special education teacher's caseload, and the increasing number of special education students that need additional support in a resource room setting, special education teachers are not able to provide intense, high quality instruction to students in small groups (McLeskey & Walsron, 2011).

There are so many different reasons why general education teachers do not use the most effective evidence-based practices to improve academic and social outcomes for students with disabilities. In response to the multiple reasons teachers gave for not using evidence-based practices, researchers have attempted to bridge the gap by making it easier for classroom teachers to access the most up to date research on evidence-based practices. However, with such a wide range of reasons for not using evidence-based interventions, it is difficult to address the non-use of evidence-based interventions. To properly address the issue, more data needs to be collected to find out what the major reasons are for non-use of evidence-based practices. The reasons might be unique to a school, a district, a state, or a specific population. Therefore, before more solutions are introduced, at the local level teachers need to be asked why they are not using best practices and what it would take for them to begin using best practices.

Changing Role of Special Education Teachers

The role of a special education teacher has changed over the years. As a result, less time is spent in the classroom with the students, and more time is spent taking in the role of a case manager. In addition to teaching students with disabilities, special education teachers are responsible for the majority of the tasks needs for each of their students' annual IEP meetings. These tasks include assessment of the student prior to the IEP meeting, communicate with general education classroom teachers regarding the student's progression, updating progress towards the student's goals, communicating with parents, and communicating with the school psychologist (Kurth & Keegan, 2014). On the same note, the special education teacher spends a great deal of time working collaboratively with general education teachers to plan and adapt lessons that meet the needs of students with disabilities in general education classes (King-Sears & Bowman-Kruhm, 2011; Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015; Scanlon & Baker, 2012; Theoharis & Causton, 2014). Special education teachers also spend time working with students in a special education setting, such as a resource room. In a resource room, special education teachers and instructional aides provide additional support and practice for students with disabilities (Theoharis & Causton, 2014). Support is differentiated to meet the needs of each student. Most students with disabilities need additional time to learning new content. They are also taught different learning strategies to assist them in retaining and applying new knowledge (Kurth & Keegan, 2014; McLeskey & Walsron, 2011).

The role of a special education teacher has changed due to special education reforms and research indicating that the best place for a student with any type of disability to be educated is in a general education classroom. As the majority of students with disabilities are educated in general education classrooms alongside their non-disabled peers, special education teachers need

to work closely with general education teachers to support these students. Special education teachers work with general education teachers to make the curriculum accessible to students with disabilities. Special education teachers work collaboratively with general education teachers to plan instruction, as well as differentiate learning and assessment of the general education curriculum to meet the needs of students with disabilities. Thus, making best use of both teachers' assets to bridge the pedagogical paradigm shift of inclusion for all students.

Differences Among Teachers

One difference among general education teachers is the quality of adaptations made to curriculum and instruction to meet the needs of students with disabilities taught in an inclusive setting. The highest quality adaptations to curriculum and instruction are made by special education teachers. Adaptations include using text at the student's reading level, teaching the same concept in multiple ways, rewording test questions, assess the student's mastery by having the student verbally respond to test questions, and connecting the student's prior knowledge to new information. General education teachers with five or more years of experience make high quality adaptions, yet the adaptions made to the curriculum were simpler to make and less time consuming than the adaptions made by special education teachers. For example, general education teachers simplify the curriculum by shortening the number of spelling word that a student needs to know. Another way that general education teachers modify tests for students with disabilities is by removing two out of four responses on a multiple-choice test, and removing the writing portion of a test. Novice teachers made the lowest quality adaptations. Interestingly, novice teachers adapted the assessments for students with disabilities. Similarly, general education teachers from rural school districts made lower quality adaptations for students with disabilities, compared to urban teachers (Kurth & Keegan, 2014).

Another difference noted among general education teachers was the frequency in which curriculum and instruction was modified for students with disabilities (King-Sears & Bowman-Kruhm, 2011; Scanlon & Baker, 2012). Students with more severe disabilities had modifications to both the curriculum and instruction 60-80% of the time. Conversely, students with intellectual disabilities only had modifications to curriculum and instruction approximately 3% of the time (Kurth & Keegan, 2014). Students with disabilities are entitled to use their accommodation from their IEP, regardless of the severity of their disability. Classroom teachers are legally responsible for providing accommodations listed on a student's IEP. Teachers cannot pick and choose which students receive accommodations in their classroom. They have to provide accommodations to all students based on their IEP (King-Sears & Bowman-Kruhm, 2011; Kurth & Keegan, 2014). It is the job of a student's IEP team to determine what accommodations are needed. The IEP team also determines when, where, and how accommodations will be provided. Students with disabilities are provided with accommodation to enable them to be educated in the least restrictive environment (King-Sears & Bowman-Kruhm, 2011). Yet, only 7% of students with the most significant disabilities spent 80% or more of the school day in the least restrictive education environment, and had access to the general education grade level curriculum (Kleinert, et al., 2015). Disconcertingly, 88% of general education teachers could not explain how an adaption made to the curriculum or instruction aligned to the student's IEP. Analogously, 64% of teachers were unable to explain how an adaptation made for a student with a disability aligned to the state's learning standards (Kurth & Keegan, 2014).

Differences are also apparent in the accommodations that general education teachers allow students with disabilities to use (King-Sears & Bowman-Kruhm, 2011). Novice general education teachers are less inclined to provide accommodation that include the use of a

computer, visuals, or a calculator. Novice and experienced general education teachers are also less inclined to modify the length of assignments. On the contrary, special education teachers are more likely to modify the length of an assignments, and allow students to choose from a variety of ways to demonstrate mastery of a topic (Kurth & Keegan, 2014). The most frequently used accommodation by students with disabilities are extended time, text modified to reading levels, shortened assignments, manipulatives, diagrams, and visuals. Surprisingly, the adaptations that students with disabilities use the least are assisted technology, checklists, and large print (Kurth & Keegan, 2014).

Another difference among teachers is involvement in professional learning communities (PLC). PLCs are not a new concept in education, but it is now the norm to be part of a PLC, if not a few PLCs. The rise in PLCs is attributed to multiple research studies that indicated that when teachers collaborate about students, student achievement increased. The higher the quality of general instructional collaboration, the greater the increase in student achievement. Collaboration on student assessments was found to be the greatest predictor of student achievement for both reading and mathematics. However, PLCs can differ from school to school, and the teachers involved in a PLC do not always contribute equally. Auspiciously, even when only some teachers actively participate in a PLC, there is still improvement in student achievement (Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015).

Differences among teachers, whether it be their teaching style, philosophy, experiences, education, or background is what makes PLCs more successful. Each member of a PLC brings unique qualities to the group and they can learn from one another. This is why an IEP team is made up of a variety of members. There will always be differences among teachers, as well as students. What works for one class might not work with another class. However, when it comes

to providing accommodations and modifications to students with disabilities, the student is entitled to his or her accommodations and modifications. How teachers provide accommodations and modifications will vary, especially when novice teachers are compared to master teachers. Nevertheless, the quality of a student's accommodations or modifications do not need to be compromised. Having a special education teacher consult or collaborate with a general education teacher is one way to insure that accommodations and modifications are being provided to the student, and can improve the use and quality of evidence-based practices. Similarly, having a special education teacher be part of a PLC can improve the consistency and the quality or accommodations, modifications, and use of evidence-based practices to improve academic achievement and student outcomes. Yet, the most effective approach is to have special education teachers co-teach with general education teachers.

Research Methods

Qualitative research methods, when implemented in the field of education is to gain a better understanding of a topic, concept, perspective, or theory. The research takes place in the participant's natural setting, and may include observations, interviews, discussions, focus groups, case studies, recordings, pictures, field notes, journals, and interactions that are used to represent what was occurring and to make meaning out of the experiences. In a participant's natural setting, a researcher may discover a different or new perspective or perspectives, beliefs, or philosophies that he or she was not aware of prior to immersion into a participant's natural setting. Conducting research within a participant's natural setting provides the researcher the opportunity to engage with participants, play a passive role, or use a combination of both, to gather greater details and richer understandings from the interactions and shared experiences (Harwell, 2011; Patton, 2012; Schram, 2006; Shank, 2006).

Qualitative research is not generalizable due to the small number of participants in a qualitative research study. Although a qualitative research study can be replicated, the outcome is not reproducible because a researcher's interpretation of details elicited from participants is influenced by his or her own philosophies, unique background, life experiences, and bias. The same can be said of the participants in a qualitative research study, they bringing their unique backgrounds, experiences, philosophies, and biases that influence their actions and words. Henceforth, the findings are subjective, thus making it unlikely that replication of a qualitative research study could yield the same explanations, theories, perceptions, or hypothesis if conducted by different researchers, with different participants (Harwell, 2011; Patton, 2012; Schram, 2006; Shank, 2006).

On the other hand, quantitative research is objective, reproducible, and generalizable. Quantitative researchers are supposed to set their past experiences and bias aside to insure objectivity. Hypothesis are synthesized that correlate to research questions. To remain objective, researchers use instruments, such as surveys or tests to collect data. The population in which generalization can be made will not all take part in the study. Only a sampling that represents the overall population of the studied will participate in the research study. A heterogeneous random sampling is optimal to generalize findings. Statistical analysis of the data is used to accept or reject the null hypothesis. Inferences can be made based on the statistical analysis and the finding generalized to the population studied (Harwell, 2011; Patton, 2012; Schram, 2006; Shank, 2006).

Mixed-methods research is a way to use the positive attributes of both qualitative and quantitative research. Using multiple methods to collection data from diverse sources, such as from different grade levels, subjects, and geographical locations facilitates triangulation.

Triangulation improves the validity and reliability of a study, as well as controlling for researcher bias (Golafshani, 2003; Patton, 2012; Shank, 2006). Semi-structured interviews with a combination of both close ended and open ended questions allow the participants to elaborate on their responses, yet permits comparison of responses (Shank, 2006). Creating a checklist of the basic questions for each interview maintains structure, while still allowing for divergence. Elaboration and divergence can provide deeper, richer, and more valuable data to emerge. Sequential explanatory design uses qualitative findings to explain or support the quantitative findings (Creswell, 2009; Harwell, 2011).

Summary

Special education laws that arose over the past 40 years have made an enormous impact on how and where students with disabilities are educated. IDEA, ADA, and NCLB reforms require that students with disabilities be educated in the least restrictive environment, leading to the majority of students with disabilities being taught in an inclusive educational setting. Full implementation of the NCLB had low performing schools concerned that not all of their students may make adequate yearly progress or demonstrate proficiency on high stake test in mathematics and reading. This in turn is placing pressure on school districts to improve academic achievement for all students (107 Congress, 2002; Hulett, 2009).

The classroom teacher has the most influence over the success of his or her students academically and socially (Creemers & Kyriakides, 2008; Stronge, Ward, & Grant, 2011). Four characteristics of an effective teacher that improve academic achievement are classroom management skills that minimize interruptions during learning, being better organized, developing positive relationships with students, and having students take on more responsibility (Stronge, Ward, & Grant, 2011). In addition, most studies indicate that teachers that obtain

higher levels of education, such as a master's or a doctoral degree are more likely to use evidence-based interventions in the classroom and see improvement in student achievement. Similarly, participation in continuing education also improves students' academic achievement (Esposito, Lal, & Berlin, 2011). Henceforth, NCLB required schools to hire highly qualified teachers in general and special education to improve academic achievement (107 Congress, 2002; Hulett, 2009). Although, hiring highly qualified teachers is a requirement of NCLB legislature, funding to attract and retain these teachers is nonexistent, widening the achievement gap. The NCLB (2001) is now in the process of being replaced by the ESSA (2015), which is less prescriptive, and schools are no longer required to hire highly qualified teacher (U.S. Department of Education, 2016; West & Shepherd, 2016).

Strategies used to improve academic achievement include reducing class size. Smaller class size provides the classroom teacher with more opportunities to work with students individually. Nevertheless, this is a costly endeavor that not all schools can afford to implement. Reducing class size to 20 students has an effect size of only 0.31, which is considered to have a small effect on improving academic achievement and social skills (Att, Jamil, Ayaz, Shah, & Shah, 2011; Creemers & Kyriakides, 2008; Forness, 2001; Lloyd, Forness, & Kavale, 1998). However, when the class size is close to 10 students, the effect size increases drastically (Lloyd, Forness, & Kavale, 1998). Other strategies include collaboration with special education teachers, as well as co-teaching with a special education teacher to meet the learning needs of all of the students in the classroom (Isherwood, Barger-Anderson, Merhaunt, Badgett, & Katsafanas, 2011). Providing effective feedback to students can have a large effect on student learning. Differentiated learning is one of the most effective instructional practices to meet the learning needs of all students, but is not regularly used in inclusive classrooms (Wells, 2009).

Differentiated learning not only improves cognitive development in students with disabilities, it also improves cognition for the diverse cultural needs of students, students from low socioeconomic settings, and student that are gifted or require a higher level of education (Hawkins, 2009). If the teacher is knowledgeable about evidence-based interventions for students with disabilities and apply them in his or her classroom on a regular basis, then students with disabilities should demonstrate improvement in academic achievement (Creemers & Kyriakides, 2008).

The educational reforms for students with disabilities that have taken place over the past 40 years have enabled these students to gain access to the general education curriculum, and spend more than eighty percent of the school day in a general education classroom. These changes have had an enormous impact that has led to improved academic achievement, self-esteem, and social skills for students with disabilities. Research findings have verified what evidence-based interventions are most effective at improving academic achievement for students with disabilities. Yet, only 60% of students with disabilities report having a general education teacher that met their learning needs. To increase teacher effectiveness in general education classrooms and meet the learning needs of students with disabilities, the first step is to gather accurate data. Finding out what evidence-based interventions general education teachers are actually using in the classroom is one piece of the puzzle. Determining the frequency in which the most effective evidence-based interventions are being used by teachers is another piece of the puzzle. Finding out why some teachers do not use evidence-based interventions is the last piece of the puzzle. Answering these three questions illuminated how frequently the most effective evidence-based practices were being used in general education classrooms to improve academic achievement for students with disabilities, and the obstacles preventing teachers from using the

most effective evidence-based practices to narrow the achievement gaps. This in turn will drive changes that need to occur for all students with disabilities educated in general education classroom to be successful, as well as keeping school districts in compliance with current educational reforms.

Chapter 3: Research Method

In 2013-2014 school year 6.5 million children and youths ages 3-21 received special education services in the U.S. under the IDEA (2004), which required the use of evidence-based practices to improve academic achievement for students with disabilities (Institute of Educational Sciences, 2015). The majority of these students spent 80% or more of the school day educated in a general education classroom, yet only 60% of these students had their learning needs met (Crawford, 2011). The classroom teacher has the most influence over student achievement, leaving one to believe that general education teachers would use the most effective evidence-based practices more frequently than less effective practices, thus providing students with disabilities better opportunities to learn, and additional time to practice what they learned. However, there was no consistent data regarding the frequency and use of the most effective evidence-based practices in general education classrooms to improve academic achievement for students with disabilities.

The specific problem addressed in this study was that it was unknown how frequently general education teachers implemented the most highly effective evidence-based interventions in their classrooms' to improve academic achievement for students with high incidence disabilities. Nor was it known why general education teachers did not use these practices more frequently. It was known that evidence-based interventions implemented in general education classrooms to meet the learning needs of students with disabilities improved academic achievement (Copeland & Cosbey, 2008-2009; Cortiella, 2011; Huberman, Navo, & Parrish, 2012; Rathvon, 2008; Raymond, 2008; Yang & Rusli, 2012). It was therefore imperative to get teachers to use these best practices when working with students with disabilities.

To increase the use of the most effective evidence-based interventions in general classrooms for students with disabilities, practices that general education teachers currently use to improve academic achievement for students with high incident disabilities needed to be identified. Better data was needed on: (a) whether or not general education teachers used the most effective evidence-based interventions for students with high incident disabilities; (b) the frequency with which each of the most effective evidence-based interventions for high incident disabilities were implemented; (c) what reasons teachers gave for not using best practices. If this study was not done the lack of knowledge regarding the use of the most effective evidence-based interventions by general education teachers to improve academic achievement could lead to the misallocation of funds for professional development, staffing, and resources. Not identifying the reasons why general education teachers did not implement best practices would hinder the adoption of the best teaching practices, and the improvement in academic achievement for students with high incident disabilities would be less effectively targeted for change.

The purpose of this qualitative research study was to identify which evidence-based practices general education teachers used for children with disabilities, as well as the frequency with which general education teachers used evidence-based interventions with large effect size in the classroom to improve academic achievement for students with disabilities. A secondary purpose was to identify reasons why some teachers did not use evidence-based interventions. Videos of teachers from the Measures of Effective Teaching (MET) Longitudinal Study of Teaching Practices in America were assembled and scored with an original assessment instrument developed in part for this study. MET videotaped some 1,868 of students with disabilities (*N*= 1,868) over a two-year period, from the beginning of the 2009 to the end of the 2011 school year (Bill and Melinda Gates Foundation). A review of literature from previous

studies that sought to identify and tabulate frequency of use of best practices for teaching students with disabilities suggested that a minimal sample size of 30 teacher videos was necessary to represent the population in the MET longitudinal study. A pseudo-randomly selected group of 30 teachers whose teaching practices were videotaped were scored using metrics that assess the presence or absence of the six most effective evidence-based interventions, and the frequency in which each teacher used the six most effective evidence-based interventions. A sample of 18 general education teachers that had a student with a disability in his or her class were interviewed to discover why they did or did not use best practices.

Research Questions

Q1. How frequently was each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities?

Q2. What did teachers who did not use evidence-based practices cite as reasons for not adopting evidence-based practices?

Research Design

A qualitative approach was used to answer the research questions because the problem being researched requires both identification of practices currently being used, as well as in-depth exploration of reasons why some practices were not being used (Patton, 2012; Shank, 2006). Although qualitative, this study nevertheless has unusually wide generalizability due to the large number of participants, and because the participants are from six major cities in different regions of the United States, thus representing different cultural and regional differences. Whereas a quantitative approach could have been used to answer the first research

question, the findings would be limited to identifying the use and frequency of use of the most effective evidence-based interventions by general education teachers in public school districts (Shank, 2006). In addition, when considering the amount of time and money required to view a much greater number of video, score the videos, enter data from the scoring sheets, and analyzing the data, it would not be practical for a dissertation, during which, saturation may occur within the confines of a smaller qualitative research study (Schram, 2006). The qualitative research also elicited the participants' rationales, justifications, and personal experiences, providing a better understanding of the chosen behaviors (Moustakas, 1994; Patton, 2012). Conducting face to face interviews using technology such as Skype, Face Time, Google Hangouts, and in person, allowed participants to elucidate how the setting they work in and context influenced how they made sense of experiences and beliefs (Schram, 2006).

Hitherto, the NCLB legislature required all public school teachers to use evidence-based interventions, monitor student progress, and make data driven changes to instruction to ensure that all students made adequate yearly progress. However, there are no definitive lists of evidence-based interventions that general education teachers could follow, given that what works for one student with a disability might not work with another student. Henceforth, teachers are expected to use their professional judgement to implement appropriate evidence-based interventions that improve student achievement. Teachers are and have always been responsible for their own professional development and staying abreast of what is going on in their field. Participants in the MET longitudinal study and this study were not told that they should be using specific evidence-based interventions in their classrooms. Yet, one would think that teachers would start by using interventions that had a known effect of .80 or higher, providing the students with the greatest chance of improving academically.

Using recorded videos of general education teacher practices reduced changes in students' behavior due to an observer in the classroom. Notably, the teachers that participated in the MET longitudinal study chose when to record a lesson; henceforth the videos may not reflect the participants' usual teaching methods and techniques. The data gleaned from coding the videotaped lessons answered the first research question, which was more concrete, but there was not a way to know why a participant chose a particular approach over another. The qualitative interviews, even with the smaller number of participants enhanced the data from the viewed MET videos by providing a deeper and richer understanding of the daily challenges the participants faced, and addressed more abstract concepts (Golafshani, 2003; Moustakas, 1994; Patton, 2012; Schram, 2006; Shank, 2006). Gaining insight as to how general classroom teachers had adapted their teaching strategies to meet the needs of students with disabilities in their classroom provided data that spoke to whether changes were needed to improve academic achievement for students with disabilities in general education classrooms and whether additional resources were needed by general education teachers to meet the learning needs of students with disabilities in their classrooms.

Particularly, in-depth interviews with general education teachers that had a student with a disability in his or her class provided insight as to why evidence-based practices were or were not used. The protected identity and anonymity of the participants in the MET quantitative research study and this qualitative research study encouraged the participants to avoid only recording his or her best lessons, and respond honestly during the interviews (Patton, 2012; Schram, 2006). In addition, observations of the MET videos exposed more issues that were addressed by the qualitative interviews of general education teachers that had a student with disabilities in his or her class (Cozby & Bates, 2012).

Population

The population to answer the first research question was a pseudo-randomly selected group of general education teachers' videotaped lessons from the Measures of Effective Teaching (MET) Longitudinal study database, chosen for use in this study. The MET Longitudinal study database included 11,500 videos from some 3,000 teachers across six major cities. Participant characteristics include gender, ethnic background, years of experience teaching, years of experience in the school district, and education. Approximately 76% of the participants were women, 56% white, 30% African American, 5.6% Hispanic, and 2.1 % other. The mean for years of experience teaching was 9.77, and experience in the current school district was 7.14. Teachers with a Master's Degree plus additional credits made up 26% of the population (Inter-University Consortium for Political and Social Research, n.d.). Only videos from general education teachers that had a student with a disability in his or her class were used in this research study. In addition, general education teachers from across the country that had a student with a disability in his or her class were interviewed.

The population to answer the second research question were the same general education teachers from across the country that had a student with a disability in his or her class, who were interviewed to answer the first research question.

Sample

To answer the first research question, how frequently were each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities, peer-reviewed studies on the same topic, derived from the last 10 years and up to the present were sought to reliably identify the use of best teaching practices in the American general education classroom, and attempted tabulations

of the frequency of use of the established highly effect size best practices (Castro-Villarreal, Rodriguez, & Moore, 2014; King-Sears & Bowman-Kruhm, 2011). In addition, a review of the literature from experts in the field of qualitative research on the use of observations was conducted to gain insight as to an acceptable sample size for this research study. There were conflicting views among the experts in qualitative research, with sample sizes ranging from 10 or 12, to over 200 participants. The sample size for purposeful sampling of a population varied. The sample size for the observational portion of this research study purposely included participants from each of the six cities that participated in the MET study (Patton, 2015). The sampling from each city needed to be large enough to represent the clinical practices of the teacher population, and reach saturation of clinical practices (Grossman, et al., 2009). Yet, the sample size also needed to take into consideration the reason for the research, the cost, time, and resources available to the researcher. In a review of current qualitative phenomenology research studies in education, the number of participants observed ranged from 8-31 participants, with a mean of 15 participants (m = 15) (Guetterman, 2015). Noteworthy, Mason (2010) found that PhD candidates were using considerably larger sample sizes then recommended by experts in the field of qualitative research, make it impractical, without any significate gains from the larger sample. Mason posited that qualitative phenomenology sample size for a PhD dissertation needed to be small enough to make it practical, yet large enough to reach saturation, thus recommending the need for 10-40 participants (Mason, 2010). In qualitative research, the sample size is just an estimate or guide. This is due in part to the fact that the sample size is based on the type of qualitative research being conducted, with the ultimate goal of gathering in-depth, rich, detailed information until saturation is reached (Cozby & Bates, 2012; Golafshani, 2003; Halpin & Kieffer, 2015; Harwell, 2011; Patton, 2012; Shank, 2006). Henceforth,

selecting only 10 randomized teacher video from each of the six states that participated in the study, increased the risk of missing important data from the heterogeneous population. However, selecting 20 randomized teacher videos from each of the six states that participated in the MET longitudinal study would provide a strong effect size, increasing the likelihood that important data will not be overlooked from the heterogeneous participants (Patton, 2012; Schram, 2006; Shank, 2006).

The District/School File from the MET Longitudinal study were used to sort all the teachers by school districts. Then each school district's files for general education teachers were selected. Next, individual teacher files that indicate in year one and year two that he or she had a student in class with a disability were selected. Only teachers that recorded a minimum of two videotaped lessons for 2009-2010 and/or the 2010-2011 school years were selected. To obtain a sample size of 30, five teachers from each state were chosen at random from the teacher files that remained, making the findings from the study generalizable to public school teachers across the country. In addition, a sample of 30 general education teachers that had a student with a disability in his or her class, and taught in a public school in the U.S. were recruited to participate in structured interviews.

To answer the second research question, what did teachers who did not use evidence-based practices cite as reasons for not adopting evidence-based practices, the same sample of 30 general education teachers recruited to participate in structured interviews to answer research question number 1, were interviewed to answer research question number 2. Thus, allowing for richer data collection then could be gain from viewing videotaped lessons, as to these teachers' experiences, feelings, and explanations for using or not using the most effective evidence-based interventions in their classroom to improve academic achievement for students with disabilities

(Moustakas, 1994; Moustakas, 1990; Patton, 2012; Schram, 2006; Shank, 2006). In-depth interviews were conducted using Skype, Face Time, Google Hangouts, and in person with a small sampling of 30 general education teachers that had a student with a disability in his or her class. The number of 30 participants was arrived at from examining similar qualitative studies seeking to establish reasons why best practices were not being used for students with disabilities. The examination of similar studies found a range of samples sizes from a minimum of eight, and a maximum of 22 teacher participants (King Thorius, Maxcy, Macey, & Cox, 2014; Leko, Kulkarni, Lin, & Smith, 2015; Murphy & Marshall, 2015; Ruppar, Roberts, & Olson, 2015; Scanlon & Baker, 2012). Similarly, current research in qualitative research in education noted that the sample size needed for qualitative interviews ranged from 25-30 participants, with a mean of 22 (m = 22).

Once saturation was reached and no new information, data, or experiences were being elicited from the participants, then the interviews were discontinued. Most qualitative interviews in education take approximately 30 to 60 minutes (Guetterman**,** 2015). Conducting face to face interviews using Skype, Face Time, Google Hangouts or in person encouraged participants to respond to all of the interview questions, allowing the participant to tell his or her story about past experiences using specific interventions, and express feelings about using the most effective evidence-based interventions. The information gathered during the face to face interviews led to additional questions being posed, the ability to clarify questions for the participants, and

provided the opportunity for the participants to be asked to provide more details or examples (Moustakas, 1994; Moustakas, 1990; Patton, 2012; Schram, 2006; Shank, 2006).

Materials/Instrumentation

To address research questions one, an in-depth review of the current literature, tests and measures, and research on effective evidence-based practices known to improve academic achievement for students with high incidence disabilities was performed to develop a checklist to score classroom teacher use of the most effective evidence-based interventions that improve academic achievement for students with disabilities (Berekeley, Mastropieri, & Scruggs, 2011; Burns & Ysseldyke, 2009; Ermeling, Hiebert, & Gallimore, 2015; Forness, 2001; Gable, Tonelson, Sheth, Wilson, & Park, 2012; Hattie, 2009; Kim, Vaughn, Wanzek, & Wei, 2004; King-Sears & Bowman-Kruhm, 2011; Lloyd, Forness, & Kavale, 1998; Regan & Michaud, 2011; Scruggs T. E., Mastropieri, Berkeley, & Graetz, 2010; West, McCollow, Kidwell, Umbarger, & Cote, 2013; Wolgemuth, Cobb, & Alwell, 2008; Yang & Rusli, 2012). The checklist assessed the presence or absence of teaching practices that fulfilled the evidence-based criteria as highly effective evidence-based interventions known to increase academic achievement for students with disabilities. Mean effect sizes are categorized as being small, medium, or large. A mean effect size of .80 or greater is considered to have a large positive effect on outcomes (Burns & Ysseldyke, 2009; Forness, 2001). Put into perspective, an effect size of 1.0 is the equivalent of one standard deviation in achievement in education or, "…advancing children's achievement by two to three years…" (Hattie, 2009, p. 7). Only interventions that have a mean effect size of .80 or larger were used on the scoring checklist.

A review of the literature for evidence-based interventions that improve academic achievement for students with high incident disabilities with a mean effect size of .80 or greater

uncovered twenty-five research studies. Only six evidence-based interventions with an effect size of .80 or larger were located within the past five years. The use of inquiry based instruction had a mean effect size of .84, peer tutoring had a mean effect size of .86, graphic organizers had a mean effect size of .93, mnemonics had a mean effect size of 1.26, reading comprehension strategies had a mean effect size of 1.44, and explicit instruction had a mean effect size of 1.68. One video was scored for each teacher. To validate the ratings, a volunteer master's level educator rated 20% of the videos. Inter rater reliability was measured after 20% of the videos have been scored by both the volunteer master's level educator and the researcher.

The checklist contained a spreadsheet that included the six most effective evidence-based interventions, a yes or no column, a basic column, a proficient column, and a distinguished column. Each video was viewed once and scored while viewing the video (see appendix B). The scorer indicated that the participant used an intervention by placing a "Y" in the yes or no column next to intervention. If an intervention was used, then the scorer recorded how skillful the participant was implementing the intervention by checking the basic, proficient, or distinguished column. If an intervention was not used, then an "N" was placed in the yes or no column, leaving the basic, proficient, and distinguished columns blank. The frequency in which each intervention was used was measured by tallying the "Y" in the yes or no column on the checklist for all 30 participants.

The frequency of use for each intervention was calculated by adding together the results from the used column on the checklist (see appendix B). The highest overall frequency for using these interventions per teacher was six, in which the teacher would have used all six evidence-based practices in the video viewed. Then all of the scores from the videos of the 30 teachers were compiled to determine the overall frequency of use of each evidence-based intervention by

all of the participants in the study. This scoring checklist incorporated the tallying of the frequency for which each best practice was implemented during the videotaped teacher observation. The instrument quantified the extent to which each best practice was actually used in general education classrooms. A team of experts in the field of special education reviewed the checklist for fidelity. Feedback from the expert reviewers was used to make changes to the scoring instrument.

To address research question two, an in-depth review of the current literature and research was conducted to illicit reasons general education teachers did not use the most effective evidence-based interventions in the classroom to improve academic achievement for students with disabilities. The six most cited reasons for not using evidence-based interventions in general education classrooms were teaching to the test, being required to follow a scripted curriculum, need to cover the curriculum, students need to do well on high stakes tests, lack of knowledge about evidence-based interventions for students with disabilities, and lack of resources to implement best practices (Ermeling, Hiebert, & Gallimore, 2015; Gable, Tonelson, Sheth, Wilson, & Park, 2012; Grima-Farrell, Bain, & McDonagh, 2011; Harrison, Bunford, Evans, & Sarno Owens, 2013; Hawkins, 2009; Kurth & Keegan, 2014; Mazzotti, Rowe, & Test, 2013; McLeskey & Walsron, 2011; Scalon & Baker, 2012; Wells, 2009). The same 30 general education teachers that were interviewed to answer the first research question, were also interviewed to elicit reasons for not implementing the most effective evidence-based practices that improve academic achievement for students with disabilities. Recruitment materials were posted on the Kappa Delta Phi's Global Communities open forum, the Association for Supervision and Curriculum Development (ASCD) Edge professional networking site, the Learning Disabilities Association of America's Facebook page, and sent directly to general

education teachers whose school email account was public knowledge. In addition, recruitment materials were placed on the researcher's Facebook page, Linked-In page, and Twitter account. General education teachers that responded to the recruitment materials were contacted directly and ask for their participation. Participants were assured that their participation would be kept confidential and responses would be anonymous. The interview began by asking the classroom teacher about his or her use of evidence-based interventions. The teacher was asked about the evidence-based interventions that he or she used most frequently, and to provide an example of how it was used. If the teacher did not indicate the use of the six most effective evidence-based interventions, he or she was asked if the six most effective evidence-based interventions that improve academic achievement and social skills for students with disabilities were used. If he or she used any of the interventions, he or she was asked how frequently each intervention was used. Next, the teacher was asked to explain why an effective evidence-based intervention was not used. If the participant did not mention the six most common reasons cited for not using evidence-based practices in current literature and research, then the participant was asked if any of the six most common reasons cited for not using evidence-based practices contributed to his or her non-use of evidence-based interventions. If the participant used any of the six most effective evidence-based interventions, the participant was asked to indicate the frequency in which he or she used the interventions through the use of a Likert scale (Patton, 2012; Schram, 2006; Shank, 2006). The Likert scale used the frequencies daily, 4 times a week, 3 times a week, 2 times a week, or 1 time a week. Then the participant was asked about the six most common reasons cited in current literature and research for not using the most effective evidence-based interventions (Ermeling, Hiebert, & Gallimore, 2015; Gable, Tonelson, Sheth, Wilson, & Park, 2012; Grima-Farrell, Bain, & McDonagh, 2011; Harrison, Bunford, Evans, & Sarno Owens,

2013; Hawkins, 2009; Kurth & Keegan, 2014; Mazzotti, Rowe, & Test, 2013; McLeskey & Walsron, 2011; Scalon & Baker, 2012; Wells, 2009). Each of the participants were asked to respond either yes or no to each of the six most common reasons for not using the most effective evidence-based interventions. The interviewer asked the participants to add any additional reasons or justifications for not using best practices. The Herron Interview Recording Document for Use or Non-Use of Best Practices (see appendix D) was used to record the participants' responses. Once the research study was approved by the IRB committee, the interview questions were piloted by colleagues in Athens School District and were asked to provide feedback. Results of the pilot study and feedback was used to determine internal consistency and reliability of the interview questions. Changes to the interview questions were based on feedback received from colleagues to increase consistency and reliability. To encourage participants to agree to be interviewed, as well as respond honestly to the questions, the identity of the participants was protected. The participant's name and school district was not included in the data collected. A number was assigned to the teacher (Patton, 2012; Schram, 2006; Shank, 2006).

Finding out if there were other reasons why teachers did not use best practices, other than what is currently cited in the literature, uncovered new obstacles that teachers encountered when trying to implementation best practices. Examining the justifications that teachers stated for not using best practices provided insight into whether the obstacles or barriers that teachers cited were real or perceived. The data obtained from the interviews can be used to remove obstacles or barriers that these teachers were confronting. The data obtained could result in changes that are more precise. The obstacles that teachers are facing may be something that they could overcome on their own, or assistance could be needed at the building level, district level, or state

level. Other obstacles were unique to just one school or one district. In these cases, changes may need to begin at the district level.

Themes were identified in interview transcripts via researcher coding of transcripts, as well as using NVivo software to assist in the identification of themes and interactions among themes. Themes were then rank ordered to display frequency mentioned by interviewees. In this way most frequently cited obstacles to adoption of best practices were identified.

Data Collection and Analysis

To answer the first research question, how frequently were each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities, access to the videos of teachers from the Measures of Effective Teaching (MET) Longitudinal Study of Teaching Practices in America was obtained. Once IRB approval was obtained, a confidential data use agreement with the University of Michigan, which houses all of the data from the MET longitudinal study was completed, and approved by Northcentral University and the University of Michigan (see appendix E). When access was approved, the required fee of $350 for the researcher to access the database at the University of Michigan for one year was paid (ICPSR, n.d.). The District/School File was used to sort all the teachers by school district. Then each school district's files for general education teachers' files were selected. Individual teacher file's that indicated in year one and year two that he or she had a student in class with a disability were selected. Only teachers that recorded a minimum of two videotaped lessons for 2009-2010 and/or the 2010-2011 school years' files remained. Five teachers from each city was chosen at random from the teacher files that remained.

A pseudo-randomly selected group of 30 teachers whose teaching practices were videotaped were scored using a checklist that assessed the presence or absence of the six most effective evidence-based interventions, and the frequency in which each teacher used the six most effective evidence-based interventions. The frequency for each of the six evidence-based practices was computed. The six evidence-based practices were placed in rank ordered. A histogram was used to compare the frequencies of the six evidence-based practices (Cozby & Bates, 2012; Norusis, 2010).

In addition, 30 general education teachers that had a student with a disability in his or her class, and taught in a public school in the U.S. were recruited to participate in structured interviews to answer the first research question. Professional associations were contacted to assist in dissemination of information to potential participants. The Learning Disabilities Association of America, the Association for Supervision and Curriculum Development, and Kappa Delta Pi were contacted and allowed recruitment materials to be posted to their websites. Once IRB approval was obtained, recruitment material was placed on the professional associations websites. Teachers interested in the research study and who met the study requirements were asked to contact the researcher directly by email or phone. When the researcher was contacted by potential participants, the informed consent form was emailed to the participant, reviewed, signed, and returned to the researcher. Informed consent was obtained in writing prior to the interview. The researcher then signed the informed consent, emailed it back to the participant, and set up a date and time for the interview. The interviews were confidential and the teachers' names remained anonymous. The teacher was asked if he or she had access to technology such as Skype, Face Time, or Google Hangouts to use for the interview and to ensure anonymity. If the participant did not have access to technology for a face to face interview, then

the participant was asked if they would participate in a phone interview or in person. The teachers were only identified by a number.

Structured interviews were used to elicit reasons for not implementing the most effective evidence-based interventions that improve academic achievement for students with disabilities. The Herron Interview Recording Document for the Use or Non-Use of Best Practices (see appendix C) was used to record responses. The interviews were recorded using technology that transcribed the interview word for word. A combination of open-ended and close-ended questions were used when interviewing the participants. Potential participants were assured that their participation was confidential and responses were anonymous. The interview began by asking the classroom teacher about his or her use of evidence-based interventions. The participant was asked about the evidence-based interventions that he or she used most frequently and to provide an example of how it is used. The participant's response to the frequency of use of evidence-based practices was recorded using a Likert scale (Patton, 2012; Schram, 2006; Shank, 2006). The Likert scale used the frequencies daily, 4 times a week, 3 times a week, 2 times a week, or 1 time a week. If the participant did not indicate the use of the six most effective evidence-based interventions, he or she was asked if the six most effective evidence-based interventions that improve academic achievement and social skills for students with disabilities were used. If he or she used any of the interventions, he or she was asked how frequently they used each intervention.

To answer the second question, what do teachers who did not use the most effective evidence-based interventions to improve academic achievement for students with disabilities cite as reasons for not adopting best practices, the same 30 teacher participants that were interviewed to answer research question number one, were used to answer research question number two.

After responding to the questions about the use of evidence-based practices that improve academic achievement for students with disabilities, participants were asked to explain why an effective evidence-based intervention was not used. If the participant did not mention the six most common reasons cited for not using evidence-based practices in current literature and research, then the participant was asked if any of the six most common reasons cited for not using evidence-based practices contributed to his or her non-use of evidence-based interventions. In addition, participants were asked about known reasons for not using best practices, such as teaching to the test, being required to follow scripted curriculum, covering the curriculum, high stakes tests, and/or because of the lack of knowledge (Patton, 2012; Schram, 2006; Shank, 2006). The Herron Interview Recording Document for the Use or Non-Use of Best Practices (see appendix C) was used to record responses. The responses to the six close-ended questions regarding the most common reasons for not implementing the most effective evidence-based interventions were tallied. Using the mean for each question, the responses were placed in rank ordered series.

While interviewing the participants themes and patterns emerged. Noting themes early in the study provided insight into difficulties that were not evident in the initial research. Themes were identified in interview transcripts via researcher coding of transcripts, as well as by using NVivo to assist in the identification of themes and interactions among themes. Themes were rank ordered to display frequency of mention by interviewees. In this way, most frequently cited obstacles to adoption of the most effective evidence-based interventions were identified. The information gleaned from the interviews provided opportunities for further investigation into obstacles that teachers faced when trying to implement the most effective evidence-based interventions in their classrooms (Patton, 2012). Furthermore, noting if other participants cited

similar difficulties implementing the most effective evidence-based interventions assisted in recognizing themes.

An inductive analytical approach was used to organize data collection and review the interviews, thus looking for patterns and trends. Categories were created from the similarities and differences to the open-ended questions (Creswell, 2009). The responses to the open-ended interview questions were compared to each other. During organization of the data, a comparison table was used to assist in identify themes. A matrix was then used to organize and code the data by themes (Creswell, 2009; Patton, 2012). Themes that emerged from open-ended questions were cross-referenced and placed into categories for analysis (Patton, 2012). A computer assisted recording instrument was utilized to transcribe notes and verbal conversations verbatim from the interviews. Use of this technology saved time transcribing notes and it stored the raw data for further review if needed. Once all of the data was coded and entered into the analytical software, the data collected was analyzed to answer the second research question. Incomplete and inaccurate data was discarded.

Triangulation of observational data, interviews, and the use of populations from across the country, led to more valid and reliable findings. Comparing the results of the observed general education teachers' use of the most effective evidence-based interventions, to the results from teacher interviews about their use of evidence-based interventions was beneficial. In addition, comparing the results of the observed lessons to actual student outcomes on standardized achievement tests, could provide additional support for the use of the most effective evidence-based interventions, and address issues that prevent teachers from using the most effective evidence-based interventions.

Assumptions

Assumptions made about the population was that not all teachers used evidence-based interventions in general education classrooms to improve academic achievement for student with disabilities. This assumption is supported by the literature review. A second assumption was that knowledge of effective evidence-based interventions that improve academic achievement, doesn't necessarily indicate that a teacher applied their knowledge in the classroom. The qualitative interviews in this study explored this question in-depth. The last assumption was that all teachers were not knowledgeable of the most effective evidence-based interventions to improve academic achievement for students with disabilities. Steps taken to compensate for the assumption that not all teachers used evidence-based interventions in improving academic achievement for students with disabilities were viewing teacher recorded videotaped lessons from the MET longitudinal study instead of directly observing teachers in the classroom. Scoring only included the presence or absence of the six most effective evidence-based intervention in the video viewed, as well as how well the intervention was implemented. In addition, 20% of the videos were scored by the researcher and a graduate level special education colleague individually, and then compared for consistency. Furthermore, participants were pseudo randomly chosen to obtain equal number of participants from six different large cities across the country, from a variety of grade levels, and subjects taught.

When interviewing general education teachers that did not use the most effective evidence-based interventions, steps taken to manage the assumption that just because a teacher is knowledgeable of effective evidence-based interventions that improve academic achievement, doesn't mean that he or she was going to apply their knowledge in the classroom were to ask close ended questions that required a yes or no response whether or not the teacher used the six

most effective evidence-based interventions. This is also assuming that the teachers interviewed responded honesty to the questions asked during the interview. However, asking the participants open-ended questions, such as what evidence-based interventions do you currently use in the classroom to improve academic achievement for student with disabilities, and why the participant did not use the most effective evidence-based interventions, to hear each of the teachers' perspectives and points of view, which provided the participants with the opportunity to elaborate on their responses, thus leading to a richer and more in-depth discussion. Participants were made to feel comfortable responding to the interview questions and not feel as if he or she was being judged based on responses. Interview questions that made participants take on a defensive stance were avoided (Schram, 2006).

Limitations

The limitations to the study were that the participants in the interview portion of the study were not from the MET study. The participants' identity in the MET study were confidential, making it impossible and unethical to locate the participants. This was a threat to reliability and validity. To mitigate the inconsistency in participants between the teachers in the MET videos and the teachers interviewed, general education public school teachers were targeted as participants for the qualitative interviews. In addition, the participants in the MET longitudinal study were all teachers in public school districts, make the findings only generalizable to public school districts.

Another threat to reliability and validity was using a self-developed checklist and interview questions with no proven reliability or validity. To validate the ratings, a volunteer master's level educator rated 20% of the videos. Inter rater reliability was measured after 20% of the videos had been scored by both the volunteer master's level educator and the researcher.

The interview questions were piloted by colleagues who were asked to provide feedback. Results of the pilot study and feedback were used to determine internal consistency and reliability of the interview questions.

Delimitations

The study scope was narrowed to only include observation and scoring of general education teacher lessons from videos recorded for the MET longitudinal study. The videotaped lessons from the MET longitudinal study consisted of 30 minute segments of a general education teacher teaching. Only the first 15 minutes of the lesson were viewed and scored. The participants in the MET study were from public school districts in six major cities. Thus, the findings were only generalizable to public school districts across the country. The collection of data from the videos only attended to the presence of the six most effective evidence-based interventions that improve academic achievement for students with disabilities taught in a general education classroom, and how well the practices were implemented by the teacher.

In addition, direct in person interviews consisted of only 30 general education teachers that had a student with a disability in his or her class. The teachers that participated in the MET study were not able to be contacted to participate in face to face interviews. A practical approach to gain access to potential participants for the in-depth interviews was to use technology, such as Skype, Face Time, and Google Hangouts to conduct face to face interviews. The findings from the qualitative research will not be generalizable to the entire teacher population because of the limited number of participants.

Ethical Assurances

The research was conducted using a de-identified data set of videotaped lessons from the Measure of Effective Teaching (MET) Longitudinal Database maintained at the University of

Michigan Inter-University Consortium for Political and Social Research (ICPSR) (Halpin & Kieffer, 2015; ICPSR, n.d.; Polikoff & Porter, 2014). IRB approval was obtained to protect the identity of participants in the MET longitudinal study, which includes classroom teachers and students. The risks were minimal for the participants from the existing dataset because the ICPSR de-identified the participants and a strict Data Usage Agreement (DAU) had been completed and approved by the ICPSR. The MET longitudinal data was housed in a Virtual Data Enclave (VDE) that prohibited the researcher from removing or copying any of the files. Working with the quantitative data files was limited to within the VDE. In addition, the DAU prohibited the re-identification of participants or school districts in any publications.

To insure confidentiality, when viewing videos from the VDE or working with the qualitative dataset, only approved research staff were in the room, and the computer screen could not be visible from windows or doors. When scoring the videos with the checklist, the video number from the VDE was the only identifier on the form that would link the scoring sheet to the video. The scoring sheet did not collect any of the participants' person identifiers. When the VDE was not in use, the researcher logged out of the website. The computer was password protected, and completed checklist were stored in a secure location.

Assuring anonymity and confidentiality to participants in the interviews was vital due to the nature of the interviews. The participants were teachers and if they were not using the most effective evidence-based interventions, it would be detrimental to their salary, job placement, or possibly cause the loss of a job. Prior to recruiting participants, IRB approval was obtained. General education teachers that had a student with a disability in their class were asked to volunteer to be interviewed. There was full disclosure of the purpose of the research, how the information from the interviews was used, and what procedures were followed to protect the

participant's identity. The participant was also made aware that he or she could withdraw from the study at any time. The participants signed an informed consent that was locked up and kept separate from the completed Herron Interview Recording Document for Use and Non-Use of Best Practices. The Herron Interview Recording Document for Use and Non-Use of Best Practices does not contain any participant identifiers (see appendix C). Voice recordings from the interviews and transcripts were kept in a secure location. Access to the Herron Interview Recording Document for Use and Non-Use of Best Practices, voice recordings from the interviews, and the transcripts were limited to the researcher, the dissertation chair, and the dissertation committee. The findings from the qualitative research used numbers to protect the identity of the participants in publications.

Summary

Over the past 40 years, special education reforms have provided students with disabilities access to the general education curriculum, as well as provided these students with the right to an appropriate education in the least restrictive setting. Today, the majority of students with disabilities are educated in general education classrooms. Thus, general education teachers need to meet the diverse needs of these students using best teaching practices from evidence-based interventions. This study provided data on the use of interventions that have an effect size of .80 or larger to meet the learning needs of student with disabilities and how frequently evidence-based interventions were used in general education classrooms to meet the learning needs for students with disabilities. The study also provided data as to obstacles general education teachers cited to adoption of best practices. The results of the study added to the limited literature on general education teacher use of highly effective evidence-based interventions to improve academic achievement for students with disabilities. Determining if general education

teachers were using the most effective evidence-based interventions in public schools provided data that can be used by the educational community to make decisions as to the best use of limited resources. Ascertaining unknown obstacles preventing general education teachers in public schools from reliably implementing best practices, as well as determining the extent in which these teachers faced obstacles already identified in the literature provided the educational community with data that can be used to foster changes in classrooms. The educational community is able to make informed decisions based on data from the study, leading to better use of funds and resources to remove obstacles that prevent teachers from reliably implementing the most effective evidence-based practices to promote academic achievement for students with disabilities.

Chapter 4: Findings

The purpose of the research study was to determine if general education teachers used highly effective evidence-based practices for students with disabilities in their class that improve academic achievement and social skills. Moreover, if they were using these best practices, how frequently were they implemented. Furthermore, the research study explored why some general education teachers used less effective interventions in the classroom, as well as why some teachers did not use these best practices. The importance of this study was to illuminate the highly effective evidence-based practices that general education teachers are using to improve academic achievement for students with a disability in their class and how frequently they are implementing these practices. Of equal importance, was uncovering obstacles, barriers, and issues these teachers encountered that prevented, limited, or inhibited their ability to use best practices. The data gleaned from the research study will be used to further the use of the most effective evidence-based practices by general education teachers for students with a disability in their class, and to find a way to deal with issues that prevent the use of these practices. Voicing these issues will facilitate discussions to remove obstacles and barriers that teachers are facing and support the use of the most effective evidence-based practices in general education classrooms.

Archival secondary data was used from the Measure of Teacher Effective Teaching longitudinal study (2009-2011) to determine if highly effective evidence-based practices were used by general education teachers that had students with disabilities in their classroom, and the frequency in which these practices were used (Bill and Melinda Gates Foundation, 2014). The Measure of Effective Teaching (MET) longitudinal study encompassed some 3000 participants from six major cities across the country. A sampling of (n = 30) general education teachers'

videos were selected for part of this research study to determine the frequency in which six highly effective evidence-based interventions that improve academic achievement for students with disabilities were used.

In addition, (n = 18) general education teachers that had a student with a disability in their class were recruited from across the country and participated in interviews via Skype, Google Hang Outs, and in person, to uncover what evidence-based practices they were using in the classroom, if they were implementing highly effective interventions for students with disabilities, and the frequency in which these interventions were used. Furthermore, these participants were asked to identify barriers or issues that have prevented or limited their ability to use best practices, or increase the frequency of use of highly effective evidence-based practices to improve academic achievement for students with disabilities. More to the point, these participants served a vital role in the research study, due to the fact that the teachers from the MET longitudinal study were not able to be interviewed, thus the input from the teachers interviewed was needed to obtain more up to date data, and answer the second research question of why some general education teachers used less effective interventions in the classroom, as well as why some teachers did not use these best practices.

Results

Q1. How frequently was each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities?

To answer the first research question, how frequently was each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities, videotaped teachers' lessons from the

Measure of Effective Teaching (MET) longitudinal study were viewed. Over 3000 teachers from school districts in six major cities took part in the MET longitudinal study, and some 1,868 teachers of students with disabilities (*N*= 1,868) videotaped themselves and their students while conducting a class lesson. All teachers that participated in the MET longitudinal study were assured that their identity would be protected, and that all data associated with each teacher would remain confidential. The Measures of Effective Teaching Longitudinal Database is stored at the Inter-University Consortium for Political and Social Research (ICPSR), with limited access to the database to protect the identities of the participants. Furthermore, the participants in the MET longitudinal study were not allowed to be contacted in any way. The candidate was granted access to the MET videos for this research project. Thirty (n = 30) teacher videos were pseudo-randomly chosen for the sample.

First, only teachers that had a student with a disability in their class were selected. Next, these teachers were sorted by city. Finally, five teachers were randomly chosen from each of the six cities that participated in the MET longitudinal study. Once the sample was selected (n = 30), teacher videos chosen were viewed and scored for use of evidence-based practices. The use of highly effective evidence-based practice for students with disabilities was scored via the Evidence-Based Practice Checklist (see Appendices A). The evidence-based best teaching practices for the checklist was derived from the following publications on best practices in teaching children with disabilities (see Figure 1):

Figure 1 Publications on Best Practices in Teaching Children with Disabilities

Berekeley, S., Mastropieri, M. A., & Scruggs, T. E. (2011). Reading comprehension strategy instruction and attribution retraining for secondary students with learning and other mild disabilities. *Journal of Learning Disabilities, 44*(1), 18-32.

Burns, M., & Ysseldyke, J. (2009). Reported prevelance of evidence-based instuctional practices in special education. *The Journal of Special Education, 43*(1), 3-11.

Ermeling, B. A., Hiebert, J., & Gallimore, R. (2015). "Best practices" The enemy of better teaching. *Educational Leadership, 72*(8), 48-53.

Forness, S. (2001). Special education and related services: What have we learned from meta-analysis? *Exceptionality, 9*(4), 185-197.

Gable, R.A., Tonelson, S.W., Sheth, M., Wilson, C., & Park, K.L. (2012). Importance, usage, and preparedness to implement evidence-based practices for students with emotional disabilities: A comparison of knowledge and skills of special education and general education. *Education and Treatement of Children, 35*(4), 499-519.

Hattie, J. (2009). *Visable Learning: A Synthesis of Meta-Analyses Relating to Achievement. London*, UK: Routledge.

Kim, A.H., Vaughn, S., Wanzek, J., & Wei, S. (2004). Graphic organizers and their effects on the reading comprehension of students with LD: A synthesis of research. *Journal of Learning Disabilities, 37*(2), 105-118.

King-Sears, M.E., & Bowman-Kruhm, M. (2011). Specialized reading instruction for adolescents with learning disabilities: What special education co-teachers say. *Learning Disabilities Research and Practice, 26*(3), 172-184.

Lloyd, J., Forness, S., & Kavale, K. (1998). Some methods are more effective than others. *Intervention in School and Clinic, 33*(4), 195-200.

Regan, K.S., & Michaud, K.M. (2011). Best practices to support student behavior. *Beyond Behavior*, 40-47.

Scruggs, T.E., Mastropieri, M.A., Berkeley, S., & Graetz, J.E. (2010). Do special education interventions improve learning for secondary content? A meta-analysis. *Remedial and Special Education, 31*(6), 437-449.

West, E., McCollow, M., Kidwell, J., Umbarger, G., & Cote, D.L. (2013). Current status of evidence-based practice for students with intellectual disabilities and autism spectrum disorders. *Education and Training in Autism and Developmental Disabilities, 48*(4), 443-455.

Wolgemuth, J.R., Cobb, R., & Alwell, M. (2008). The effects of mnemonic interventions on academic outcomes for youth with disabilities: A systematic review. *Learning Disabilities Research and Practice, 23*(1), 1-10.

Yang, C., & Rusli, E. (2012). Teacher training in using effective strategies for preschool children with disabilities in inclusive classrooms. *Journal of College Teaching and Learning, 9*(1), 53-64.

In addition, a master's level educator independently viewed and scored 20% of the videos to assess inter-rater reliability, consistency, bias, and validate ratings. The initial correlation of

scores between raters was 83% agreement. Henceforth, both raters reviewed the Definitions of the Evidence-Based Practices (see appendices B), and discussed the ratings where there was a discrepancy. The majority of the discrepancies were due to misinterpretation of the Definitions of the Evidence-Based Practices. After clarifying the definitions, the raters made changes, as seen fit, on their score sheets. Recalculation of the correlation between raters increased to 97% agreement.

Furthermore, the internet was used to recruit general education teachers from across the country that had a student with a disability in their class, and interview them about their use of highly effective evidence-based practices that improve academic achievement for students with disabilities. Recruitment began with obtaining permission from the Association for Supervision and Curriculum (ASCD) to post the recruitment materials on ASCD Edge, their professional networking website. Kappa Delta Phi also provided permission to post the recruitment materials and network on their Kappa Delta Phi Global website, and Learning Disabilities Association of America posted the recruitment materials on their Facebook page. In addition, teacher recruitment materials were placed on Twitter and Facebook public profiles of teachers and organizations. Finally, in states where public school teachers' email address is pubic record, recruitment emails were sent directly to the teachers. Teachers that responded to the recruitment materials were contacted directly, sent an informed consent to sign and return (see Appendices D), and then interviewed. The participants were assured that their identity would remain confidential, the location they taught in would be reported regionally, and grade levels would be reported as elementary or secondary. An interview guide (see Appendices C) that included both open ended and close ended questions were used for each interview. Field notes were recorded on the interview guide, and when permissible, the interviews were recorded and transcribed. In

total, (n = 18) teachers participated in the research study and were interviewed using Skype, Google Hangouts, or in person.

Research question 1. The findings from the 30 MET videos viewed indicated that twenty-eight out of the thirty teacher videos viewed showed the use of at least one of the six highly effective evidence-based practices on the Evidence-Based Practice Checklist (Appendix A). Explicit instruction was used most frequently, with twenty-seven out of thirty teachers using this practice, followed by use of graphic organizers by eight teachers, and peer tutoring by three teachers (see Table 1). Only eight of the thirty teachers used more than one of the six highly effective evidence-based practices on the Evidence-Based Practice Checklist, and only two teachers used three of the practices. Using IBM SPSS Statistics 24 software, the analysis for the frequency of the use of the highly effective evidence-based practices on the Evidence-Based Practice Checklist, indicated that 90% of the teachers in the videos viewed use explicit instruction (see Table 2), whereas 27% used graphic organizers, and 10% use peer tutoring (see Figure 2). Inquiry-based learning, mnemonics, and reading comprehension strategies were not seen in any of the teacher videos viewed.

Table 1

Use of Highly Effective Evidence-Based Practices from Teacher Videos

Teacher	Grade	Topic	Year	EBP Used (Y/N)	Explicit instruction	Graphic organizers	Peer tutoring	Total EBP Used
A	8	ELA	1	Y	1	1	1	3
B	8	ELA	1	Y	1	0	0	1
C	9	Math	1	Y	1	0	0	1
D	6	Math	1	Y	1	1	0	2
E	9	Math	2	N	0	0	0	0
F	9	ELA	1	Y	1	0	0	1
G	9	ELA	1	Y	1	0	0	1
H	9	ELA	1	Y	1	1	1	3
I	9	Math	2	Y	1	0	0	1
J	9	Math	2	Y	1	0	0	1
K	5	Math	1	Y	1	1	0	2
L	5	Math	1	Y	1	0	0	1
M	5	ELA	1	Y	1	1	0	2
N	5	Math	2	Y	1	0	0	1
O	9	ELA	1	Y	1	0	0	1
P	4	ELA	2	Y	0	0	1	1
Q	4	ELA	1	Y	1	1	0	2
R	8	ELA	1	Y	1	1	0	2
S	5	Math	1	Y	1	0	0	1
T	7	ELA	1	N	0	0	0	0
U	5	Math	1	Y	1	0	0	1
V	8	ELA	1	Y	1	0	0	1
W	5	ELA	1	Y	1	1	0	2
X	9	ELA	2	Y	1	0	0	1
Y	9	Math	1	Y	1	0	0	1
Z	6	ELA	1	Y	1	0	0	1
A1	7	ELA	1	Y	1	0	0	1
B1	7	Math	1	Y	1	0	0	1
C1	6	ELA	2	Y	1	0	0	1
D1	8	Math	2	Y	1	0	0	1

Table 2

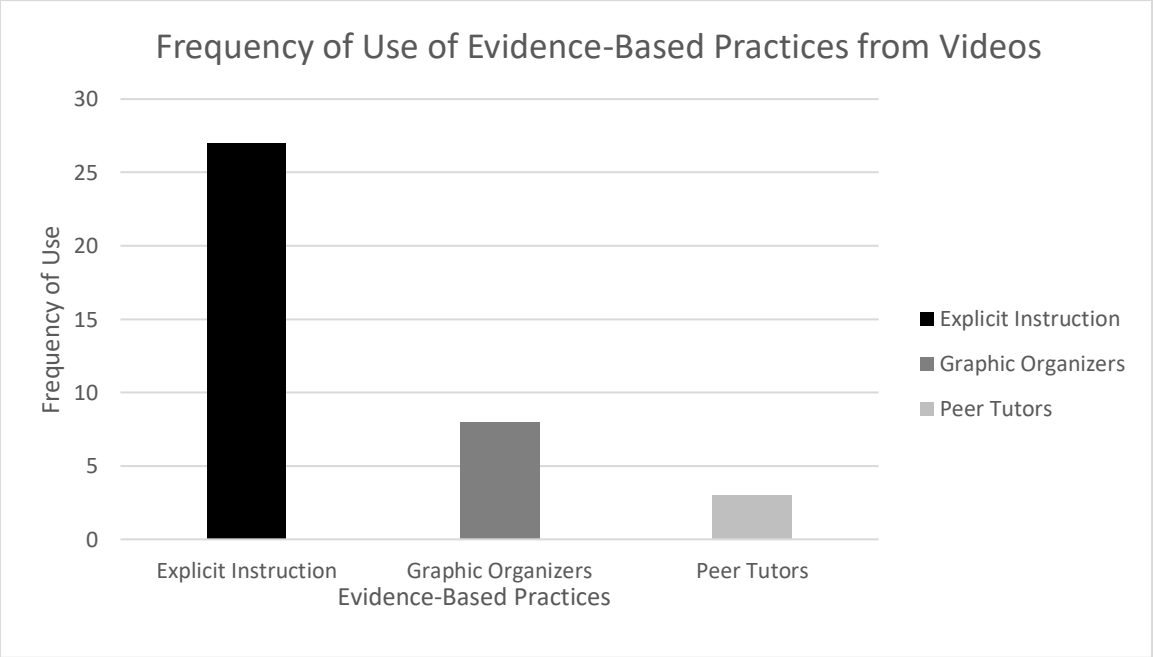
Frequency of Use of Highly Effective Evidence-Based Practices from Teacher Videos

Explicit instruction		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Didn't use Explicit Instruction	3	10.0	10.0	10.0
	Used Explicit Instruction	27	90.0	90.0	100.0
	Total	30	100.0	100.0	

Graphic organizers		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Didn't use Graphic Organizers	22	73.3	73.3	73.3
	Used Graphic Organizers	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

Peer tutoring		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not use Peer Tutoring	27	90.0	90.0	90.0
	Used Peer Tutoring	3	10.0	10.0	100.0
	Total	30	100.0	100.0	

Figure 2



Cross tabulations of the same data set by grade, revealed that explicit instruction was used 30% of the time by ninth grade teachers, 23% by fifth grade teachers, 16.7% by eighth grade teachers, 10% by sixth grade teachers, 6.7% by seventh grade teacher, and 3% by fourth grade teachers (see Table 3). Likewise, cross tabulations of graphic organizers by grade uncovered that 10% of fifth grade teachers used this practice, followed by 6.7% used by eighth grade teachers, 3.3% by fourth, sixth, and ninth grade teachers, moreover, graphic organizers were not seen being used at all by seventh grade teachers. Finally, cross tabulations of peer tutoring by grade found that this practice was seen being used 3.3% of the time by fourth grade, eighth grade, and ninth grade teachers. Peer tutoring was not used at all in the videos by fifth grade teachers, sixth grade teachers, and seventh grade teachers. When cross tabulations of the evidence-based practices seen in the teacher videos by topic was conducted, explicit instruction was used 50% of the time by English language arts teachers, and 40% of the time by math teachers. Graphic organizers were used 20% of the time by English language arts teachers and 6.7% of the time by math teachers. Peer tutoring was used 10% of the time by English language arts teachers, and not use at all by math teachers (see Table 4).

Table 3

Cross Tabulation of Evidence-Based Practices Used in Teacher Videos by Grade

Explicit instruction			0	1	Total
Grade	4	Count	1	1	2
		% of Total	3.3%	3.3%	6.7%
	5	Count	0	7	7
		% of Total	0.0%	23.3%	23.3%
	6	Count	0	3	3
		% of Total	0.0%	10.0%	10.0%
	7	Count	1	2	3
		% of Total	3.3%	6.7%	10.0%
	8	Count	0	5	5
		% of Total	0.0%	16.7%	16.7%
	9	Count	1	9	10
		% of Total	3.3%	30.0%	33.3%
Total		Count	3	27	30
		% of Total	10.0%	90.0%	100.0%

Graphic organizers			No	Yes	Total
Grade	4	Count	1	1	2
		% of Total	3.3%	3.3%	6.7%
	5	Count	4	3	7
		% of Total	13.3%	10.0%	23.3%
	6	Count	2	1	3
		% of Total	6.7%	3.3%	10.0%
	7	Count	3	0	3
		% of Total	10.0%	0.0%	10.0%
	8	Count	3	2	5
		% of Total	10.0%	6.7%	16.7%
	9	Count	9	1	10
		% of Total	30.0%	3.3%	33.3%
Total		Count	22	8	30
		% of Total	73.3%	26.7%	100.0%

Peer tutoring			No	Yes	Total
Grade	4	Count	1	1	2
		% of Total	3.3%	3.3%	6.7%
	5	Count	7	0	7
		% of Total	23.3%	0.0%	23.3%
	6	Count	3	0	3
		% of Total	10.0%	0.0%	10.0%
	7	Count	3	0	3
		% of Total	10.0%	0.0%	10.0%
	8	Count	4	1	5
		% of Total	13.3%	3.3%	16.7%
	9	Count	9	1	10
		% of Total	30.0%	3.3%	33.3%
Total		Count	27	3	30
		% of Total	90.0%	10.0%	100.0%

Table 4

Cross Tabulation of Evidence-Based Practices Used in Teacher Videos by Subject

Explicit instruction			0	1	Total
Topic	ELA	Count	2	15	17
		% of Total	6.7%	50.0%	56.7%
	Math	Count	1	12	13
		% of Total	3.3%	40.0%	43.3%
Total		Count	3	27	30
		% of Total	10.0%	90.0%	100.0%

Graphic organizers			No	Yes	Total
Topic	ELA	Count	11	6	17
		% of Total	36.7%	20.0%	56.7%
	Math	Count	11	2	13
		% of Total	36.7%	6.7%	43.3%
Total		Count	22	8	30
		% of Total	73.3%	26.7%	100.0%

Peer tutoring			No	Yes	Total
Topic	ELA	Count	14	3	17
		% of Total	46.7%	10.0%	56.7%
	Math	Count	13	0	13
		% of Total	43.3%	0.0%	43.3%
Total		Count	27	3	30
		% of Total	90.0%	10.0%	100.0%

In contrast, the findings from the teacher interviews (n = 18) indicated that all eighteen teachers used explicit instruction and peer-tutoring in their class (see Table 5 and Figure 3). Reading comprehension strategies were used by seventeen teachers, inquiry based learning was used by fifteen teachers, graphic organizers were used by fourteen teachers, and mnemonics were used by thirteen teachers in the classroom. Accordingly, the results showed a mean

(*M*=5.3) of the 6 highly effective evidence-based practices that improve academic achievement for students with disabilities (see Table 5). Using a Likert scale from 1-5, 1=1day a week, 2=twice a week, 3= three days a week, 4= four days a week, and 5= five days a week, each teacher was asked how frequently they used each of the evidence-based practices in one week. The mean frequency of use in rank order showed explicit instruction as the top ranked practice with a mean (*M* = 4.58), followed by reading comprehension strategies (*M* = 3.78), peer tutoring (*M* = 3.22), graphic organizers (*M* = 2.16), inquiry based learning (*M* = 2.06), and mnemonics (*M* = 1.25) (see Table 6).

Table 5

Evidence-Based Practices Used by Teachers Interviewed

Teacher	Explicit instruction	Graphic organizers	Inquiry based learning	Mnemonics	Peer tutoring	Reading comprehension strategies	Total EBPs used
1	1	1	1	0	1	1	5
2	1	1	1	0	1	1	5
3	1	1	1	1	1	1	6
4	1	1	1	0	1	1	5
5	1	1	1	1	1	1	6
6	1	1	0	0	1	1	4
7	1	1	1	1	1	1	6
8	1	1	1	1	1	1	6
9	1	1	1	1	1	1	6
10	1	1	1	1	1	1	6
11	1	1	1	1	1	1	6
12	1	1	0	1	1	1	5
13	1	0	1	1	1	1	5
14	1	1	1	1	1	1	6
15	1	0	0	1	1	1	4
16	1	0	1	1	1	1	5
17	1	0	1	0	1	0	3
18	1	1	1	1	1	1	6
Totals	18	14	15	13	18	17	5.3

Figure 3

Highly Effective Evidence-Based Practices Used by Teachers Interviewed

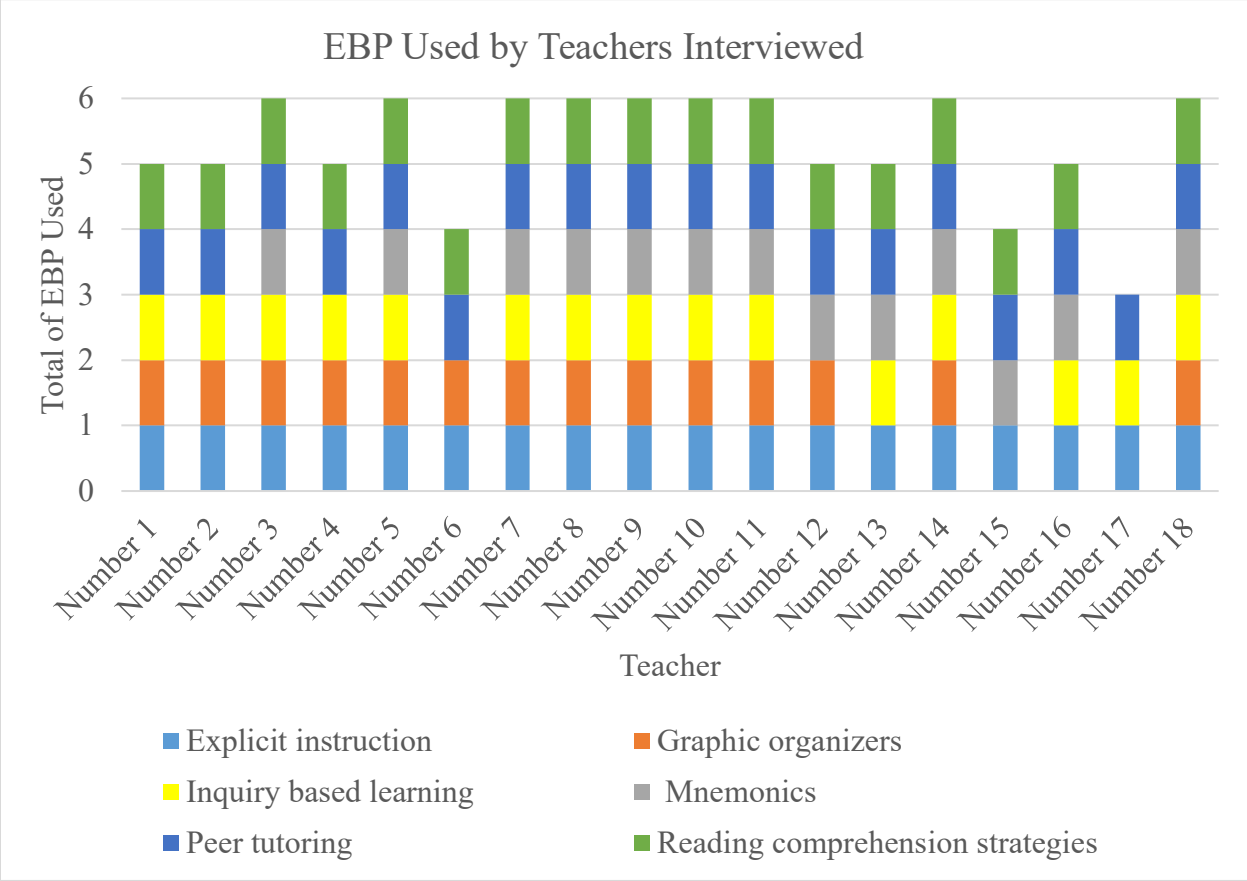


Table 6

Evidence-Based Practices Used by Teachers Interviewed in Rank Order by Mean Frequency

	N	Minimum	Maximum	Mean	Std. Deviation
Explicit instruction	18	1.5	5	4.58	1.00
Reading comprehension strategies	18	0	5	3.78	1.83
Peer tutoring	18	0	5	3.22	1.73
Graphic organizers	18	0	5	2.16	1.76
Inquiry based learning	18	0	5	2.06	1.93
Mnemonics	18	0	5	1.25	1.31
Valid N (listwise)	18				

Q2. What did teachers who did not use evidence-based practices cite as reasons for not adopting evidence-based practices?

The candidate conducted a review of the literature to elicit reasons teachers cited for not using evidence-based practices. The most cited rationales for not implementing evidence-based interventions in general education classrooms came about because he or she had to teaching to the test, follow a scripted curriculum, cover the curriculum, students need to do well on high stakes tests, lack of knowledge about evidence-based interventions for students with disabilities, and lack of resources to implement best practices (Ermeling, Hiebert, & Gallimore, 2015; Gable, Tonelson, Sheth, Wilson, & Park, 2012; Grima-Farrell, Bain, & McDonagh, 2011; Harrison, Bunford, Evans, & Sarno Owens, 2013; Hawkins, 2009; Kurth & Keegan, 2014; Mazzotti,

Rowe, & Test, 2013; McLeskey & Walsron, 2011; Scalon & Baker, 2012; Wells, 2009). A structured interview guide, the Herron Interview Recording Document for Use or Non-Use of Best Practices (see Appendices C), was created that incorporated questions about the six most often cited reasons for not implementing best practices, and the frequency of use of the most effective evidence-based practices to improve academic achievement for students with disabilities. Furthermore, participants were asked to use a Likert scale, ranging from one to five, to quantify the frequency in which each evidence-based practice was used on a weekly basis. The identity of the general education teacher interviewed was protected and remained confidential. Each teacher interviewed was assigned a number, and the state in which he or she teaches was reported within a region of the United States, such as the mid-west.

Once IRB approved a pilot study to determine if the internal consistency and reliability of the interview questions, the pilot study was conducted at Athens School District, Wisconsin. Five teachers from different grade levels who taught different subjects participated in the interviews. Once the interviews were completed, the participants were asked for feedback on the interview questions and how the interviews were conducted. The feedback from the participants was to provide definitions of the evidence-based practices or an example if a teacher is not familiar with the terminology for the practice. The feedback was incorporated into the Herron Interview Recording Document for the Use or Non-Use of Best Practices (see Appendices C). The findings from the pilot study indicated that when asked what evidence-based practices do you use the most, some of general education teachers responded by listing accommodations and modifications, instead of actual interventions. Conclusions were made based on the feedback from the teachers, and the findings. The pilot study was then closed. Participants were recruited to be interviewed in order to answer the second research question.

Research question 2. An inductive thematic analytic approach was used with NVivo software to code the data from the teacher interviews and analyze the data for emerging themes. The theme that emerged from the teacher interviews of 18 general education teachers concerning barriers that prevented the use of evidence-based practices that improve academic achievement for students with disabilities in an inclusive setting, revealed that only 4 of the 6 commonly cited reasons by teachers for not using evidence-based practices in the classroom teaching were not highly regarded as a hindrance to the use of evidence-based practices by the participants. It was divulged by 7 participants that he or she teaches to the test. In fact, in depth discussions with the participants unearthed the belief that teaching to the test was teaching the state or Common Core Standards. The theme of teaching to the test was viewed by these 7 teachers as exemplary, and would be beneficial for students to be college and career ready. Correspondingly, 5 of the 7 participants that teach to the test also felt the need to cover the curriculum, and that students needed to perform well on high stakes tests. However, only 2 out of these 7 participants revealed that he or she was required to follow a scripted curriculum.

On the other hand, autonomy was another theme that arose from the interviews. Following a scripted curriculum was not required for 15 participants, and had the autonomy to decide how and when they would teach the curriculum. Nevertheless, these 15 participants designed and taught lessons that were largely congruent with Common Core State Standards or National Standards. Similarly, 10 of 18 participants refuted pressure from administration for students to perform well on high stakes tests, and 8 out of 18 denied the need to cover the curriculum. Comparably, these same teachers that did not teach to the test, nor felt pressured for students to perform well on high stakes tests, and did not have to cover the curriculum, admitted

that intrinsically they want their students to do well on high stakes test, and try to cover the curriculum when feasible.

On the flip side, lack of knowledge was identified by the participants as a barrier to implementing evidence-based practices, as well as the lack of resources. Admittedly, 8 of the 18 participants felt as if he or she lacked the knowledge to correctly choose and implement the best evidence-based practice for a student with a disability. Surprisingly, all participants expressed that there was always room for improvement, and were not opposed to additional professional development on the use of specific evidence-based practices for students with disabilities. Yet overall, the lack of resources emerged as the most prevalent barrier to implementing best practices.

NVivo software was used to create a hierarchy chart to analyze the emerging themes related to the lack of resources. The findings of the analysis of teacher interviews indicated that the three major themes perceived as barriers or issues that interfered with the implementation of the most effective evidence-based practices were time, money, and materials. The most prevalent theme that was illuminated was time, as it relates to shared planning time, time to provide better feedback to students, time to develop deeper relationships with students, time to meet with special education teachers, and overall more time in general to meet the diverse needs of the students in their classes. Money was the next theme that emerged as a resource that impeded the use of best teaching practices. Upon further probing, participants expressed the necessity for an adequate classroom budget to meet the wide range of student abilities and needs in an inclusive setting. Additional funds would be used to purchase evidence-based curriculum, materials to differentiate learning, equipment that was specially adapted to meet the physical needs of students, access to evidence-based practices, as well as professional development for

both teachers and instructional aides. Astonishingly, ten of the eighteen participants expressed that they were provided with adequate funding for curriculum, professional development, or could ascertain additional materials or supplies if the need arose. After closer analysis, the theme of lacking materials in the classroom hindering the use of evidence-based practices in the classroom dovetailed with the need for additional money. Surprisingly, student behavior was not listed as a significant issue interfering with the implementation of highly effective evidence-based practices to improve academic achievement for students with disabilities. Only two participants proposed the need for additional training to manage student behavior and mental illness. Coincidently, in the majority of the 30 MET videos viewed, poor classroom management was observed, and classroom behaviors interfered with instruction.

Evaluation of Findings

The use of highly effective evidence-based interventions that improve academic achievement for students with disabilities implemented by general education teachers who participated in the MET longitudinal study, and the participants interviewed by the candidate, aligned with Albert Bandura's (1977) Social Learning Theory. Bandura postulated that people learn from observing others in social situations. Behavior that are repeatedly rewarded, will most likely be replicated by the observer. Were as a behavior that continually receives negative consequences will most likely not be replicated by the observer (Bandura, 1977). However, there is more to learning then just observations. Bandura's Social Learning Theory requires the learner to be able to attend to instruction, retain what was learned, reproduce the instruction, and be motivated to learn. These processes can be inhibited by beliefs, past experiences, and biases (Bandura, 1977). Generally speaking, teachers usually teach the way that they were taught.

Thus, the findings that 27 out of 30 teacher videos used explicit instruction is an example of past experiences influencing behavior.

Similarly, Vygotsky's Sociocultural Theory also proposes that people learn from past experiences, but differs from Bandura's Social Learning Theory, in that Vygotsky posits that people build off of past experiences, and from interacting with other people that are of higher intellect (Vygotsky, 1978). One reason a teacher would not implement best practices after receiving professional development and training is lack of prior knowledge, or inadequate scaffolding. Furthermore, if the teacher does not have prior knowledge to build upon, professional development would not be within the teacher's zone of proximal development (Vygotsky, 1978). Henceforth, these teachers would continue to use teaching practices that they have been successful with in the past, and with teaching practices that are in their comfort zone (Bandura, 1977), which would elucidate why three highly effective evidence-based interventions, inquiry based learning, mnemonics, and reading comprehension strategies were not put into practice in any of teacher videos viewed from the MET longitudinal study.

On the contrary, teachers that were interviewed all used explicit instruction and peer-tutoring in their class (see Table 5 and Figure 3). Reading comprehension strategies were used by 17 out of 18 teachers, inquiry based learning was used by 15 of the 18 teachers, graphic organizers were used by 14 out of 18 teachers, and mnemonics were used by 13 out of 18 teachers on a regular basis. Though the findings of 5 out of 6 best practices conflicted with the findings from the MET teacher videos viewed, both Bandura's Social Learning Theory and Vygotsky's Sociocultural Theory support the findings. The majority of the teachers that were interviewed were recruited from websites that were related to teaching or learning associations. All of the teachers interviewed were motivated to learn, whether intrinsically or extrinsically,

with many referring to how teacher effectiveness has influenced their salary, tenure, or promotions (Bandura, 1977). In addition, the participants would have been in the zone of proximal development when learning about these best practices (Vygotsky, 1978). In addition, by learning these best practices from others that are of higher intellect, including their colleagues, influenced whether or not the teachers implemented what they learned. Another explanation for discrepancies between the use of the most effective evidence-based practices by teachers in the MET videos viewed, and teachers that were interviewed was that the findings from the MET longitudinal study, and the research published from the study, has had a significant influence in the teaching community. Henceforth, leading to salient changes to teacher evaluations, and effectiveness.

The findings regarding barriers and issues that prevent the use of the most effective evidence-based practices for students with disabilities were unexpected. The teachers that were interviewed listed lack of time and money as the most significant barriers to implementing best practices. Time had the greatest impact on the teachers' ability to implement best practices. On the other hand, money was not a factor for 10 of the 18 teachers. Although these findings were unexpected, the socioeconomics of the school districts that theses teachers taught in could have influenced the findings.

Summary

The purpose of the qualitative research study was to ascertain which highly effective evidence-based practices were used by general education teachers to improve academic achievement and social skills for students with disabilities in an inclusive setting. Furthermore, how frequently these highly effective best practices were implemented. The research study delved into why some general education teachers used less effective interventions in the

classroom, or did not use these best practices. Finally, the research study sought to illuminate barrier and obstacles that prevented general education teachers from implementing best practices for students with disabilities in their classes.

Archival data from the MET longitudinal study, and teacher interviews were used to answer the research questions. The archival data were videos that general education teachers who had a student with a disability in their class, recorded as part of the MET longitudinal study. A pseudo-random sample (n = 30) of teacher videos were selected, viewed, and scored for use of six highly effective evidence-based practices for students with disability. In addition, general education teachers that had a student with a disability in their class were recruited to participate in the research study. The findings for question number 1, how frequently was each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities, indicated a discrepancy between the archival data and the teacher interviews. The results from the archival data indicated that 90% of the teachers in the videos viewed used explicit instruction, 27% used graphic organizers, and 10% used peer tutoring. Inquiry-based learning, mnemonics, and reading comprehension strategies were not used in any of the teacher videos viewed.

Conversely, the findings from the teacher interviews (n = 18) indicated that 100% of the teachers used explicit instruction and peer-tutoring in their class. Reading comprehension strategies were used by 94% of the teachers, inquiry based learning was used by 83% of the teachers, graphic organizers were used by 78% of the teachers, and mnemonics were used by 72% of the teachers in the classroom. In addition, using a Likert scale from 1-5, 1=1day a week and 5= five days a week, each teacher was asked how frequently they used each of the evidence-based practices in one week. The mean frequency of use when placed in rank order showed

explicit instruction as the top ranked practice with a mean (M = 4.58), followed by reading comprehension strategies (M = 3.78), peer tutoring (M = 3.22), graphic organizers (M = 2.16), inquiry based learning (M = 2.06), and mnemonics (M = 1.25).

The findings for research question number 2, what do teachers who do not use evidence-based practices cite as reasons for not adopting evidence-based practices, indicated that teaching to the test, having to follow a scripted curriculum, and students doing well on high stake tests did not cause barriers or obstacles to implement best practices. An inductive thematic analysis indicated that time, money, and resources were primary barriers to the implement of evidence-based practices, or more frequent use of evidence-based practices. Upon closer analysis, money and resources were not separate themes. Rather, the teachers stated that they would buy the needed resources if they had a more adequate classroom budget. Lack of knowledge was not a primary barrier for implementing evidence-based practices. However, all participants expressed that they would not mind attending additional training on the use of evidence-based practices for students with disabilities, and two sentiments were repeated heard, it wouldn't hurt, as well as you can always learn more.

The findings from the qualitative research study are supported by both Albert Bandura's (1977) Social Learning Theory, and Vygotsky's Sociocultural Theory. Bandura's Social Learning Theory (1977), surmised that people learn from observing others in social situations. Behaviors that are repeatedly rewarded in social situations, will most likely be replicated by the observer, and behaviors that receive negative consequences will not be replicated. Bandura posited that to learn new information required the ability to attend to instruction, retain what was learned, reproduce the instruction, and be motivated to learn (Bandura, 1977). Vygotsky's Sociocultural Theory, concurred with Bandura's Social Learning Theory in that people learn

from watching other, but Vygotsky's Sociocultural Theory went beyond people learning from others. He postulated that people build off of past experiences, and from interacting with other people that are of higher intellect. In addition, the learner needs to be in the Zone of Proximal development to learn from someone of higher intellect (Vygotsky, 1978).

The teacher videos from the MET longitudinal study (n = 30) only disclosed the use of three highly effective evidence-based practices by general education teachers that had a student with a disability in their class. Explicit instruction, peer-tutoring, and graphic organizers were the only highly effective evidence-based practices used in the teacher videos. The highly effective evidence-based practices not used in the teacher videos were inquiry-based learning, mnemonics, and reading comprehension strategies. The non-use of inquiry-based learning, mnemonics, and reading comprehension strategies, based on Bandura's Social Learning Theory, was that the teachers did not regularly see other teachers rewarded when they used these best practices. Other reasons for not using these best practices are that when receiving training on these practices, the teachers were either not able to attend to learning, retain what they learned, reproduce what they learned, or had no motivation to learn (Bandura, 1977). In addition, the teachers may not have had adequate background knowledge or lack of knowledge, scaffolding from the trainers, or the teachers were not in the Zone of Proximal Development (Vygotsky, 1978).

The teachers that were interviewed used the majority of the highly effective evidence-based practices on a regular basis. These findings were the complete opposite of the findings from the teacher videos. The higher frequency of use by the teachers interviewed, based on Bandura's Social Learning Theory could be that these teachers have seen their colleagues use the six highly effective evidence-based practices and be positively rewarded for their behavior.

Similarly, the teachers interviewed were intrinsically and extrinsically motivated to learn these best practices. They had the ability to attend to learning, retain what they learned, and were able to reproduce what they learned (Bandura, 1977). In addition, based on Vygotsky's Sociocultural Theory, the teachers interviewed had adequate background knowledge that they could build upon. The trainer used adequate scaffolding for the teachers, and the teachers were in the Zone of Proximal Development when they attended training (Vygotsky, 1978).

The findings from the qualitative research study answered the two research questions, and identified additional themes related to barriers that impacted the use of highly effective evidence-based practices by general education teachers to improve academic achievement for students with disabilities. The rich descriptive data obtained from in-depth teacher interviews will be of value to the educational community, scholars, legislatures, policy makers, and for future special education reforms. However, the findings from the research study were limited by the sample sizes, time, and resources available for a dissertation. Additional research is needed to ascertain why there was a sizable discrepancy on the use of highly effective evidence-based practices between the teacher videos from the MET longitudinal study, and the teacher interviews.

Chapter 5: Implications, Recommendations, and Conclusions

In the 2013-2014 school year, 6.5 million students with disabilities received special education services in the United States, with the majority of these students spending 80% or more of their day in a general education classroom (Aud et al., 2011; Institute of Educational Sciences, 2015; National Center for Educational Statistics, 2015). General education teachers with an increased number of students with disabilities in their classes triggered a paradigm shift in pedagogical strategies implemented to meet the learning needs of students with and without disabilities (Hulett, 2009; Stichter, Conroy, & Kauffman, 2008; Taylor, 2009; West, McCollow, Kidwell, Umbarger, & Cote, 2013). Current research indicates that the use of evidenced-based interventions for students with disabilities implemented in general education classrooms improves academic achievement and social skills for students with and without disabilities (Flower, McDaniel, & Jolivette, 2011; Fore III, Hagan-Burke, Boon, & Smith, 2006). Nonetheless, The State of Learning Disabilities 2011 report indicated that 60% of students with disabilities had general education teachers that were able to meet their learning needs (Crawford, 2011).

The problem addressed in this qualitative study was that it was unknown whether general education teachers were using best instructional practices for students with disabilities. It was unclear if general education teachers were using the most highly effective evidence-based interventions in their classrooms to improve academic achievement for students with high incidence disabilities, as well as the frequency in which these best practices were employed. Nor was it clear that when general education teachers were not using evidence based practices, why weren't they using best practices. What was known from the literature is when highly effective evidence-based interventions are implemented in general education classrooms to meet the

learning needs of students with disabilities, both academic achievement and social skills improve (Copeland & Cosbey, 2008-2009; Cortiella, 2011; Huberman, Navo, & Parrish, 2012; Rathvon, 2008; Raymond, 2008; Yang & Rusli, 2012). To close the achievement gap, it is imperative to get general education teachers to implement these best practices on a daily basis, with fidelity, when working with students with disabilities.

To increase the use of the most effective evidence-based interventions in the general classroom for students with disabilities, practices that general education teachers used to improve academic achievement for students with high incident disabilities needed to be identified. Better data was needed on: (a) whether or not general education teachers used the most effective evidence-based interventions for students with high incident disabilities; (b) the frequency with which each of the most effective evidence-based interventions for high incident disabilities were implemented; (c) what reasons teachers gave if they were not using best practices. If this study was not done, the lack of knowledge regarding the use of the most effective evidence-based interventions by general education teachers could lead to the misallocation of funds for professional development, staffing, and resources aimed at improving academic achievement for students with high incident disabilities educated in general education classrooms. Not identifying reasons why general education teachers did not implement best practices hinders the adoption of best teaching practices, and the improvement in academic achievement for students with high incident disabilities would be less effectively targeted for change.

The purpose of this qualitative research study was to identify which highly effective evidenced-based practices general education teachers used for children with disabilities, as well as the frequency with which general education teachers used evidence-based interventions with large effect size in the classroom to improve academic achievement for students with disabilities.

A secondary purpose was to identify reasons why some teachers did not use evidence-based interventions.

A qualitative approach was used to answer the research questions because the problem researched (use and non-use of best teaching practices) required an in-depth exploration, through interviews, of reasons why best practices were not used, and observations of recorded teacher videos (Creswell, 2009; Patton, 2012; Shank, 2006). A review of the literature from previous studies that sought to identify and tabulate frequency of use of best practices for teaching students with disabilities, suggested a minimal sample size of 30 observations (in this case using videos of teachers teaching in the classroom) were necessary to represent the population in the Measures of Effective Teaching Longitudinal (MET) Study. Though the research study was qualitative, the results obtained from the MET videos are likely generalizable, due to the large number of participants represented by the MET sample, and the participants were drawn from six major cities in different regions of the United States, representing different cultural and regional differences. Videos of teachers from the Measures of Effective Teaching (MET) Longitudinal Study of Teaching Practices in America were assembled and scored with an original assessment instrument developed as part of this study. MET videotaped some 1,868 teachers of students with disabilities ($N = 1,868$) over a two-year period, from the beginning of the 2009 to the end of the 2011 school year (Bill and Melinda Gates Foundation). The qualitative research study also elicited the participants' rationales, justifications, and personal experiences, through the use of in-depth interviews, providing a better understanding of chosen behaviors (Moustakas, 1994; Patton, 2012). Similarly, the candidate sought to interview 30 general education teachers for the study to triangulate the primary observational data.

Q1. How frequently was each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities?

To answer the first research question, a pseudo-randomly selected group of 30 teachers, whose teaching practices were videotaped, were scored using metrics that assess the presence or absence of the six most effective evidence-based interventions and the frequency in which each teacher used the six most effective evidence-based interventions. In addition, a sample of 18 teachers, whom had a student with a disability in their class, agreed to participate and were interviewed in-depth to discover which best practices they used, and the frequency that these practices were used on a weekly basis. Explicit instruction, graphic organizers, and peer tutoring were the only highly effective evidence-based practices used in the 30 teacher videos viewed from the MET longitudinal study, with explicit instruction used by 90% of the teachers, graphic organizers used by 27% of the teachers, and peer-tutoring used by only 10% of the teachers. Conversely, all six highly effective evidence-based practices were used by 50% of the teachers interviewed, and merely 5.5%, or 1 teacher used 3 of the six highly effective evidence-based practices. Explicit instruction and peer-tutoring were used by 100% of the teachers interviewed, 94% of the teachers used reading comprehension strategies, 83% of the teachers used inquiry based learning, and 77% of the teachers used graphic organizers.

Q2. What do teachers who did not use evidence-based practices cite as reasons for not adopting evidence-based practices?

To answer the second research question, the 18 teacher participants that were interviewed about their use of best practices, were also asked if there were any barriers or obstacles that prevented the use of best practices. The qualitative interviews, even with a smaller number of

participants, enhanced the data from the MET videos, by providing a deeper and richer understanding of the daily challenges the participants faced (Moustakas, 1994; Patton, 2012; Shank, 2006). The in-depth interviews also provided insight as to why certain best practices were used or not used. Conducting face to face interviews through technology, encouraged participants to respond to all of the interview questions, allowed the participants to tell his or her story about past experiences using specific interventions, and express feelings about using the most effective evidence-based interventions. The information gathered during these technological, face to face interviews, led to additional questions posed, answering clarifying questions for participants, and enabled the interview to become a discussion that provided more details and examples (Moustakas, 1990; Moustakas, 1994). The most frequently cited barriers or issues cited by the teachers interviewed, that interfered with the implementation of the most effective evidence-based practices were time, money, and materials.

One limitation of the research study was that teachers that participated in the MET longitudinal study chose when to record a lesson; therefore, the videos may or may not have reflected the participants' usual teaching methods and techniques. It is likely that the teachers presented their best teaching in the videos. Therefore, results of this study represent a best-case scenario. Findings would have been even more dramatic had the videos been collected randomly from the teacher's instructional practices. A second limitation of the study was that the teachers in the MET videos could not be contacted or interviewed to gather further information and data on the use and non-use of highly effective evidence-based practices. The last limitations of the research study were the number of teachers recruited to participate in the interview portion of the research study and where recruitment materials were distributed. Teacher recruitment began at the beginning of April of 2016, with a goal of recruiting 30 participants. However, after six

months of recruiting potential participants for the study, only 18 teachers agreed to participate in interviews by the end of September 2016. Difficulty in recruitment may be due to lack of time all teachers experience, but it must be said that if teachers refuse to participate in scholarly studies designed to identify best teaching practices, then the profession cannot, in the long run, improve its practices. In addition, the majority of the teachers that participated in interviews responded to recruitment materials that were placed on teacher association websites. Teachers recruited from teacher association websites or who follow teacher associations on Facebook or Twitter might not be a true representation of general education teachers across the country.

Ethical dimensions of the research study were protecting the identity and anonymity of the participants in both the MET longitudinal study, and the teachers that were interviewed. Providing the highest level of confidentiality possible, encouraged the participants that were interviewed to speak open and honestly, without the fear of repercussions (Patton, 2015; Schram, 2006). Any information that could lead to a participant's identity being discovered, was de-identified. Letters and numbers were used in place of teachers' names. The name of the school or school district that a participant worked in was not indicated anywhere in the findings, except for the geographical region in the United States where the participants that were interviewed taught.

Chapter 5 is a summary of the problem being addressed by the research study, the purpose of the research, the methodology used to answer the research questions, limitations of the study, and ethical dimensions, brought together by the findings to draw conclusions from the research. Implications are presented that align the research problem, purpose, and findings that are supported by the research study data.

Implications

Q1. How frequently were each of the most effective evidence-based interventions used in general education classrooms to improve academic achievement for students with high incident disabilities?

There are many implications that came forth from the findings regarding the use of highly effective evidence-based interventions by general education teacher that had a student with a disability in his or her class, attributable to the use of archival data from the MET longitudinal study, and from in-depth interviews with general education teachers that had a student with a disability in his or her class. The classroom teacher has the greatest effect on student achievement, henceforth the purpose of the MET longitudinal study was to determine how to measure teacher effectiveness, and used the findings to improve teaching practices that increase student achievement (Creemers & Kyriakides, 2008; Stronge, Ward, & Grant, 2011; U.S. Department of Education, 2010). The pseudo-randomly selected (n = 30) general education teacher videos recorded as part of the MET longitudinal study from 2009-2011, and viewed to determine the use of the most highly effective evidence-based practices that improve academic achievement and social skills for students with disabilities, found that only three of the six highly effective evidence-based practices were used by these teachers. However, when 18 general education teachers that had a student with a disability in their class were interviewed in 2016, 50% of these teachers used all six of the highly effective evidence-based practices for students with disabilities, and one participant only used three of these highly effective evidence-based practices, suggesting that school districts had provided more teacher trainings and professional development in the past five years, on the use of evidence-based practices in general education classrooms for students with disabilities, since the completion in 2011 of the MET longitudinal

study. Teachers interviewed made references to their school districts' teacher effectiveness model, that teacher effectiveness was taken very seriously by administrators, as well as the repercussions or rewards associated with the score earned, ranging from losing their job to increased salaries; indicating that the teachers interviewed may have benefited from new training and professional development over the past five years on teacher effectiveness, provided by the school districts.

Moreover, the majority of the participants interviewed were recruited from teacher association websites, insinuating that these teachers sought out up to date research practices to improve student achievement on their own. Statements made by the participants included reading professional journals all of the time, self-selection of professional development, that you can never know enough, it wouldn't hurt to have more professional development, and the need to be a lifelong learner because education is always changing.

The disparities noted between the observational finding from the MET teacher videos and the in-depth teacher interviews, on the use of highly effective evidence-based practices, coincide with Bandura's Social Learning Theory. A major aspect of Bandura's Social Learning Theory is that people learn by observing others. If the person observed is continually rewarded for a behavior, an observer is likely to adopt the rewarded behavior. On the other hand, if the person being observed receives negative consequences for a specific behavior, the observer will not adopt the behavior that incurs negative consequences (Bandura, 1977). In the same way, the teachers interviewed chose to adopt a rewarded behavior, using highly effective evidence-based practices, thus being rewarded monetarily. Correspondingly, the teachers interviewed may have changed their behavior from using ineffective teaching practices to avoid negative consequences, such as losing their job.

Furthermore, Bandura postulated that for learning to occur and be applied, the learner needs to be able to attend to learning, retain what was learned, reproduce what was learned, and be motivated to learn. Teachers interviewed were intrinsically and extrinsically motivated to use highly effective evidence-based practices to improve academic achievement for students with disabilities in their classes. Sentiments made by the teachers interviewed, such as belonging to professional associations, obtaining additional certifications and degrees, reading professional journals all the time, and being a lifelong learner are indicative of intrinsic motivation. Similarly, the teachers interviewed spoke of monetary gains for earning advanced degrees, attending professional development, and for teacher effectiveness scores, which is considered extrinsic motivation. The use of only three of the six highly effective evidence-based practices by the sample of general teachers from the MET longitudinal study may be attributed to lack of motivation to learn best teaching practices for students with disabilities.

Other factors that inhibit a person's ability to attend, retain, and reproduce what is learned are the learner's past experiences, beliefs, and biases (Bandura, 1977). It is possible that the teachers from the MET longitudinal study experienced successful student outcomes when explicit instruction, graphic organizers, and peer tutoring were implemented in their classrooms, leading to continual use of these three highly effective evidence-based practices. Likewise, the teachers that participated in the MET longitudinal study were aware of the purpose of the study, therefore, they chose to record lessons that exemplified effective teaching, using teaching practices that were effective for them in the past. Comparably, if a teacher from the MET longitudinal study disapproved of a teaching practice, he or she would not implement this practice in their classroom (Bandura, 1977). The non-use of inquiry based learning, mnemonics,

and reading comprehension strategies can be attributed to participant disapproval of these teaching practices.

Vygotsky's Sociocultural Learning Theory provides additional rationales for the non-use of three highly effective evidence-based practices by the teachers in the MET longitudinal study. Vygotsky posited that people learn from past experiences, build off of past experiences, and from interacting with other people of higher intellect (Vygotsky, 1978; Vygotsky, 1986). If the teachers in the MET longitudinal study attended training on the use of highly effective evidence-based practices, but did not have sufficient background knowledge to build off of, then the teachers would not be able to learn these new techniques. Similarly, the teachers may have had adequate background knowledge, but scaffolding did not occur during teacher training, henceforth learning new teaching practices would not be possible. Finally, the teachers from the MET longitudinal study may have not had opportunities to interact with people of higher intellect, minimizing their ability to learn. Learning from interacting with people of higher intellect also requires the learner to be within their zone of proximal development (Vygotsky, 1978; Vygotsky, 1986). If the teachers from the MET longitudinal study did not have adequate background knowledge, scaffolding, and the content was not within their zone of proximal development, then again, learning would not occur.

Q2. What do teachers who did not use evidence-based practices cite as reasons for not adopting evidence-based practices?

In-depth interviews with general education teacher participants that had a student with a disability in his or her class allowed for numerous implications to arise from themes. The most prominent theme for not adopting evidence-based practices was lack of resources. Upon further investigation, the theme of resources was the culmination of the lack of time, the lack of money,

and the lack of materials. Lack of time was associated with shared planning time with the special education teacher or co-teacher, time to grade papers and provide more in depth feedback to students, along with time to develop relationships with students. The connotations related to having more time were student centered, and that having additional time would produce better student outcomes. The lack of money at first suggested that the teachers needed a more adequate classroom budget for classroom supplies. Nevertheless, more money was needed to meet the wide range of student abilities and needs in an inclusive classroom setting, which also included using the money to buy classroom materials to differentiate learning, specialized equipment for students physical, verbal, and academic needs, to gain access to evidence-based practices, and for additional professional development for the teacher and the instructional aides. Thus, lack of materials was woven into the lack of money, and were suggestive of better meeting the needs of the students, as well as better academic outcomes. These findings are supported by Bandura's Social Learning Theory, in that barriers that inhibit the use of newly learned content are lack of resources, or money to sustain continued use of newly learned content (Bandura, 1977).

The second major theme that effected the use of evidence-based practices was the lack of knowledge to choose and implement best practices for students with disabilities. The participants interviewed suggested that they knew of evidence-based practices when it came to students without disabilities, but were uncomfortable choosing and implementing an evidence-based practice for a student with a disability in their class. Participants affirmed that there was always someone to go to when they had a student in their class with a disability and needed help, mainly the special education teacher, but also reviewed the student's Individual Education Plan (IEP), spoke with other teachers that had the student in the past to see what worked, asked the student what helps them learn, and asking the parents about how the student learns best. Yet,

when asked which evidence-based practices they used the most in their classroom for students with disabilities, the responses were mainly accommodations and modifications that are listed on a student's IEP, which infers that general education teachers lack the knowledge to choose the best evidence-based practice to implement when they have a student with a disability in their class.

Based on prior research studies, lack of knowledge on the use of highly effective evidence-based practices that improve academic achievement for students with disabilities can be attributed to numerous factors. Lack of training in teacher education programs is one reason that evidence-based interventions are not used by general education teachers. Teachers that received training as part of their college programs on inclusionary practices felt as though the coursework they received was not useful. Additionally, teachers that attended in-services on inclusionary practices do not think that the training is worthwhile if they cannot apply it to the subject that they teach or to a specific student in their class with a disability (Kosko & Wilkins, 2009). Another factor that contributes to teachers' lack of knowledge is the type of training teachers received. The most cost efficient way to train a large number of teachers is through district wide or school wide training. However, district wide and school wide teacher training is not effective, because the training is usually generalized, and if the training is not directly related to the content taught by a teacher, then the teacher will not try to adapt it and implement it in the classrooms (Ermeling, Hiebert, & Gallimore, 2015; Kurth & Keegan, 2014). Similarly, general education teachers often felt ill prepared or lacked the knowledge to modify individual assignments for students with disabilities without changing the teaching strategy used for the entire class (Kurth & Keegan, 2014; Scalon & Baker, 2012). On the same note, a major concern expressed by general education teachers was that they felt as if they were not well enough

prepared to meet the needs of the students with disabilities and the needs of the rest of the class (Scanlon & Baker, 2012). Teachers with low self-efficacy about his or her ability to adapt learning for a student with a disability are less inclined to implement effective evidence-based practices to improve academic achievement (Kosko & Wilkins, 2009).

The third major theme was that commonly cited reasons for not using evidence-based practices in the past were no longer a concern for general education teachers. Teachers voiced that teaching to the test was considered exemplary practice because the most recent high stakes tests are in alignment with the Common Core State Standards. Teachers are expected to teach the Common Core State Standards to promote college and career readiness for all students. Suggesting that the Common Core State Standards and teaching to the test are one in the same, but instead of the negative connotations that in the past were associated with teaching to the test, it is now associated with positive connotations. The continued use of teaching practices that teach to high stakes tests, and the use of the Common Core State Standards can be attributed to Bandura's Social Learning Theory, given that these practices received positive rewards and were therefore adopted by the general education teachers interviewed (Bandura, 1977).

The forth major theme, autonomy, was expressed by 15 of the 18 teachers interviewed in response to having to follow a scripted curriculum, covering the curriculum, and teaching to the test, which were now not considered reasons for not using evidence-based practices. These 15 teachers touted the freedom to decide the sequence in which to teach grade level curriculum, the methodology used to teach the curriculum, pacing, and the flexibility to not cover all of the curriculum in lieu of content mastery. In addition, these teachers attributed their autonomy to having supportive administrators. Even though these teachers had plenty of autonomy, they affirmed that they wanted their students to do well on high stakes tests, and tried to cover the

curriculum, but any pressure they felt was self-imposed, insinuating that these teachers were intrinsically motivated. The intrinsic motivation expressed by the majority of the teachers interviewed, and the higher frequency of use of the six highly effective evidence-based practices that improve academic achievement for students with disabilities, concur with Bandura's Social Learning Theory in that a person needs to be motivated to use what was learned (Bandura, 1977).

The last theme that emerged and was cited by two participants as a reason for not using evidence-based practices was the need for additional training to manage student behaviors, and to learn more about mental illness. The inability to manage student behaviors clearly effects a teacher's ability to implement effective evidence-based practices beyond explicit instruction. Classroom management and managing student behaviors would inhibit students' ability to attend to learning (Bandura, 1977). Coincidently, the teacher videos viewed from the MET longitudinal study all showed poor management of student behaviors, suggesting that the minimal use of graphic organizers and peer-tutoring, as well as the non-use of inquiry based learning, reading comprehension strategies, and mnemonics was in part due to poor classroom management.

Results of this qualitative research study will help general education teachers to use highly effective evidence-based practices more frequently, remove barriers that interfere with the use of best practices, and provide the teachers with the resources needed to implement best practices. When a general education teacher feels as if he or she lacks the knowledge and skills to adapt instruction for a student with a disability, he or she is less apt to implement effective evidence-based practices to improve academic achievement (Scalon & Baker, 2012). Practical steps that school districts can take to help general education teachers use more highly effective evidence-based practices would be to start by making teachers aware of what are currently considered and what are not considered best teaching practices in an inclusive setting. The

National Secondary Transition Technical Assistance Center is a free resource that teachers can access to better understand evidence-based practices. The terminology for evidence-based practices, research-based practices, promising practices, and unestablished practices are defined, along with the criteria used to define the terminology. The three factors that are considered to categorize teaching practices are the rigor of research, a record for improving outcomes, and a review process with quality indicators that support the research findings. Evidence-based practices have undergone rigorous research, with a proven record of improvement, and reviews that support the research findings. Research-based practices also underwent rigorous research designs, have a proven record for improvement, but does not incorporate reviewing the research findings. Promising practices use weak research designs, have shown some positive outcomes, and are based on research. Unestablished practices are not research based, have no data that establishes positive outcomes, and are based on professional judgement (Mazzotti, Rowe, & Test, 2013). Introducing this information and showing teachers how to access the National Secondary Transition Technical Assistance Center, empowers them to take responsibility, ownership, and promotes autonomy to choose which evidence-based practices to use.

The next step would be to provide a minimum of eight hours of training sessions and professional development on the use of the most effective evidence-based practices for these teachers, within a three-year period to maximize self-efficacy for adapting learning to meet the needs of students with disabilities (Kosko & Wilkins, 2009). Training needs to be directly related to the content taught by a teacher, not district wide or school wide, otherwise the teacher will not try to adapt it and implement it in the classrooms (Ermeling, Hiebert, & Gallimore, 2015; Kurth & Keegan, 2014). Teachers also need to be taught how to assess the effectiveness of newly implemented best practices on student achievement. Best practices that are the most

effective should be continued, and less effective practices should be eliminated (Ermeling, Hiebert, & Gallimore, 2015).

Then, schools should provide the teachers with opportunities to practice implementing best practices and receive feedback from instructional coaches or mentors. Based on Bandura's Social Learning Theory, rehearsing or practicing the actions verbally, while imaging the behavior improves proficiency. Motor reproduction or physically practicing the behavior and receiving feedback from peers about how well the behavior was reproduced, allows the learner to adjust motor reproduction and correct errors. The more opportunities that a learner has to practice, the more proficient the learner will be reproducing the behavior (Bandura, 1977). Finally, provide the teachers with support from instructional coaches and mentors to build their capacity to utilize best practices and increase the frequency in which highly effective evidence-based practices are used (King-Sears & Bowman-Kruhm, 2011; Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015). These practical steps will enable general education teachers to acquire the knowledge and develop the skills necessary to implement best practices, but the other barriers, lack of time and lack of resources need to be removed in order for teachers to apply what they learned.

Practical steps that school districts can take to address the lack of time and resources is to make scheduling changes to facilitate co-teaching of classes by a general education teacher and a special education teacher. Co-teaching is beneficial to students with disabilities and improves academic achievement in an inclusive setting (Scanlon & Baker, 2012). General education teachers cite the lack of prep time to research evidence-based practices for students with disabilities, and the overwhelming amount of information to skim through to find evidence-based practices that are right for students with disabilities in his or her class (Ermeling, Hiebert, &

Gallimore, 2015; Harrison, Bunford, Evans, & Sarno Owens, 2013; Mazzotti, Rowe, & Test, 2013). Co-teachers work collaboratively to make quality adaptations to curriculum and instruction that can be implemented using a variety of teaching strategies to meet the learning needs for all of the students (King-Sears & Bowman-Kruhm, 2011; Ronfeldt, Owens Farmer, McQueen, & Grissom, 2015). The general education teacher is the subject matter expert for the curriculum, and the special education teacher is the expert on the use of highly effective evidence-based practices for students with disabilities. Having common planning time facilitates more efficient use of time by teachers because they work together to develop lesson plans, grade papers, and provide students with timely feedback. Similarly, co-teaching enables the teachers to share materials and resources, instead of having to purchase additional resources. Special education teachers already have classroom materials to differentiate learning, they have specialized equipment for students physical, verbal, and academic needs, and access evidence-based practices. Co-teaching is a practical way to address the need for additional time and resources by general education teachers to meet the diverse needs of students with disabilities, it increases academic achievement, and when followed with fidelity, a paradigm shift in pedagogy occurs, hence, meeting the diverse needs of all students (Scanlon & Baker, 2012).

Recommendations for Application

Based on the results of this research study I recommend professional development and training for general education teachers on the use of highly effective evidence-based practices that improve academic achievement in an inclusive setting for all students. I recommend hiring instructional coaches and mentors to support and sustain the implementation of these best practices, and that teachers are provided with resources to determine what teaching practices are evidence-based. In addition, I recommend implementing co-teaching, providing common

planning time for teachers to collaborate, and sharing of educational resources. Finally, I recommend additional research on the use of highly effective evidence-based practices in general education classes to improve academic achievement for students with disabilities.

The findings from teacher interviews, and from viewing the teacher videos from the Measures of Effective Teaching (MET) Longitudinal study, indicated that general education teachers lack the knowledge and skills to implement highly effective evidence-based practices that improve academic achievement for students with disabilities. The findings from teacher videos viewed illuminated that only three out of six highly effective evidence-based practices were used by these teachers. Explicit instruction was used by 90% of the teachers in the videos, followed by graphic organizers and peer-tutoring, which were used at 27% and 10% respectively. Reading comprehension strategies, mnemonics, and inquiry based learning were not used at all by the sampling of teacher videos viewed. The findings from the teacher interviews (the second major theme) was the lack of knowledge to choose and implement best practices for students with disabilities. The participants interviewed stated that they knew of evidence-based practices, but were uncomfortable choosing and implementing an evidence-based practice for a student with a disability in his or her class. Also, when asked what evidence-based interventions do you use the most for students with disabilities in your class, a few of the teachers responded by listing accommodations or modifications, such as reading tests aloud, enlarging text, and sending the student down to the special education teacher to take tests.

The findings from this research study supports earlier research findings that general education teachers lack the knowledge and skills to implement highly effective evidence-based interventions for students with disabilities taught in an inclusive setting (Grima-Farrell, Bain, & McDonagh, 2011; Scanlon & Baker, 2012). Grima-Farrell, Bain, and McDonagh (2011) found

that the research to practice gap contributes to the lack of evidence-based practices being used in general education classrooms. Similarly, Scalon and Baker (2012) found that general education teachers did not feel that they have the knowledge and skills to make accommodations to instruction that meet the requirements of a student's Individual Education Plan (IEP). Additionally, when general education teachers had low self-efficacy, they were less likely to implement effective evidence-based practices to improve academic achievement. Nevertheless, the research also found that general education teachers' self-efficacy can be increased by attending continuing education courses or by attending in-services (Scanlon & Baker, 2012).

To get general education teachers to use the most highly effective evidence-based practices when working with students with disabilities, additional professional development and in-services are needed. Teachers need to know what are evidence-practices, which practices are considered highly effective, how to determine which interventions to use, how to monitor the effectiveness of a teaching intervention, and how to use these best practices. They need time to practice these teaching strategies and receive feedback to increase their self-efficacy (Bandura, 1977). Schools need to hire instructional coaches and mentors to support these teachers in the classroom, and to sustain the use of best practices by general education teachers. Instructional coaches and mentors can model lessons for the teacher, demonstrate ways to monitor the effectiveness of an intervention, and help bridge the research to practice gap by showing teachers the different resources that are available to help them determine if a teaching practice is evidence-based. Ideally, the instructional coaches and mentors would be of higher intellect then the teachers that they are supporting to enhance learning (Vygotsky, 1978; Vygotsky, 1986).

Additional findings from the teacher interviews in this study were that general education teachers lack of time and resources (the first theme) are barriers to using more evidence-based

practices. Prior research indicated that it takes, on average, 60 minutes to adapt the curriculum for students with disabilities (Kurth & Keegan, 2014). Therefore, if there are only a few students in a general education class with disabilities, adaptations for the students with disabilities is not usually rendered, based on the notion that the time spent modifying the content for the students with disabilities takes precious time away from working with the rest of the class (Gable, Tonelson, Sheth, Wilson, & Park, 2012; Jordan, Schwartz, & McGhie-Richmond, 2009; McLeskey & Walsron, 2011; Scanlon & Baker, 2012; Wells, 2009). The findings from this research study and prior research studies support the recommendation for co-taught classes to make better use of teachers' time and resources.

Recommendations for Future Research

Further investigation and research is recommended on the use of evidence-based practices in general education classrooms for students with disabilities using a larger sampling of general education teachers to increase the reliability and validity of the findings. Future research is recommended to determine if the use of highly effective evidence-based practices for students with disabilities has increased in inclusive classroom settings since the recording of the teacher videos for the MET longitudinal study. Further investigation is needed with current observational data on the use of highly effective evidence-based practices by general education teachers that have a student with a disability in class, since the teacher videos from the MET study were recorded from 2009 to 2011, and may not reflect current practices. It is also recommended that these same teachers that are observed, also be asked to participate in post observation teacher interviews. Conducting an interview after observing a teacher in the classroom would eliminate speculation about why an evidence-based practice was or was not used during the lesson. The teacher can explain why a certain teaching strategy was used.

Further investigation is also recommended on the number of hours of trainings, in-services, and continuing education that general education teachers received on effective evidence-based practices in the past five years, since these amounts impact whether or not the teacher will apply what was learned (Bandura, 1977; Kosko & Wilkins, 2009). Finally, further investigation and research should be conducted on the fidelity of implementing evidence-based practices after attending trainings, in-services, or professional development, as it relates to Bandura's Social Learning Theory, and Vygotsky's Sociocultural Learning Theory.

Conclusions

The qualitative study explored general education teacher use of highly effective evidence-based practices to improve academic achievement and social skills for students with disabilities in the classroom, the frequency in which these best practices were used, and barriers that prevented the use of best practices. The researcher obtained data on general education teacher use of six highly effective evidence-based practices that improve academic achievement for students with disabilities from viewing recorded teacher videos from the MET Longitudinal study and from teacher interviews. The results of this research study are likely generalizable for two reasons; first, the MET longitudinal study (N = 1,868), was a large study whose participants were from multiple school districts within six major cities across the United States of America. The sampling from the MET longitudinal study was pseudo randomly selected to avoid bias and to obtain an accurate representation of participants' teaching practices. Second, the teachers interviewed were from different regions throughout the United States of America, and taught at different grade levels, as well as in different disciplines, such as music, physical education, science, gifted, social studies, and a foreign language teacher. Henceforth, gathering data from teachers that taught at different grade levels, in different disciplines, and in different states,

provided a diverse representation of teachers in the study. Furthermore, the diversity among the participants demonstrated differences in socioeconomic status, cultural beliefs, and regional trends that enhance the generalizability of the findings from this study.

Videotaped teacher lessons from the MET longitudinal study were scored using metrics that assessed the presence or absence of the six most effective evidence-based interventions, and the frequency in which each teacher used these interventions. The findings from the study indicated that general education teachers from the MET Longitudinal study only used three of the six highly effective evidence-based practices. Explicit instruction was used by 90% of the teachers, followed by graphic organizers used by 27% of the teachers, and peer-tutoring used by only 10% of the teachers. On the contrary, all six highly effective evidence-based practices were used by the teachers interviewed. Explicit instruction and peer-tutoring were used by 100% of the teachers interviewed, reading comprehension strategies were used by 94% of the teachers, inquiry based learning was used by 83% of the teachers, and graphic organizers were used by 77% of the teachers interviewed. Furthermore, the in-depth teacher interviews brought forth rationales, justifications, and personal experiences, thus providing the researcher with a better understanding of chosen behaviors, as well as insight on the frequency that these highly effective evidence-based practices were used. The qualitative interviews, even with a smaller number of participants, augmented the data from the MET videos by imparting a deeper and richer understanding of the daily challenges the participants face (Moustakas, 1994; Patton, 2012; Shank, 2006).

The in-depth interviews provided insight as to why certain best practices were used or not used, and barriers that prevented or limited the use of highly effective evidence-based practices (Moustakas, 1994; Patton, 2012). The most frequently cited barriers or issues cited by the

teachers interviewed that interfered with the implementation of the most effective evidence-based practices were time, money, and materials, although numerous themes emerged. Lack of time was amalgamated with shared planning time with colleagues, the special education teacher or co-teacher, time to grade papers, provide more in depth feedback to students, along with time to develop relationships with students. Teachers that stated that they lacked money, upon further probing needed more money to meet the wide range of student abilities and needs in an inclusive classroom setting. Additional funding was needed to differentiate learning, purchase specialized equipment for students physical, verbal, and academic needs, to gain access to evidence-based practices, and for additional professional development for the teacher and the instructional aides. Thus, lack of materials was intertwined with the lack of money. Lack of knowledge was the next theme that arose. The participants stated that they knew evidence-based practices when it came to students without disabilities, but were uncomfortable choosing and implementing an evidence-based practice for a student with a disability in their class. All participants felt as if they could always learn more and embraced attending additional professional development. The third major theme was that commonly cited reasons for not using evidence-based practices in the past were no longer a concern for general education teachers. Teachers articulated that teaching to the test was exemplary practice, and the most recent high stakes tests are aligned with the Common Core State Standards. Teachers verbalized that the expectations are to teach the Common Core State Standards to promote college and career readiness for all students. The last reason cited as a barrier to implementing evidence-based practices was the need for additional training to manage students' behavior. Finally, 15 teachers proudly discussed their autonomy to use their professional judgement to decide the sequence to teach grade level curriculum, methodology, pacing, and the flexibility to not cover all of the curriculum in lieu of content mastery. These 15

teachers attributed their autonomy to having supportive administrators, and that any pressure they felt that was related to student outcomes were self-imposed.

The limitations of the study were the small number of participants for the teacher interviews, and that the teachers from the MET longitudinal study could not be contacted in any way. The results of this qualitative research study will help general education teachers to use highly effective evidence-based practices more frequently, remove barriers that interfere with the use of best practices, and provide the teachers with the resources needed to implement best practices. Practical steps that school districts can take to help general education teachers use more highly effective evidence-based practices would be to start by making teachers aware of what are currently considered and what are not considered best teaching practices in an inclusive setting. Introducing this information and showing teachers how to access resources to meet their educational needs empowers them to take responsibility, ownership, and promotes autonomy to choose which evidence-based practices to use. School districts need to provide a minimum of eight hours of training and professional development on the use of evidence-based practices that improve academic achievement for students with disabilities, and help them to apply what they learned by investing in instructional coaches and mentors. School districts need to also look at changing teaching schedules to allow for shared planning time, and explore ways to make better use of current resources, such as having special education teachers co-teach to address the lack of time, lack of knowledge, and lack of resources.

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Appendices

Appendix A: Evidence-Based Practice Checklist

The Evidence-Based Practices Checklist

Teacher_____ **Grade**_____

Date_____ **Topic**_____

Indicate if the classroom teacher used each of the **evidence-based practices** in the video by placing a "**Y**" for yes and an "**N**" for no the **Used** column. If the **evidence-based practice** was used, rate how well the teacher implemented the evidence-based practice by place a check mark ✓in the **Basic**, **Proficient**, or **Distinguished** column. Use the following as a guide:

Basic-The evidence-based practice is used. Most of the students understand what they are expected to do. The teacher is not able to extend the learning.

Proficient-The evidence-based practice is implemented successfully. The students understand what they are expected to do. The teacher is able to switch gears or go to plan B if difficulty arises.

Distinguished-The evidence-based practice is implemented smoothly and successfully. The students clearly understand what they are expected to do and are doing it. The teacher is able to extend the learning.

Evidence-Based Practice	**Used (Y/N)**	**Basic**	**Proficient**	**Distinguished**
Explicit instruction				
Graphic organizers				
Inquiry based learning				
Mnemonics				

Peer tutoring				
Reading comprehension strategy				

Appendix B: Definitions of Evidence-Based Practices on Checklist

Definition of Evidence-based Practices

Explicit instruction: direct instruction that begins with overtly stating the student learning targets, step-by-step instruction, and taught rules to follow. Content is broken down into small chunks and each chunk is followed by guided practice, feedback, and independent practice until the learning target is met (Copeland & Cosbey, 2009; Scruggs, Mastropieri, Berkeley, & Graetz, 2010).

Graphic organizers: visual diagram used to sort, classify, compare, or organize information. Shapes are used to indicate concepts, lines and arrows show connections between concepts or effects. Outlines and story maps are also considered graphic organizers. Graphic organizers can be used to learn vocabulary, to pull information from a text, to activate prior knowledge, to demonstrate cause and effect, or as a pre-writing tool to organize information (Kim, Vaughn, Wanzek, & Wei, 2004; Scruggs, Mastropieri, Berkeley, & Graetz, 2010).

Inquiry based learning: a hands-on approach to learning that is student centered, where learning occurs by discovery, or a teacher-guided approach where students generate a hypothesis, design an experiment, collect data, analyze the evidence, and draw conclusions about the hypothesis that is based on the evidence. This approach is traditionally used to teach concepts in science (Therrien, Taylor, Watt, & Kalenberg, 2013).

Mnemonic strategy: the use of acronyms, key words, pictures, acoustics, or sentences to remember information, and/or sequences. Examples include, but are not limited to the following:

- ROYGB (color spectrum) red, orange, yellow, green, and blue
- I before e, except after c (spelling)

- FOIL (math sequence to solve binomial equations) first, outside, inside, last
- Please excuse my dear aunt Sally (math order of operations) parenthesis, exponents, multiplication, division, addition, subtraction
- One–bun, two- shoe, three-tree (Wolgemuth, Cobb, & Alwell, 2008)

Peer tutoring: students are taught to work with a classmate that is having difficulty learning a concept and help the other student to increase his/her understanding of information. Peer tutoring can be used to reinforce behavior, to model behavior, to assess learning, or to assist a classmate with learning strategies. Peer tutoring can be implemented class wide, in cooperative groups, and across grade levels. Peer tutoring is also referred to as peer-mediated instruction. Reciprocal teaching is another type of peer tutoring where the students take turns being the tutor and the tutee (Rafdal, McMaster, McConnell, & Fuchs, 2011; Ryan, Reid, & Epstein, 2004).

Reading comprehension strategy: a specific sequence of steps used to decode, read, and understand information in text. Examples include, but are not limited to the following:

- activate prior knowledge of topic by brainstorming and answering who, what, where, why, and when questions before reading
- previewing chapters, headings, subheadings, pictures, and graphics
- change headings and subheadings into questions, then answer the questions as he/she reads each section
- read the questions at the end of a passage before reading the passage, then focus on answering the questions as he/she reads (Berekeley, Mastropieri, & Scruggs, 2011).

Appendix C: Interview Questions for Teachers Use and Non-Use of Best Practices

Herron Interview Recording Document for Use or Non-Use of Best Practices

Teacher number_____ **Grade**_____

Date_____ **Topic**_____

Placing a check mark ✓ in the **Yes** or the **No** column next to the participant's respond to questions about the use of the six most effective evidence-based interventions to improve academic achievement for students with high incident disabilities. Record the reasons given for not using each for the interventions by checking the prepopulated column that contains a common reason for not using evidence-based interventions. If the participant indicates the use of the evidence-based practices, have the participant indicate the frequency in which the intervention is used from the five point Likert Scale. Once a week 1, twice a week 2, three times a week 3, four times a week 4, five times a week 5.

Any other responses should be recorded in the "other" column. If the participant does not know what the intervention is, provide the participant with an example of the intervention.

Evidence-Based Practice	Use Y/N	Teach to the test	Required to follow a scripted curriculum	Need to cover the curriculum	Students do well on high stakes tests	Lack of knowledgeable about evidence-based interventions for students with disabilities	Lack the resources to implement best practices	Frequency	Other
Explicit instruction									

Graphic organizers									
Inquiry based learning									
Mnemonics									
Peer tutoring									

Reading comprehension strategy									

1. Do you have a student with a disability in your class?
2. What experience do you have in the use of evidence-based interventions for students with disabilities?
3. What evidence-based interventions do you use in your classroom?
4. Based on this Likert Scale, how often do you use each intervention?
5. How do you determine what evidence-based intervention to use in your classroom?
6. Do you use explicit instruction, graphic organizers, inquiry based learning, mnemonics, peer-tutoring, or reading comprehension strategies?
7. Tell me more why you use some of these evidence-based interventions in your classroom but not all.
8. Tell me more about why you do not use some of these evidence-based interventions more often in your classroom.
9. What is currently preventing you from implementing the most effective evidence-best interventions?
10. Are there any additional reasons that keep you from using the most effective evidence-based interventions?
11. Additional justifications stated for not being able to implement best practices.

12. What would it take for you to be able to implement the six most effective evidence-based interventions for students with disabilities?

Appendix D: Informed Consent Form

Introduction:

My name is Julia Herron. I am a Doctoral student at Northcentral University in Arizona. I am conducting a research study on the use of the most effective evidence-based interventions used by general education teachers to improve academic achievement for students with disabilities. I am completing this research as part of my doctoral degree. I invite you to participate.

Activities:

If you participate in this research, you will be asked to:

1. Use technology such as Skype to meet online for a face to face interview to discuss your use of the most effective evidence-based interventions that improve academic achievement for students with disabilities, and factors that prevent you from using the most effective evidence-based interventions to improve academic achievement for students with disabilities. The interview will take approximately 30 minutes to complete.

Eligibility:

You are eligible to participate in this research if you:

1. Are a general education teacher that has a student with a disability in your class.

You are not eligible to participate in this research if you:

1. Are not a general education teacher.
2. Do not have a student with a disability in your class.

I hope to include 30 participants in this research.

Risks:

There are minimal risks in this study. Some possible risks include: Being identified as not using the most effective evidence-based interventions to improve academic achievement for students with disabilities in your class.

To decrease the impact of these risks, you can: stop participation at any time, and/or, refuse to answer any interview question.

Benefits:

If you decide to participate, there are no direct benefits to you.

The potential benefits to others are: to identify reasons why general education teachers are not able to implement the most effective evidence-based interventions to improve academic achievement for students with disabilities. To remove barrier that prevent the use of the most effective evidence-based practices, and to provide the resources necessary for general education teachers to implement the most effective evidence-based interventions to improve academic achievement for students with disabilities.

Confidentiality:

The information you provide will be kept confidential to the extent allowable by law. Some steps I will take to keep your identity confidential are: a fake name or number to identify you, and I will not ask for your name.

The people who will have access to your information are: myself, my dissertation chair, and my dissertation committee.

I will secure your information with these steps: locking it in a filing cabinet, and locking the computer file with a password.

I will keep your data for 7 years. Then, I will delete electronic data and destroy paper data.

Contact Information:

If you have questions for me, you can contact me at: J.Herron8247@email.ncu.edu. 715-207-8284.

My dissertation chair's name is Dr. Patrick McNamara. He works at Northcentral University and is supervising me on the research. You can contact him at: pmcnamara@ncu.edu. 888-327-2877

If you have questions about your rights in the research, or if a problem has occurred, or if you are injured during your participation, please contact the Institutional Review Board at: irb@ncu.edu or 1-888-327-2877 ext 8014.

Voluntary Participation:

Your participation is voluntary. If you decide not to participate, or if you stop participation after you start, there will be no penalty to you. You will not lose any benefit to which you are otherwise entitled.

If you are interested in participating in the research study, complete the audiotaping and signature sections below and email your completed consent form to me at J.Herron8247@email.ncu.edu. If you need assistance returning your signed consent for, please contact me using by email at J.Herron8247@email.ncu.edu or by phone at 715-207-8284.

Audiotaping:

I would like to use a voice recorder to record your responses. You can still participate if you do not wish to be recorded.

Please sign here if I can record you:_____

Signature:

A signature indicates your understanding of this consent form. You will be given a copy of the form for your information.

_____

Participant Signature Printed Name Date

_____

Researcher Signature Printed Name Date

Appendix E: Data Use Agreement

Agreement for the Use of Confidential Data
from the
Measures of Effective Teaching Longitudinal Database
at the
Inter-university Consortium for Political and Social Research (ICPSR)

I. DEFINITIONS

A. "Investigator" is the person primarily responsible for analysis and other use of Confidential Data obtained through this Agreement.

B. "Research Staff" are persons authorized by the Investigator's institution, excluding the Investigator, who will have access to Confidential Data obtained through this Agreement. Research Staff include project staff or students conducting dissertation or thesis research.

C. "Participants" are persons, other than Investigator and Research Staff, who will be provided access to Confidential Data by the Investigator. For example, research subjects who will view videos included in the Confidential Data as part of an IRB approved research protocol are Participants for this agreement. Institution is responsible for ensuring Participant compliance with all aspects of this agreement.

D. "Institution" is the university or research institution at which the Investigator will conduct research using Confidential Data obtained through this Agreement.

E. "Representative of the Institution" is a person authorized to enter into contractual agreements on behalf of Investigator's Institution.

F. "Confidential Data" consist of data, images, videos and any objects derived from them with information that is linkable to a specific individual either directly or indirectly, and for which the individual (whether a person or organization) has the expectation that the information will not be released in a manner allowing public identification of the individual or causing some harm to the individual.

G. "Private Person" means any individual (including an individual acting in his official capacity) and any private (i.e., non-government) partnership, corporation, association, organization, or entity (or any combination thereof), including family, household, school, neighborhood, health service, or institution.

H. "ICPSR" is the Inter-University Consortium of Political and Social Research.

I. "Restricted Data Contracting System" ("RDCS") is the web-based system for data contracts at ICPSR.

J. "Data Security Plan" is a component of this Agreement, found as Attachment A, which specifies permissible computer configurations for use of Confidential Data through Investigator responses to a series of questions, and records what the Investigator commits to do in order to keep Confidential Data secure.

K. “Deductive Disclosure” is the discerning of an individual's identity or confidential information through the use of known characteristics of that individual. Disclosure risk is present if an unacceptably narrow estimation of an individual’s confidential information is possible or if determining the exact attributes of the individual is possible with a high level of confidence.

L. “Derivative” is a file, video, image, or statistic derived from the Confidential Data that poses disclosure risk to any Private Person in the Confidential Data obtained through this Agreement. Derivatives include copies of the Confidential Data received from ICPSR, subsets of the Confidential Data, and analysis results that do not conform to the guidelines in Section VI.G.

II. DESCRIPTION OF DISCLOSURE

Deductive disclosure of an individual's identity from research material is a major concern of federal agencies, researchers, and Institutional Review Boards. If a person is known to have participated in ANY study or if information is known to be included in files or a database from which the Confidential Data were obtained, then a combination of his or her personal characteristics may allow someone to determine which record corresponds to that individual. Investigators and Institutions who receive any portion of Confidential Data are obligated to protect the individual’s confidential information from deductive disclosure risk by strictly adhering to the obligations set forth in this Agreement and otherwise taking precautions to protect the Confidential Data from non-authorized use.

III. REQUIREMENTS OF INVESTIGATORS

A. Investigators must meet the following criteria:

1. Have a PhD or other terminal degree; and

2. Hold a faculty appointment or research position at Institution.

B. The Investigator assumes the responsibility of completing the RDCS online application and required documents, reports, and amendments. The Investigator agrees to responsibly manage and use Confidential Data and implement all Confidentiality Data security procedures per the Data Security Plan.

C. The Investigator will provide ICPSR any publications or public presentations derived from the Confidential Data.

IV. REQUIREMENTS OF INSTITUTION

The Institution must meet the following criteria:

A. Be an institution of higher education, a research organization, a research arm of a government agency, or a nongovernmental, not for profit, agency.

B. Have a demonstrated record of using Confidential Data according to commonly accepted standards of research ethics and applicable statutory requirements.

V. OBLIGATIONS OF ICPSR

In consideration of the promises made in Section VI of this Agreement, ICPSR agrees to:

A. Provide access to the Confidential Data requested by the Investigator in the Confidential Data Order within a reasonable time of execution of this Agreement by appropriate ICPSR officials. Quantitative Confidential Data will be made available via the Virtual Data Enclave, a secure remote-access work space. Video files and accompanying metadata will be made available via the MET LDB online secure streaming system. Access to both requires proper authentication. ICPSR will provide instructions on establishing user accounts within a reasonable amount of time after the execution of the agreement.

B. Provide electronic documentation of the origins, form, and general content of the Confidential Data, in the same time period and manner as the Confidential Data.

ICPSR MAKES NO REPRESENTATIONS NOR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE USE OF THE CONFIDENTIAL DATA WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER PROPRIETARY RIGHTS. Unless prohibited by law, Investigator and Institution assume all liability for claims for damages against them by third parties that may arise from the use or disclosure of the Confidential Data.

VI. OBLIGATIONS OF INVESTIGATOR, RESEARCH STAFF, AND INSTITUTION
Confidential Data provided under this Agreement shall be accessed by the Investigator, Research Staff, Participants, and Institution in strictest confidence and can be disclosed only in compliance with the terms of this Agreement. In consideration of the promises in Section V of this Agreement, and for use of Confidential Data from ICPSR, the Investigator, Research Staff, Participants, and Institution agree:

A. That the Confidential Data will be used solely for research or statistical purposes relative to the research project identified on the Application for Obtaining Confidential Data accompanying this Agreement, and for no other purpose whatsoever without the prior consent of ICPSR. Further, no attempt will be made to identify private persons, no Confidential Data of private person(s) will be published or otherwise distributed, and Confidential Data will be protected against deductive disclosure risk by strictly adhering to the obligations set forth in this Agreement and otherwise taking precautions to protect the Confidential Data from nonauthorized use.

B. To supply ICPSR with a completed RDCS online Application for Obtaining Confidential Data that will include the following:

1. A signed Agreement

2. A Research Plan describing inquiry and publications consistent with the objectives of the Measuring Effective Teaching Project to advance knowledge about effective teachers and teaching.

3. Confidential Data Order Summary specifying which files and documentation are requested

4. A copy of a document signed by the Institution's Institutional Review Board (IRB) approving or exempting the research project

C. To comply fully with the approved Data Security Plan at all times relevant to this Agreement.

D. That no persons other than those identified in this Agreement or in subsequent amendments to this Agreement, as Investigator, Research Staff or Participant and who have executed this Agreement, be permitted access to the contents of Confidential Data files or any files derived from Confidential Data files.

E. To not disclose or otherwise make available to current and former employees of the Charlotte-Mecklenburg Schools, Dallas Independent School District, Denver Public Schools, Hillsborough County Public Schools, Memphis City Schools, and New York City Department of Education ("School Districts") any Confidential Data derived from the School District for which they are a current or former employee. Investigators, Research Staff, and Participants must disclose to ICPSR any current or past affiliations with the School Districts.

F. That within one (1) business day of becoming aware of any unauthorized access, use, or disclosure of Confidential Data, or access, use, or disclosure of Confidential Data that is inconsistent with the terms and conditions of this Agreement, the unauthorized or inconsistent access, use, or disclosure of Confidential Data will be reported in writing to ICPSR.

G. That, unless prior specific approval is received from ICPSR, no attempt under any circumstances will be made to link the Confidential Data to any individual, whether living or deceased, or with any other dataset, including other datasets provided by ICPSR.

H. To avoid inadvertent disclosure of private persons by being knowledgeable about what factors constitute disclosure risk and by using disclosure risk guidelines, such as but not limited to, the following guidelines in the release of statistics or other content derived from the Confidential Data.[1]

1. No release of a sample unique for which only one record in the Confidential Data obtained through sampling (e.g., not a census) provides a certain combination of values from key variables. For example, in no table should all cases in any row or column be found in a single cell.

2. No release of a sample rare for which only a small number of records (e.g., 3, 5, or 10 depending on sample characteristics) in the Confidential Data provide a certain combination of values from key variables. For example, in no instance should the cell frequency of a crosstabulation, a total for a row or column of a cross-tabulation, or a quantity figure be fewer than the appropriate threshold as determined from the sample characteristics. In general, assess empty cells and full cells for disclosure risk stemming from sampled records of a defined group reporting the same characteristics.

3. No release of a population unique for which only one record in the Confidential Data that represents the entire population (e.g., from a census) provides a certain combination of values from key variables. For example, in no table should all cases in any row or column be found in a single cell.

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[1] For more information, see the U.S. Bureau of the Census checklist. Supporting Document Checklist on Disclosure Potential of Data, at www.census.gov/srd/sdc/S14-1_v1.3_Checklist.doc; NCHS Disclosure Potential Checklist at http://www.cdc.gov/nchs/data/NCHS%20MicroData%20Release%20Policy%204-02A.pdf; and FCSM Statistical Policy Working Paper 22 (Second Version, 2005) at http://www.fcsm.gov/working-papers/SPWP22_rev.pdf.

4. No release of the statistic if the total, mean, or average is based on fewer cases than the appropriate threshold as determined from the sample characteristics.

5. No release of the statistic if the contribution of a few observations dominates the estimate of a particular cell. For example, in no instance should the quantity figures be released if one case contributes more than 60 percent of the quantity amount.

6. No release of data that permits disclosure when used in combination with other known data. For example, unique values or counts below the appropriate threshold for key variables in the Confidential Data that are continuous and link to other data from ICPSR or elsewhere.

7. No release of minimum and maximum values of identifiable characteristics (e.g., income, age, household size, etc.) or reporting of values in the "tails," e.g., the 5th or 95th percentile, from a variable(s) representing highly skewed populations.

8. Release only weighted results if specified in the data documentation.

9. No release of ANOVAs and regression equations when the analytic model that includes categorical covariates is saturated or nearly saturated. In general, variables in analytic models should conform to disclosure rules for descriptive statistics (e.g., see #7 above) and appropriate weights should be applied.

10. In no instance should data on an identifiable case, or any of the kinds of data listed in preceding items 1-9, be derivable through subtraction or other calculation from the combination of tables released.

11. No release of sample population information or characteristics in greater detail than released or published by the researchers who collected the Confidential Data. This includes but is not limited to publication of maps.

12. No release of anecdotal information about a specific private person(s) or case study without prior approval.

13. The above guidelines also apply to charts as they are graphical representations of crosstabulations. In addition, graphical outputs (e.g., scatterplots, box plots, plots of residuals) should adhere to the above guidelines.

I. To mitigate the risk of disclosing identities or private information derived from the Confidential Information by following practices that include, but are not limited to the following:

1. No streaming video from the Confidential Data may be captured on any computer or other medium.

2. No excerpts, images or other derivatives from the Confidential Data may be published or disseminated in any way.

3. No descriptions of individuals, activities, environments, or other aspects of the Confidential Data may be released in a way that would lead to identification of individuals. Information about objects in the Confidential Data (such as school, grade, subject) may not be included in presentations or publications if they may increase the risk of disclosure. Special care should be used in describing attributes of individuals that in combination might uniquely identify an

individual, such as school, grade, age, race, gender, “gifted,” “special education,” “English language learner,” or physical attributes (height, weight, hair color, etc.).

4. No anecdotal descriptions or verbatim transcripts may be released if they can be linked to information that increases the risk of identification of individuals.

5. No information from quantitative and video objects in the Confidential Data may be linked for the purpose of identifying individuals.

6. No identifying information revealed by individuals depicted in the Confidential Data may be recorded in any way. For example, names of persons, places, or events written on blackboards or spoken by an individual may not be written on paper or typed into a computer document. This type of information may never be released in public presentations or publications. If there is any doubt about whether a research note may pose a disclosure risk, it should be created within the Virtual Data Enclave.

J. That if the identity of any private person should be discovered, then:

1. No use will be made of this knowledge;

2. ICPSR will be advised of the incident within five (5) business days of discovery of the incident;

3. The information that would identify the private person will be safeguarded or destroyed as requested by ICPSR; and

4. No one else will be informed of the discovered identity.

K. Unless other provisions have been made with ICPSR, all access to the Confidential Data will be terminated on or before completion of this Agreement or within five (5) days of written notice from ICPSR. Investigators requiring access to the Confidential Data beyond completion of this Agreement should submit a request for continuation three months prior to the end date of the Agreement.

L. To ensure that the Confidential Data are managed and used in compliance with the terms and conditions of this Agreement and with all applicable statutes and regulations. Noncompliance with this Agreement by any Research Staff or Participant hereto shall be deemed noncompliance and a breach by Investigator and Institution for purposes of section VII below.

M. To notify ICPSR of a change in institutional affiliation of the Investigator. Notification must be in writing and must be received by ICPSR at least six (6) weeks prior to Investigator’s last day of employment with Institution. Investigator’s separation from Institution terminates this Agreement. Investigator may reapply for access to Confidential Data as an employee of the new institution. Re-application requires:

1. Execution of a new Agreement for the Use of Confidential Data by both the Investigator and the proposed new institution;

2. Execution of any Supplemental Agreement(s) with Research Staff and Pledges of Confidentiality by Research Staff and Participants at the proposed new institution;

3. Preparation and approval of a new Data Security Plan; and

4. Evidence of approval or exemption by the proposed new institution's IRB.

These materials must be approved by ICPSR before Confidential Data or any derivatives or analyses may be accessed at the new institution.

N. That if the Investigator who is changing institutions does not have the new agreement executed by the time they leave their institution, ICPSR will temporarily deactivate the Investigator's account but will maintain the Investigator's profile to save their work during the transition. Upon approval of the new RDCS online application, ICPSR will reactivate the Investigator's account. If a new agreement is not executed within three (3) month, the Investigator's account will be deleted.

O. That any books, articles, conference papers, theses, dissertations, reports, or other publications that employed the Confidential Data or other resources provided by ICPSR reference the bibliographic citation provided by ICPSR in the study description.

P. That use of the Confidential Data will be consistent with the Institution's policies regarding scientific integrity and human subjects research.

Q. To respond fully and in writing within ten (10) working days after receipt of any written inquiry from ICPSR regarding compliance with this Agreement.

VII. VIOLATIONS OF THIS AGREEMENT

A. The Institution will treat allegations by ICPSR or other parties of violations of this Agreement as allegations of violations of its policies and procedures on scientific integrity and misconduct. If the allegations are confirmed, the Institution will treat the violations as it would violations of the explicit terms of its policies on scientific integrity and misconduct.

B. In the event Investigator or Institution breaches any provision of this Agreement, they shall be jointly and severally responsible to promptly cure the breach and mitigate any damages. Investigator and Institution hereby acknowledge that any breach of the confidentiality provisions herein may result in irreparable harm to ICPSR not adequately compensable by money damages. Investigator and Institution hereby acknowledge the possibility of injunctive relief in the event of breach, in addition to money damages. In addition, ICPSR may:

1. Terminate this Agreement upon notice and terminate access to the Confidential Data and any derivatives thereof;

2. Deny Investigator future access to Confidential Data; and/or

3. Report the inappropriate use or disclosure to the appropriate federal and private agencies or foundations that fund scientific and public policy research.

C. Institution agrees, to the extent permitted under the law, to indemnify, defend, and hold harmless The University of Michigan, ICPSR, RAND Corporation, Bill & Melinda Gates Foundation, and the sources of Confidential Data from any or all claims and losses accruing to any person, organization, or other legal entity as a result of Investigator's, Research Staff's, Participant's, and/or Institution's acts, omissions, or breaches of this Agreement.

VIII. CONFIDENTIALITY

The Institution is considered to be a contractor or cooperating agency of ICPSR; as such, the Institution, the Investigator, and Research Staff are authorized to protect the privacy of the individuals who are the subjects of the Confidential Data by withholding their identifying characteristics from all persons not connected with the conduct of the Investigator's research project. Identifying characteristics are considered to include those data defined as confidential under the terms of this Agreement.

IX. INCORPORATION BY REFERENCE

All parties agree that the following documents are incorporated into this Agreement by reference:

A. The Application for Obtaining Confidential Data

B. A copy of the Institution's IRB approval or exemption of the Research Project

C. The Data Security Plan proposed by the Investigator and approved by ICPSR

X. MISCELLANEOUS

A. All notices, contractual correspondence, and return of data under this Agreement on behalf of the Investigator shall be made in writing and delivered to the address below:

MET Longitudinal Database Restricted Data Manager
ICPSR
P.O. Box 1248
Ann Arbor, MI 48106-1248

B. This agreement shall be effective for 24 months from execution.

C. The respective rights and obligations of ICPSR and Investigator, Research Staff, and Institution pursuant to this Agreement shall survive termination of the Agreement.

D. This Agreement may be amended or modified only by the mutual written consent of the authorized representatives of ICPSR and Investigator and Institution. Investigator's research project, Data Security Plan, Research Staff, or Participants may be amended or modified only by submitting such amendments or modifications to the RDCS and receiving approval from the authorized representatives of ICPSR. This Agreement may be extended only by submitting an extension request to the RDCS and receiving approval from the authorized representatives of ICPSR. Investigator and Institution agree to amend this Agreement to the extent necessary for ICPSR to comply with the requirements of any applicable regulatory authority.

E. The persons signing this Agreement have the right and authority to execute this Agreement, and no further approvals are necessary to create a binding agreement.

F. The obligations of Investigator, Research Staff, Participants, and Institution set forth within this Agreement may not be assigned or otherwise transferred without the express written consent of ICPSR.

Investigator and Institutional Signatures

Investigator	Institutional Representative
Patrick McNamara SIGNATURE	 SIGNATURE
4/11/2016 DATE	4/11/2016 DATE
Patrick McNamara Ph.D NAME TYPED OR PRINTED	John LaNear NAME TYPED OR PRINTED
Professor and Dissertation Chair, School of Business and Technology Management TITLE	Sr. Vice President, Academic Affairs TITLE
Northcentral University INSTITUTION	Northcentral University INSTITUTION
10000 University Drive BUILDING ADDRESS	 BUILDING ADDRESS
 STREET ADDRESS	2488 Historic Decatur Rd., Ste. 100 STREET ADDRESS
Prescott Valley, Arizona 86314 CITY, STATE, ZIP	San Diego, CA 92106 CITY, STATE, ZIP

Representative of The Regents of the University of Michigan

SIGNATURE DATE

PRINTED NAME AND TITLE

Julia Herron
Julia Herron
Doctoral Candidate
Northcentral University
Prescott Valley, A.Z. 86314

Attachment A: Data Security Plan

All of the following computer and data security requirements and procedures are required to be implemented as part of this Agreement:

- You must password protect the computer that is used to access the MET Longitudinal Database.
- Under no circumstances may you share or give your MET Longitudinal Database username and password to anyone, and this includes not sharing them with other members of your project team or your organization's IT staff. Passwords must not be stored on a computer in electronic or written form. Software password storage programs may not be used.
- Since the MET Longitudinal Database is administered by ICPSR, University of Michigan you should not contact the IT staff at your organization with questions about the MET Longitudinal Database. (You may contact your organization's IT staff if you need help installing the VM client software to access the MET Longitudinal Database. Your organization's IT staff should never be allowed to access the MET Longitudinal Database or any Confidential Data.)
- Under no circumstances can any unauthorized person be allowed to access or view Confidential Data within the MET Longitudinal Database.
- Unauthorized persons are not allowed to be inside the Secure Project Office when an authorized project team member is logged into the MET Longitudinal Database.
- You must not allow the computer monitor to display MET Longitudinal Database content to any unauthorized person. The computer monitor display screen must not be visible from open doors or through windows.
- You must set the computer to activate a password protected screen saver after three minutes of inactivity.
- If you are logged into the MET Longitudinal Database and you leave your computer, you must "disconnect" or "logoff" from the MET Longitudinal Database. (Disconnecting from the MET Longitudinal Database will leave any open programs running, but closes the connection to the MET Longitudinal Database. Logging off of the MET Longitudinal Database closes the connection and terminates all programs that are running.)
- All Confidential Data must be kept within the MET Longitudinal Database:
    - You must not duplicate or copy the data (e.g., you must not retype and/or use non-technical ways of copying the data, such as handwritten notes).
    - You must not take screenshots, photographs, or video of the displayed Confidential Data or statistical outputs.
    - You must not type or record the Confidential Data or results from the data onto your PC or onto some other device or media.
- You must protect all hardcopy documents related to the Confidential Data such as research notes. Such hardcopy documents must be kept in locked drawers or cabinets when not in use.
- Prior to a disclosure review and approval by ICPSR, neither you nor any project team member may talk about or discuss any Confidential Data or results from the MET Longitudinal Database in non-secure or public locations. These discussions cannot occur where an unauthorized person could eavesdrop.

• You must submit all statistical outputs/results from the MET Longitudinal Database to ICPSR for a disclosure review prior to sharing or giving such outputs to unauthorized persons. You also agree to revise or alter such outputs as required by ICPSR in order to minimize disclosure risk prior to ICPSR approving these outputs for dissemination to unauthorized persons.
• You may only disseminate aggregated information from the Confidential Data to unauthorized persons after you obtain clearance to do so through the ICPSR disclosure review process.
• Each member of your research team included in this application must only use the data on a computer in a Secure Project Office.
• When the data are being used:
    - the screen must not be visible from the doorway or windows
    - the door must be closed
    - only individuals approved to work with these data may be in the room.

When the data are active but the individual is out of the office, the office door must be locked.